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THE MEDITERRANEAN DIET
FOR SUSTAINABLE REGIONAL
DEVELOPMENT



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INTERNATIONAL CENTRE FOR ADVANCED MEDITERRANEAN AGRONOMIC STUDIES

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Founded in 1962 at the joint initiative of the OECD and the Council of Europe, the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) is an intergovernmental organisation comprising thirteen member countries from the Mediterranean Basin (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey).

The CIHEAM is made up of four Mediterranean Agronomic Institutes (MAI) located in Bari (Italy), Chania (Greece), Montpellier (France) and Zaragoza (Spain) and a General Secretariat in Paris. At present, Adel El-Beltagy chairs the CIHEAM Governing Board and Francisco Mombiola is Secretary General.

In pursuing its three main complementary missions (specialised post-graduate education, networked research and facilitation of the regional debate), the CIHEAM has established itself as an authority in its fields of activity: Mediterranean agriculture, food and sustainable rural development.

In 2012, the CIHEAM celebrates its fiftieth anniversary with trust and hope. *Trust* is essential for developing the Mediterranean partnership, and the CIHEAM thus insists that it does not work “on” but “for” and “with” the Mediterranean region aiming to disseminate the spirit of cooperation. *Hope* also, to continue along the same path as before while adapting to the new political and financial trends that are gradually taking shape in the region.

The CIHEAM views these challenges as tremendous opportunities for the future. Current events constantly demonstrate that agriculture, food and the sustainable management of natural resources are areas of common interest which foster solidarity between peoples.

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The opinions expressed in this work remain the sole responsibility of the authors and in no way reflect the official positions of the CIHEAM.

Since the drafting of this report was completed in the autumn of 2011, the report only takes account of data available before that date.

PREFACE



Agriculture, food and environment – three words that have become virtually inseparable in a world of growing interdependencies, where everything is interconnected, is accelerating and is changing.

Food will always be a fundamental issue, because it is at the core of human activity. In a Mediterranean region where natural resources are under climate and population stress, agricultural production is increasingly having to contend with the requirement of quality, which societies in quest of accountability are demanding through changing consumption patterns and new expectations as to the food they eat. If the health of both man and the planet is to be safeguarded, food production must be geared increasingly to meeting the dual requirement of food safety and environmental sustainability. The Mediterranean region, whose history has always been permeated by the food challenge and the trading of foodstuffs, is no exception to this general trend.

Mediterra 2012 is devoted to the Mediterranean Diet; it is the thirteenth regional report to be published by the CIHEAM, which is celebrating its 50th anniversary this year. By bringing people closer to the land, the Mediterranean Diet clearly shows that the food question must be analysed “from landscape to table”, as this report puts it, that is to say, by examining all of the dynamics – political, social, cultural, economic and legal – of this vast topic.

Work was launched in 2010 on the present edition of *Mediterra*, mobilising in partnership with the European Institute of the Mediterranean (IEMed) and the Mediterranean Diet Foundation (MDF) a scientific network of international experts with profiles as diverse as they are complementary. This multidisciplinary approach was necessary in order to apprehend the various components of the Mediterranean Diet, whose analysis requires a cross-cutting intersectoral approach. The chapters of the report are intended to give an overall picture and to be as instructive as possible. They adopt various scales of analysis (global, national and local) and aim to encourage a regional approach to the questions raised. In addition to the main trends, which they identify and elucidate, the articles reveal emerging phenomena or upheavals which may take place in the short and medium term.

As was the case in previous editions, this edition of *Mediterra* proposes assessment criteria and analyses both for the general public and for the community of actors operating in the Mediterranean region. It is intended both as learning material and as a catalyst for decision-making. More broadly, *Mediterra* aims to make the topics of agriculture and food the focus of scientific debate and of policies on the Mediterranean and to centre the debate on food security and agricultural development throughout the world on this strategic region.

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INTRODUCTION



The fare of the Mediterranean seas

Considered from the geographical point of view, the Mediterranean is first and foremost a sea, or rather a “succession of seas”, to use the phrase so aptly coined by historian Fernand Braudel, for whom any qualifier associated with the Mediterranean should be conjugated in the plural. Despite its small area – it accounts for just under 0.7% of the surface area of the world’s oceans, the Mediterranean has always been that “liquid continent with solid contours”¹, where the shores are never more than a few hundred kilometres apart at the outermost points. Indeed, it is not by chance that this sea derives its name from *mediterraneus*², which means “in the midst of lands”.

And that is also what makes the Mediterranean absolutely unique as the region where three continents meet – Europe, Africa and Asia, a dynamic interface and a melting pot of civilisations conducive to migrations and voyages and thus prompting the intermingling of peoples, the trading of goods and the circulation of ideas. Geography manuals produce delightful descriptions of the region, discussing the configuration of its shores, its longitudinal extension, its three northern peninsulas (the Iberian, Italian and Balkan peninsulas) and its countless islands, which invite the voyager to their many ports of call. It is also a region of incomparable landscapes, where histories, societies and natural environments are closely blended. Shaped by the hand and mind of man, the Mediterranean is thus also a region that has been “lived in”.

To the extent that memory and project seem to be two constantly recurring watchwords for the Mediterranean. In short, it is a complex world, steeped in history and thus in transformations, ruptures and geopolitics. Changing yet enduring, in movement yet eternal – such are the paradoxes raised by the Mediterranean, that teeming hub of time-blended cultures. Indeed, it is diversity, not unity, that is the salient feature of the Mediterranean region.³ Hence the need to emphasise the constant intertwining of history and geography when it comes to apprehending the phenomena at work in the Mediterranean, a sea that is enclosed yet very open to the world.

1 - Gabriel Audisio, *Jeunesse de la Méditerranée*, Paris, Gallimard, 1935, p. 15.

2 - This expression is attributed to the Roman geographer Solin (C. Julius Solinus), who lived in the 3rd century A.D.

3 - David Abulafia, *The Great Sea. A Human History of the Mediterranean*, London, Penguin Books, 2011.

All of these specific features are frequently expressed in strong culinary traditions. Although the existence of Mediterranean values or of a Mediterranean identity may be debatable, it is clear that the relationship with food, gastronomy and thus the land of the people of this region is a consistent link and one which is further strengthened by cultural attachment to the family, sharing and sociability. Food and the flavours of local fare are a language common to the peoples of the various countries on the Mediterranean shores: they are rarely indifferent to what is served on their plate.

Although this is true the world over, it is particularly the case in the Mediterranean region, precisely because Mediterranean foods have evolved there and have blended over time, producing the wide variety of cuisines we know today. This historical and intercultural dimension is one of the Mediterranean's greatest assets, which is reflected both in the landscape and in the dishes served. A mythology has thus gradually evolved around the Mediterranean Diet – a term, it will be recalled, that is derived from the Greek *diáita*, which denotes a localised lifestyle based on both behavioural and culinary patterns.

A new journey to be taken

Mediterranean food is thus the subject of numerous debates and studies with a variety of objectives, one of the target fields being health and nutrition. However, the scientific analyses that are also being conducted on consumer behaviour cannot be ignored – consumers who, both in the Mediterranean countries and elsewhere, are today frequently faced with the dilemma of having to reconcile tradition and modernity, or, to put it simply, having to reconcile agricultural and industrial products. The fact is that the spectacular increase in the number of mouths to be fed in the region in the past few decades has made it imperative to produce and market foodstuffs. It simply is not enough to examine the Mediterranean Diet without placing it in the context of the major issues at stake in the region. Strategies for meeting health and nutrition challenges cannot be reasoned out unless those challenges are seen in conjunction with those of population trends, the environment, the economy, innovation and public action.

Since food issues are factors of various pressures (on resources, on societies) and sometimes even of tensions between States, the world is rediscovering the importance of agriculture. Policymakers proclaim their intention to make agriculture a priority in public action at the local, national and international level. And with the new awareness of environment and health problems, individuals seem to be paying more attention to their behaviour and consumption patterns. In the Mediterranean region, the development models to be promoted will have to reintegrate agricultural, dietary and environmental variables, for in this continuously evolving region agriculture and food are areas of strategic importance for societies, economies, regions and cultures.

To observe the Mediterranean Basin, and more specifically the southern and eastern shores, is to discover a condensed version of the world food issue, which can be summarised in a question that is as simple in appearance as it is complex in reality: how can a growing population be fed in a context of marked water and land resource constraints, where the organisation of national agro-food chains and the regional integration of agricultural systems are still weak? Faced with this question, which is

crucial for the future of the region, production and consumption must be considered in tandem. The food chain is indeed a system where all of the links are interdependent.

The present report thus does not propose to revisit the agricultural, food and rural dynamics of the Mediterranean region; rather, it suggests a new itinerary that cuts across these fields, taking the reader up and down the criss-crossing roads and lanes that lead from landscape to table.

The Mediterranean Diet – between concern and hope

Exploring the roads suggested by the Mediterranean Diet proves to be a fascinating experience. The journey from landscape to table reveals the challenges of harvesting, storage, transport, distribution, promotion and nutrition. To these are added, of course, the major issues of the sustainability of resources, social and environmental responsibility, biodiversity and societal changes, which place the Mediterranean Diet at the core of the current debate on the need to implement “green economy” models in the Mediterranean region. The Mediterranean Diet, that is to say, all of the agronomic, sociocultural and culinary practices of the Mediterranean countries, would indeed be an essential factor for the sustainable development of the region. However, despite the geohistorical heritage that forms the basis of the vitality and wealth of Mediterranean cuisines, the assertion of that diet in actual fact still belongs more to the realm of ambition than to that of reality.⁴

It has admittedly spread far beyond the borders of the Mediterranean countries and is widely celebrated in other societies throughout the world where consumers are aware of the dietary connotation of the products involved. But, apart from the fact that this worldwide dissemination tends to focus on the nutritional and health aspects of the Mediterranean Diet, it also illustrates how the region has been unable to make these aspects one of the salient features of its promotion at the national level. Although the region’s products have special appeal in non-Mediterranean countries, the fact is that the Mediterranean Diet has actually highlighted shifting patterns within the region itself. First of all in the consumption field, since, as the result of the acceleration in nutrition transition, populations have often abandoned certain traditions and adopted dietary patterns which depart from the principles of the Mediterranean Diet – to such an extent that some authors now even question the very existence of that diet.⁵ And patterns are also changing in the geopolitical field, since the Mediterranean Diet, which epitomises the universal assets of the region, is above all the embodiment of the riparian countries’ inability to join forces in order to promote all of its dimensions more effectively.

Yet there are many reasons to believe in the diet’s mobilisation potential at a time when Mediterranean societies are expressing new aspirations and a reminder is needed of the levers available for stimulating togetherness. For the present report by no means intends to present the Mediterranean Diet as a global model – far from it. On the contrary, the idea is to highlight the opportunities it offers, not only “from farm to fork” but “from

4 - Clifford A. Wright, *Mediterranean Feast: The Story Of The Birth Of The Celebrated Cuisines Of The Mediterranean*, New York (N.Y.), William Morrow Cookbooks, 1999.

5 - Annia Ciezadlo, “Does the Mediterranean Diet Even Exist?”, *The New York Times*, 1 April 2011.

landscape to table”, for contributing to the sustainable development of the Mediterranean area. Having been recognised as a nutrition reference model by the World Health Organisation in 1994 and added to UNESCO’s list of the Intangible Cultural Heritage of Humanity in 2010, the diet can also be regarded as a lever for changing the course of human and economic development in the countries of the region.

Multidisciplinary expertise for a cross-cutting report

To trace the route of this journey, the approach must be both scientific and political:

- it must be scientific, because the Mediterranean Diet raises major questions concerning nutrition, product quality, research and innovation, and the construction of a food model, but also concerning the preservation of biodiversity and natural resources. Furthermore, it involves travelling through the eras of history and pointing to the demographic and sociocultural changes that have taken place in the region;
- and it must be political, because to discuss the subject of the Mediterranean Diet is to prompt a debate on social responsibility in production, distribution and consumption, but also to promote preventive nutrition for human health, to question how food chains are organised, to explore both the commercial opportunities and the legal risks, to scrutinise the globalisation of trade or to debate public action in the food domain (education, local authorities, regulations, etc.).

Mediterra 2012 thus endeavours to provide insight from three major aspects in the various chapters of the report.

- Since the Mediterranean Diet is a multidimensional concept, the report endeavours to deal with all of the issues involved in the problem as a whole, from economy to society, from the cultural to the commercial, from population trends to the environment, from consumption to economic intelligence, and from education to political action.
- Since the Mediterranean Diet is a plural concept, the report reveals the controversies it creates with a view to furthering scientific debate. It compares viewpoints in order to illustrate both the brakes and the forces that the diet can generate in the debate on the implementation of sustainable food patterns.
- Since the Mediterranean Diet is a mobilising concept, *Mediterra* highlights how it can play a role in the efforts to seek a more sustainable food system and greater regional cooperation. Furthermore, it shows how the diet can be a vector for implementing responsible development strategies by participating both in the action to combat climate change and in the efforts to mitigate food insecurities.

Despite the fact that unity is increasingly virtual – the evidence of real diversities – the feeling that the Mediterranean generates exchange and sharing as well as contacts and intermingling must not fade. The Mediterranean Diet is a subject on which research and cooperation are at the service of responsible development in the countries of the region.

An itinerary in eight stages

The report is divided into eight parts in view of the multidimensional aspect of the Mediterranean Diet. Given the region's historical heritage and its place in the focus of researchers, it seemed obvious to take these considerations as a point of departure before developing the other aspects. Then, since the Mediterranean Diet is first and foremost a human product, the report endeavours to analyse the transformations and even mutations of the Mediterranean societies that are its repository, establishing a discrepancy and perhaps even a departure from the various forms of the Mediterranean dietary heritage whereas in some cases other societies are following its path. The diet is indeed celebrated as a model that is beneficial for human health, and its appeal extends far beyond its original matrix.

However, it is one thing to produce balanced food successfully with response in certain countries farther afield, but the pressure it can place on resources is quite another matter. This is the subject of Part 3 of this report. Likewise, it was also considered important to analyse the repercussions that the development – or, for that matter, the discontinuation – of the Mediterranean Diet can have on Mediterranean landscapes. Although Mediterranean food raises questions in terms of environmental sustainability, it also raises the issue of social sustainability. Part 4 analyses the action of the producers, distributors and consumers involved in the food system through the prism of their social responsibility.

Furthermore, since these actors on the Mediterranean food scene introduce technical and organisational innovations in order to make their activities more productive, we have focused on the subject in Part 5, which then also examines the monitoring of food quality and food safety, essentially in the European area. The products of the Mediterranean food system are of course essentially intended for marketing. Part 7 is thus devoted to analysing the place of these products in agricultural trade; it also discusses strategies for protecting them on a market where “imitation” strategies also prevail. Although this latter point touches on public policies, it is essentially the final section of the report that is dedicated to the policies pursued in order to promote the Mediterranean Diet. The report discusses in particular dietary education and tourism, both of which can be very effective means of restoring dietary habits. And the cornerstone of these promotion policies, the inclusion of the Mediterranean Diet on UNESCO's Intangible Cultural Heritage list, deserved to be the focus of the final chapter of the report.





1 PART ONE

ORIGINS

and construction of the
Mediterranean Diet



THE MEDITERRANEAN DIET: DESIGNED FOR THE FUTURE

Joan Reguant-Aleix
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Beyond words

To talk of the Mediterranean Diet is to face the challenge of how to handle two terms, or rather to seek the marriage of the two, each of colossal content and each perceived or understood in truly different ways. Today, this has given rise to an association of elements that has hit the media, and which appeals to the interest of scientists, academics and organisations of many fields of expertise and has become a social icon whose expansion has increased progressively since the last thirty years of the twentieth century, particularly in the area that we call of western culture and undoubtedly in the rest of the world too.

The expression “Mediterranean Diet” evokes a complex space dating back thousands of years and bringing together movement, the Mediterranean Sea and a clearly dynamic lifestyle of individuals and peoples that have inhabited its lands or crossed its sea, who have interacted with this space constantly, permanently reshaping it and being reshaped themselves. Thus, these words refer to the “diet”¹ that is followed in the Mediterranean². This is a process whose incessant journeys we have given a name, a name that englobes all its movements backwards and forwards, its traditions and innovations, its endogenous and exogenous dynamics.

This is no triviality. First of all, none of these two terms has a unanimously accepted “identity” yet they do have varied and often contradictory perceptions or definitions that are analysed at the same time from diverse points of view, which lead to multiple distortions. In the second place, the unique feature of the expression in grammatical terms gives rise to bipolar debates that are not always rigorous, on the differences versus

1 - This term will be addressed afterwards.

2 - It is essential to point out that when we speak of the Mediterranean Diet we refer to that which is practised *in the Mediterranean*. Another thing which neither excludes nor modifies what we have just underlined, is that this lifestyle is adopted in other places. Nor do we refer to the other four Mediterranean bioclimatic regions in the world (the Cape region, the coast of California, the low lands of central Chile, the Australian coasts of Perth and Adelaide). As can be easily appreciated, beyond this climatic coincidence that may imply similar landscapes, the processes of acculturation and anthropization do not bear the slightest resemblance.

the uniformity of this small universe called the Mediterranean. Thirdly, the two terms designate “things” with imprecise limits that are difficult to pin down, and even more difficult to reconcile, and hence it is very easy to fall into Aristotelian vertigo: “if the definition of a body is that which is delimited by a surface area, an infinite body cannot exist, neither sensitive nor thought³”. To a certain extent we are “map-dependent” and all that which does not allow for a geometric limit or which cannot be mapped exactly, practically does not exist.

The Mediterranean, much more than a sea

The term “Mediterranean” is used to refer to the Sea itself and, moreover, to the space that conforms the sea and the surrounding lands. The Mediterranean has transcended the geographical scope and has risen to the category of idea, concept, historic figure, place full of representations, often swinging between myth and reality. In fact, now when we talk of “Mediterranean” unless referring explicitly to a precise maritime aspect, we rarely think automatically only of the sea or even a more or less well-defined territory. The mention of this term becomes an immediate reference to a group of tangible and intangible qualities, relatively real, idealised to a greater or lesser degree, much more than a physical space in itself.

Right at the crossroads of three continents: Europe, Africa and Asia, since the XVI century, the Mediterranean has been endowed with a connection with the “New World”, it has been the cradle and melting pot of western civilisation, and over thousands of years has been built on exchanges of all types, tangible and intangible, pacific and violent, equal and unequal, long-lasting and sporadic, proximate and distant, directly and through intermediaries. Too small not to resemble each other, too big to be the same. Too near not to cross each other and at times to avoid collision. Too near and yet with scarce mutual knowledge.

In this permanent *blend* each has something of the “Other” and in the “Other” each can see himself reflected. The vestiges do not deceive us, place names and heritage names accredit this, every step of the way the landscape shows this, the Gods consecrate it. Festivities celebrate it and our calendar marks the pace. This fusion can be more intense between some areas than between others but no corner or person of the Mediterranean can elude it, in this constant coming and going of people, products and autochthonous and foreign ideas that nurture it and turn it into a unique space. “To travel through the Mediterranean is to come across the Roman world in the Lebanon, prehistoric times in Sardinia, the Greek villages in Sicily and the Arab presence in Spain, the Turkish islam in Yugoslavia” (Braudel, 1985) and to that we could add an African oasis in Elche in the Levant of Spain.

No-one in the Mediterranean possesses it but everyone contributes to its making, “all the shores are touched by the same Mediterranean and share its history and Culture” (Chikhi, 2001). Each of us conforms such a limited synthesis of this space and an indispensable portion of it that makes it impossible to define it and describe it completely.

3 - Aristotle, *Physics*, Ph. 3.5 (204b), Paris, Librairie philosophique J. Vrin, coll. “Bibliothèque des textes philosophiques-Poche”, 1999.

“No single people brings together all the Mediterranean features: they are scattered from one extreme to the other of the Mediterranean” (Matvejevitch, 1992). A universe of neighbourhoods, in the Mediterranean each is just as necessary as the next when explaining and describing it. It is not a place of half a dozen dogmas, but a constellation of details. “An interminable sum of fortunes, accidents and repeated achievements” (Braudel, 1985). The Mediterranean moves, the Mediterranean lives. Even though at times it seems to be in different eras (2012, 1433, 5772) we share the same time and a common space.

A space with slippery limits

As Paul Cézanne said: “the contours escape me”; Aristide Maillol stated: “nature is mobile and changing. You make a contour, a slight shift, or a minute detail prevents you from finding it an hour later”. Anyone who has studied the landscape and the cartography knows how difficult it is to map limits, in the context of the tangible and the intangible, because the landscape is changing constantly. It is not static and the changes, transformations and plasticity do not adjust well to maps, which tend to consecrate theoretically indisputable realities, frozen in time, such as the limits between water and lands or political territories.

The judicial sense is practical and in its definition of sea there is probably no discussion. In international law the sea refers to a surface area defined by the shoreline, that is, the territory that is always covered with water. In the words of Matvejevitch, “the problem is that coasts trace the limits of the sea, not those of the Mediterranean”. It is the coasts in ancient times that were also used to delimit the Mediterranean and to give specific names to many parts of this sea according to the name of the lands to which they belong (hence, in the times of Plinium, Hispania, Gaul, Liguria, Thyrrhonia, Cretica,...). Today we still conserve many of them. A sea to which the lands give their name: Mediterranean, *Mediterraneus*⁴, the sea in the midst of lands.

The Mediterranean, this historic figure, since Fernand Braudel, slippery in its terrestrial limits. Undoubtedly the Mediterranean is, in the words of this historian, both lands and sea, but how far, inland? This is a question without an answer or at least with many inconclusive or non convincing answers. In the first place because an “original” or “authentic” Mediterranean that many obsess about and lose themselves in does not exist. Instead, a countless number of Mediterraneans have followed on from each other over time offering a given profile and character at each instant, fruit of multicultural energies both of their own and brought in from elsewhere. It is useless to seek the Mediterranean that we would keep as a timeless and eternal “template”. It would not be easy to find *the* Mediterranean with clear cartographic limits, if it were not for convention and based on a given discipline or according to a need, we could define “a” given Mediterranean⁵. Different dynamics have produced and continue to produce shapes

4 - This term appears for the first time in *Etymologies* of Saint Isidore of Seville, written between the years 627 and 630. “*Mediterraneus, quia per mediam terram usque ad orientem perfunditur, Europam et Africam Asiamque disternans*” (Saint Isidore of Seville, *Etymologies*, vol. II, Madrid, Library of Christian Authors, 1983).

5 - The *Environmental Atlas of Mediterrània* considers that this territory is formed by [literal transcription] “Albania, Algeria, Bosnia-Herzegovina, Croatia, Egypt, France, Greece, Israel and the Palestinian Authority, Italy, Jordan, Lebanon, Libya, Macedonia, Malta, Morocco, Slovenia, Spain, Yugoslavia (Serbia and Montenegro), Syria, Tunisia, Turkey and Cyprus,

that are more or less saturated and quite fuzzy, or diffuse. From different perspectives or disciplines the Mediterranean widens or narrows, or becomes larger or smaller. The same thing happens when it is observed at different times.

“The Mediterranean is an absurdly small sea: the length and greatness of its history makes us dream it larger than it is”, states Lawrence Durrell in his *Balthazar*. Indeed, because the Mediterranean is more than the geography and history of thousands of years that it carries on its shoulders, it gives this area an extraordinary dimension. This historic immensity was already discerned by Braudel: “The complete history of the Mediterranean is such a mass of knowledge that it defies all reasonable synthesis” (Braudel, 1985). To whom Predrag Matvejevitch responded: “We do not know exactly how far the Mediterranean reaches, which part of the coast it occupies, where it ends inland or in the sea. [...] There are places where the continent does not join the sea [...] beyond, the Mediterranean nature englobes vaster parts of the continent, penetrates them further with its influence. The Mediterranean is not only a geography. [...] A circle of chalk drawn and erased incessantly, but waves and winds, works and inspirations that swell or shrink [...]” (Matvejevitch, 1992).

When attempting to set limits to the Mediterranean, climatic limits have been traced, but these have their weaknesses: the biogeographical Mediterranean overflows the Mediterranean basin altogether, and at the same time does not cover it totally. Whilst the desert reaches the coast in Libya converting it into a country of the Mediterranean basin, it does not belong to the Mediterranean domain in biogeographical terms, they are bioclimatically Mediterranean territories very far from the classical Mediterranean basin. Nor do the historic-type limits seem to be satisfactory. The Roman Empire that is sketched as a large “unified” area for a significant time around the Mediterranean corresponds approximately to the Mediterranean biome, but it is evident that it includes northern territories that are indeed distal or a modest strip on the southern coast.

Attempts have been made at agricultural or livestock farming limits. In this case the olive tree seems to be the great common denominator and boundary although it still presents limitations, such as for example the maximum level at which olives are grown. Making the limits of these groves coincide with those of the Mediterranean has been a frequent option, taken by historians, anthropologists or writers. Fernand Braudel writes: “When arriving from the North, the Mediterranean commences at the first olive grove and stretches to the first palm groves that rise in the desert” Igor de Garine affirms: “we can conveniently describe the Mediterranean area as that which enables the culture of cereals, vines and olives as well as livestock farming, that was transhumant in the past and now is sedentary, dominated by sheep and goat farming”. Furthermore, Georges Duhamel declares sententiously: “There where the olive withdraws, so too does the Mediterranean”. It was probably the combination of all these efforts to delimit as well as the many other attempts made, that which best make up a densiometric type image,

plus the microstates of Andorra, Monaco, San Marino, and the Vatican, and the British Colony of Gibraltar; 17% of the total territory of these states can be considered to be Mediterranean proper”. And he adds: “By extension, the basin of the Black Sea can be assimilated to the eastern Mediterranean; in this case Bulgaria, Georgia, Moldavia, Rumania, Russia and Ukraine can also participate in the Mediterranean space. Portugal does not have a Mediterranean coastline, nor does it belong to the sea basin, but a large part of its territory is biologically Mediterranean” (Ramon Folch [ed.], *Mediterrània. Territoris i Paisatge. Atlas Ambiental de la Mediterrània*, Barcelona, Fundació Territoris i Paisatge, 1999).

in which in any case rather imprecise limits coexist. This is reasonably logical. Let us not be trapped into sterile chimaeras.

A sculptured landscape

Beyond perimetral considerations, the Mediterranean gives its name to a region that has undergone a great deal of anthropic intervention since ancient times. Today it is even more intensely modified by Man. As a “cultural landscape”, namely as a result of the permanent and intense interaction between man and nature, the Mediterranean leaves no more than a few inches of land “in its natural state”, reaching considerable degrees of artificialisation. It can be said that as a whole the Mediterranean is a landscape that has been sculpted over thousands of years, in an uninterrupted process, whereby communications and infrastructures, traditional and industrial agriculture, the singular and specific processes of land occupation and built-up areas or industrial complexes have been leaving unique and differentiating tracks.

The Mediterranean is mostly a food-based landscape. It is the reflection of an agroforestry, livestock and fishing history stretching back thousands of years and that began to take form at its eastern extreme. Those incredible agricultural and livestock achievements in impossible territories announce the modelled future of the land throughout the whole basin, turning it into a characteristic and unique landscape. A landscape as fragile as it is obstinate, as austere as it is generous with a delicate functionality, producing almost always to the limit of its capacities.

Think of the colossal work of the terraces and the dry stone walls to transform thousands of impassable and stony hillslopes. In a minute environment on a Mediterranean scale, such as the vine growing territory of the Designation of Origin Banyuls, in the French Rosellón, more than 6,000 km of dry stone walls of an average height of 0.80 m have been recorded (the maximum dimension of the Mediterranean, from E to W, does not reach 4,000 km). The result: a landscape of great beauty and harmony but also of great technical and testimonial efficacy of an exercise of environmental respect and insurmountable sustainability, of precise adaptation to the place and available resources⁶. We say, that today this still is incomparable. Lace-work agriculture.

A song of praise to the wise management of scales, effort, tenacity, where olive trees, vines, almond trees and fig trees find their place. And this is so from Banyuls in the South of France to Palestine and from Cinqueterre in Italy to Kabilia in the North of Algeria, wherever there is a slope to plant this unique type of crop. The Mediterranean is a sea of dry stone, it is the landscape of dry stone, it is dry stone become landscape (Reguant-Aleix, 2005), an essential feature of its character and one of its many languages and tales. As Matvejevitch well observes, “it took greater toil to rotivate the hillsides for the vines than to build the pyramids”.

6 - It was in the heart of this landscape of dry stone of Rosellón that Aristides Maillol (1861-1944) created the two key works *The Mediterranean* (1900-1902) and *Harmony* (1940-1944), the latter, in the words of Éric Elevergeois, “a music in tune with the world that has to be listened to infinitely, in order to reach a type of harmony from by-gone days that has arisen in the midst of the 20 century” (<http://elevergeois.over-blog.com/article-l-harmonie-la-derniere-statue-d-aristide-maillol-43786750.html>). “I wanted to reproduce a modern form from an ancient instrument” Maillol would say. Roots, creativity and future.

The “sea amid lands” from ancient times to today has been “the sea between cities”. Arisen from the sounds uttered by the Mediterranean, they have survived empires, colonisations and States⁷. The Mediterranean is a sea of cities situated around and dotted along all its coastlines like a rosary, weaving together the territories that embrace it. They all constitute an essential feature of landscape and Mediterranean character. State-cities or city-states of yesterday (some rare exceptions remain today), are fundamental poles of today, beyond the states to which they belong, of the socioeconomic and cultural dynamics of this sea. Just like yesterday, nuclei of ideas, intelligence, innovation and creativity, of Mediterranean urban culture. Some of them although relevant at the time are today only vestigial remains, witnesses to past episodes which should be understood in order to understand our present. Many others continue to accumulate centuries of history, explaining the Mediterranean that is alive today and inventing its future.

These Mediterranean cities, compact and full of mixticities, their squares with blends of cultures, packed with history and experiences and of diverse etymologies, are living proof of the diversity of the Mediterranean universe, and present the history of the Mediterranean from a privileged standpoint, because probably the history of the cities more than any other reflects precisely the history of men. “Divine nature created the fields, the art of man created the cities⁸” (Varrón). In these cities, most of the incessant exchanges of ideas, knowledge, techniques and products have occurred and still do so. The cities, the markets at port, the markets inland, the ports and also the academies, have been fundamental in the transfer and integration of food products as well as in the adaptation and interpretation of culinary techniques and preparations. The cuisine and the table have been written in the cities, the lifestyle has been amplified and extended contributing to the transmission of traditional knowledge and to the stimulating daring of innovation.

The Mediterranean Diet owes an important part of its variety and richness to this urban Mediterranean dynamics, both in products, techniques, gestures and habits. However, today more than ever, the cities owe the Mediterranean Diet the visibility of a central feature of its identity and that of the basin to which they belong: that of a unique way of life that visually delivers the landscape to the table and that represents an important factor of both self esteem of its populations, of inclusion and dialogue and of the promotion of its productive sectors and of its services and a first-degree tourist attractions for travellers visiting the area.

In these cities, whether large, medium or small, a space dating back thousands of years deserves a special mention: the market, a word which already evokes, in its many nuances, many other historic or modern meanings: emporium, agora, forum, bazaar, souk, plaza..., all these words are familiar to us and in none of the spaces that they represent do we feel like strangers. The market is another of the hallmarks of the Mediterranean and of the Mediterranean Diet. Place and time are fundamental. “It is an immersion into the Mediterranean culture and its emblems” (Kanafani-Zahar, 2004). It is the heart of any city or town and point where everything converges, a point of exchange. Already

7 - Many are the examples of cities that still vibrate today, like a pastry with layer upon layer laid down over thousands of years by a multitude of cultures and diverse cultures. Beit She’an, in the Near East, is one of the many examples with roots in the V millenium A.C., the remains of the Bronze Age, and its passage through Egyptian, Biblical, Hellenistic, Roman, Byzantine, Umayyad, of the Crusades, Mamluke, Ottoman times.

8 - Marco Terenzio Varrone (116 B.C.-27 B.C.), *Rerum Rusticarum libri*.

in Sumer in southern Mesopotamia the ideogram “Y” designated the market, as an essential landmark along the roads. “The space that is devoted to the market places can be compared to that which is occupied by the most important institutions: town halls or citadels, churches and cemeteries” (Matvejevitch, 1992). Whether permanent or temporary, daily, weekly or with other frequencies, markets are dynamic and happy places, they bring people together. They are key elements of the social fabric of the cities and their districts. They are places of cultural exchange, of transfer of knowledge, apprenticeship, integration and sociability, where commercial, social, recreational and cultural activities often converge. In the markets, agreements are made, acts of trust and good neighbourship are practised and learnt. Markets are wars fought pacifically, wars are the result of unfortunate transactions⁹. Markets are great city showcases for the countryside and the sea, as well as for identities, landscapes, freshness, colours, tastes and aromas. They are places of learning, marking the rhythm of the seasonal and festive calendar. By way of exaggeration (or perhaps not), someone said that these are the cathedrals of the Mediterranean Diet.

A sea of achievements

The Mediterranean gives its name to a type of sea, the type that connects with an ocean through a stretch of water. The Mediterranean is just that, almost a lake (it takes 90 years to renew its waters), only naturally open at the 14.4 km of the straits of Gibraltar that feed it with the waters of the Atlantic to keep it from drying (more water evaporates from the Mediterranean than is supplied by its rivers) and since 1869 it has been connected with the Red Sea through the Suez canal, which was a turning point in geopolitical, commercial and even environmental terms. Almost 4,000 km from E to W, 850 km maximum width and a surface area of water of 2.9 million km², equivalent to the surface area of the historic Maghreb region (Morocco, Algeria, Tunisia), with an average depth of 1,430 m and a maximum of 5,121 m in the Ionic depression off the western coast of Peloponnese. The insularity, with more than 2000 islands, several hundred of them inhabited and some of them of great historic and strategic importance, is another characteristic of this sea with more than 46,000 km of coastline, mostly abrupt, with a wide variety of landscape units on firm ground, with a clearly accidental character, that at the same time provide or embody particular microclimatic situations, almost always marked by an unpredictable rainfall and limiting temperatures. It is the unique Mediterranean climate that always has farmers looking anxiously up to the sky, to say nothing of the fishermen. It is the essential unit of this sea, according to Fernand Braudel.

There are about thirty states situated around this quasi lake, with more than 450 million inhabitants, a third of whom dwell on the coast. An enormous population in comparison with the tiny size of the sea (0.7% of the total surface area of oceans and seas), even more so if we zoom in and scale up to the regions or minor divisions, dozens and dozens of them, many of which with different levels of autonomy or decentralisation which portray this dense and complex mosaic of a thousand colours constituting the Mediterranean sea. The 300 million visitors (around one third of the world tourism) – mostly concentrated on the coast on a strip less than 100 m wide – and over 220,000 boats that cross this sea

9 - Claude Lévy-Strauss, *Les Structures élémentaires de la parenté*, Paris, The Hague, Mouton-De Gruyter, 2002 [2nd ed.].

in all directions, contribute to this variegation of colours. Socrates, in Plato's *Feddon* already expresses this image in words when referring to the inhabitants of the Mediterranean: "those that dwell between Phasis and the Pillars of Hercules, on a small strip of land surrounding the sea, like ants or toads around a puddle".

In 1995, Theroux, in his journey around the Mediterranean that he published under the title of *The Pillars of Hercules*, picks up, on this coast, a more "constructivist" vision than that of the Greek philosopher: "The landscape remained obliterated, and from the shore of the Mediterranean to the arid and sharp inland hillsides, there were bone-coloured villas. There were no hills worthy of mention, just tiers of houses jutting out like a wedding cake about to cave in". The problem of urbanisation along the coast had already arisen during those years. Mass tourism has exacerbated this phenomenon, with costly consequences for the coast in terms of landscape, environment, economy and quality of life even more costly to correct and amend. The present crisis has revealed this process still further.

This territorial, landscape and environmental stress does not come free of charge. With only 0.7% of the surface area of the continental salt waters, the Mediterranean concentrates 25% of the traffic of the planet and 30% of the traffic of oil. The latter means that more than 300,000 tonnes of petrol are poured annually into the sea. If we add industrial waste, inadequately treated wastewaters and solid waste, including plastic, a painful price is to be paid by the environment. The mercury levels (up to 1.2 mg/kg, almost double what is permitted) detected in fish for human consumption, leave no room for doubt.

On firm ground, in this incredibly fragile Mediterranean, the pressure on biodiversity, natural habitats, landscape, – that becomes hazy and adds to confusion –, the agricultural territories and in particular the water resources, are felt considerably. Half of the 46,000 km of coastline affected by the urbanisation of the coast, the intense metropolisation, the loss of more than 75% of the dune ecosystems of the coast, that furthermore have lost more than a million hectares of natural habitat in the last 60 years, or more than 50% of the lands affected by risk of erosion, of which 30% suffer losses greater than 15 tonnes per hectare and per year, are just some examples of these dangerous dynamics. Even so – the Mediterranean is also paradoxical – it is one of the 25 most exceptional areas of the planet for its distribution of plant and animal species and its important biodiversity. Half of its more than 25,000 of the inventoried maritime species, are only to be found in this sea.

It could be said that these comings and goings from North to South and from East to West have existed in the Mediterranean since time immemorial. Indeed, this may not only be one of its identity marks, but also a determining vector in the modelling of this landscape and its peoples, in the configuration of this space. Having said that, in order to adopt a rigorous approach one should commence by managing scales, since the threats to the Mediterranean ecosystem from human activities are objectifiable.

In this sense, the testimony of Mount Testaccio¹⁰ is impressive, on the banks of the Tiber in Rome, when Luigi Bruzza and Heinrich Dressel began to study it in 1872. A "mount"

10 - Rome, University La Sapienza (exhibition in Rome organised by the Dipartimento di Scienze della Terra), Barcelona, University of Barcelona (exhibition held by CEIPAC; http://ceipac.gh.ub.es/MOSTRA/e_expo.htm).

of 22,000 m², 50 m high and a kilometre and half in perimeter. This artificial mountain, perhaps the first controlled spoil heap in history and the result of globalisation – with traceability included – of the ancient Mediterranean “world”, revealed 24,750,000 terracotta amphorae¹¹ (lost vessels; 80% from Baetica, 15-17% African, 3-5% wine vessels from Gaul and Italia, recipients for *garum* and oriental amphorae), carefully and intelligently applied and covered with lime and finally by earth. Roman ships whose length rarely exceeded 40 m, in the months of *mare apertum*, transported 173,250,000 kg of olive oil towards Rome, between the centuries I and III A.D. Impressive quantities, limited however to this part of the Mediterranean and to this product alone. There are records of many similar routes for the Egyptian and African grain, Greek wine or so many other raw materials or elaborated food products, among them the persistent *garum*, apart from all types of other products and materials. An enormous task of production, bottling, coastal shipping, loading and unloading, storage, distribution, redistribution, accountancy, control and recycling.

However, nowadays, a *Suezmax* (not the biggest type), is one of the largest petrol tankers, capable of crossing the Suez Canal. Measuring over 250 m in length, in a single trip it can transport the equivalent of 1,000,000 barrels in liquid form, that is 159 million litres or rather an equivalent weight of oil of 146,280,000 kg, not very far from the 173,000,000 kg estimated to have been transported in the amphorae accumulated in Mount Testaccio between centuries I and III of our era. Scales are important, very important. In biblical times a large craft had already been thought of: Noah's Ark, entrusted with the responsibility of loading the complete representation of the living world, 300 cubits (approx. 150 m) in length, 50 in width and 30 in height (Genesis, VI, 15).

The Mediterranean has not changed in size, the anthropisation to which it is being submitted as well as all the new dynamics that it supports, has changed in an overwhelmingly exponential fashion. This small area of the planet withstands ever-growing pressure per cm². Both the lands and the sea of this space that we call the Mediterranean are highly fragile and are relatively small in size, with natural resources, especially water, that are certainly limited and with little resilience. However, this fragile and tense space today, in environmental and landscape terms, continues to be the necessary and indispensable substrate of the Mediterranean Diet. It is because in this space that the acts of its history are engraved (Lefebvre, 1981), and its great capital is accumulated too: landscape, this product that is constantly being updated, the result of dialogue between the territory and its peoples. Landscape, natural, agricultural, urban and otherwise is today one of the most highly appreciated assets and with most future, although, let us not forget an asset which is limited and non renewable.

This capital is a temporary bridge between the past and the future and is prepared in the present (Meyer-Bisch, 2009). Therefore, today it is necessary to make the right decisions and find the most appropriate solutions, adapt them to characteristics and singularities

11 - The amphorae have turned out to be a genuine archive thanks to the inscriptions that remain upon them and contain detailed precious information: owner of the oil, date and year of manufacture and names of those controlling production, the rare oil, the name of the merchant, the net weight. Labelled in this way, the amphorae were submitted to controls carried out by the tax officers. Once the weight was checked, they would write in italics, normally under one of the handles, the name of the place of control, the consular year, exact weight and name of the controller (Rome, University La Sapienza [exhibition in Rome organised by the Dipartimento di Scienze della Terra], Barcelona, University of Barcelona [exhibition held by CEIPAC; http://ceipac.gh.ub.es/MOSTRA/e_expo.htm]).

of the Mediterranean, to its scales and values and not the other way around, bending it and disfiguring it – it would often seem to be done via remote control – to comply with incoherent parameters with the profile and values of the basin. Its valuation will depend on the quality of this landscape and especially on its capacity to generate opportunities. A quality *dieta*, or lifestyle, cannot exist in a deformed and mediocre landscape. A quality environment is today a driver of economic prosperity and for the majority an environment or pleasant landscape has a strong historic dimension and is impregnated with a legible past and present (Fairclough, 2009). The Mediterranean landscape, paradigm of a global food landscape, from the most remote and hidden valley to the most cosmopolitan plaza, reflects its table, as its table evokes this landscape, showing a way of life perhaps easier to discover and feel than to explain and define. This landscape has its balances, scales, contrasts, specificities. Wise management to respect values and specificities, from the conviction of its potentialities and contributing the efforts required, is the key to a reasonable and decent future.

The Mediterranean Diet, much more than a nutritional guideline

In the past decades the use of the term “diet” has increased tremendously. In general terms, as explained by most dictionaries and shown by the media, it is associated to specific food regimes as prescribed by some medical professionals (or otherwise), normally of a restrictive nature and with therapeutic or aesthetic purposes. This is the meaning of the term most commonly used by the media and the general public. In a significantly wider sense, it is also understood as the type of food habitually consumed by an individual or community whose size depends on the population or territory.

But let us look at the root. Etymologically, the word *dieta* comes from the Latin *diaeta* which in turn comes from the Greek *diáita*, “way of living”, “life regime”¹². In his Greek-French dictionary¹³ (1895, 1901), Anatole Bailly – a renowned Hellenist – translates the term *diáita* as type of life (“genre de vie”) and specifies (as a first meaning): “in general, a whole set of habits of the body and the spirit, tastes, customs, etc.”¹⁴ Classical authors already used this term with the same sense as that used by Bailly. Hence, Aristotle: “the way of life (*diáita*) of the Ephors is not compliant with the State objective” (*Politics*, II, 127b); Plato in *Republic* and *Laws*; Herodotus in *The Histories*; Pindar in *Pythian*; etc. and of course Hippocrates in his works on medicine and dietetics, not exempt from philosophy. This “way of living”, is what we also know today as “lifestyle”. Style or way of life characterising individuals, groups, communities or villages and which make them similar or different from each other. Therefore, the Mediterranean Diet is this evidently dynamic and ever changing lifestyle that takes place in the Mediterranean, with all its diversity and lack of uniformity, with all its tones and accents. The Mediterranean Diet flees from the restricting meanings of the term diet and considers it in its holistic and transversal sense, nurtured with both tangible and intangible aspects and values.

12 - Joan Corominas, *Breve diccionario etimológico de la lengua española*, Madrid, Gredos, 2000 [3rd ed.].

13 - Anatole Bailly, *Le Grand Bailly Dictionnaire grec-français*, Paris, Hachette Éducation, 2000

14 - There is no doubt about the holistic nature of the term which includes both tangible and intangible aspects.

Some other designations have coexisted with the Mediterranean Diet: Mediterranean foods, Mediterranean food style, Mediterranean cuisine. These designations also have plurals: Mediterranean Diets, Mediterranean cuisines. In the former case, the prejudice of the medical sense or the restricting nature of the term can hold back and limit the use of the expression “Mediterranean Diet”. In the second case the plurals are the result of an argument used by those who believe that we cannot talk about “one” single diet, but that there are “many” diets in the Mediterranean just as there are many cuisines. It is a persistent argument which is also applied to the Mediterranean by those who think it is not relevant to consider it as a whole.

It is not the intention of this chapter to attempt to solve this debate. We would not be so bold. We believe, however, that this debate is sometimes approached on inappropriate scales or the focus is unsuitable. Likewise, we understand that some options that are presented as contradictory or conflicting, are in fact perfectly compatible. We are all aware that there is an almost endless selection of books, TV programmes, courses, etc. that can tackle diet or cooking – it is much less frequent for “lifestyles” to be approached – at any different level. Every lower level is contained within the next one up, it is the visibility or clarity that is modified, due purely to issues of scale or definition. If, let us say, we talk about the Greek diet, we are including continental and island diets; which could be considered very diverse. But if for instance we start by addressing the continental Greek diet, then we could be dealing with regions that are also taken to be different from each other. And we could go on still further, from retail or group or from micro to macro. The important factor is that no level eliminates the other, they all persist and exist, their dynamics continue and can be expressed at the same time. It is a question of activating each level when we wish or need it. There is no exclusion or conflict. The only thing is that some levels will be more or less visible depending on how suitable or unsuitable the approach or intention is, as well as the predetermined objectives. The same applies to the “lifestyles”.

The Mediterranean Diet confers a name to a Mediterranean dynamic cultural complex, which is in permanent movement, with many potential scales of interpretation, from the landscape to the table, and which has been taking shape and evolving for thousands of years. The Mediterranean Diet, as common patrimony of the Mediterranean people, may play a fundamental role in consolidating their identity but also exists as a source of identity in itself (Fairclough, 2009) and as thus a factor of inclusion and dialogue, as well as of knowledge and personal development. This patrimony came into existence when the first communities settled around the Mediterranean in its eastern basin. At that time they were only fine and fuzzy threads, but today they are woven into a dense fabric, an unequalled legacy of landscapes, places, knowledge, know-how, technologies, products, myths and beliefs, accents, creativity, hospitalities and collisions that constitute this common capital, in which all have participated and everybody recognises each other, wherein a term that has arisen from our roots has been given a name and the shared space has been given a surname. The Mediterranean Diet, is in short, a, or perhaps “the”, common language of the Mediterranean people.

This integrated and integrating holistic understanding of the Mediterranean Diet, considered more of a nutritional pattern englobing aspects other than the purely material,

is relatively recent. Through his works and publications, but also thanks to his sensitivity, his observation skills and his curiosity, the researcher Ancel Keys¹⁵ not only showed a transcendental relationship between diet and cardiovascular diseases but also discovered and disseminated with passion a lifestyle that fascinated him and which he understood as indivisible and substantial to everything he was studying in the Mediterranean. It was that “warmth which filled his whole body”, and never deserted him, fruits of the sun, of the human atmosphere and the environment, which he felt when he first arrived in the Mediterranean. His disciples and other professionals who followed in his wake, have contributed in recent decades to spreading the significance of the Mediterranean Diet. His interdisciplinary approach, which has been adopted lately through sociology, anthropology, economics, agronomy and biology, among others, has helped to extend its perception considerably. Another important milestone in the dissemination of its significance was the inscription of the Mediterranean Diet in the List of Intangible Cultural Heritage of Humanity by UNESCO, in November 2010. In no case is it an ultimate milestone, but rather an undertaking to work to safeguard this legacy. The present book is undoubtedly the fresher contribution to this transversality. This is nothing new to the CIHEAM, since agriculture, food sustainability and food safety have been interwoven in their publications. The 2008 and 2010 *Mediterra* report and the 2010 *Atlas Mediterra* already devoted two articles to different aspects of the Mediterranean Diet from an open and broad perspective. International Agencies such as the WHO and the FAO have recognised important virtues of this transversality. Many other organisations contribute throughout the Mediterranean to consolidate this new dimension.

The Mediterranean, alive and dynamic

The Mediterranean Diet is a legacy which people, like bees or ants, are constantly adding to and removing; habits, know-how, symbols, products, tastes, values and many other elements, both tangible and intangible. Our perception depends upon the speed at which these changes take place, their importance, their visibility, the degree of our sensitivity towards everything which is influenced by it, disturbances of all types that may affect us directly, our capacity of continuous analysis, valuations and the influence of the media upon them, etc. This is true from the landscape to the plate and confirms that this legacy is alive. Jean Bottéro, one of the first translators of the Hammurabi code, used to say that he would not cook, even for the worst of his enemies, any of the recipes from the second millennium Mesopotamia, which he himself deciphered. In the past, changes were perceived over a long period of time and changes were so slow that they went unnoticed by whole generations. Today a graph plotting change may resemble the seismograph on an active zone.

Today the speed and flow of changes is staggering, whether they be negative or positive. We see examples of recovery as well as abandonment, but bad decisions and actions cannot be justified. However, today we can recognise productions, techniques and habits which have hardly changed at all. The striking of olive trees using poles to collect olives is still practised today in hundreds of farms throughout the basin as represented on the Greek black-figure amphora from the VI century B.C. Today it is still possible to see fields ploughed using a yoke of oxen as in the representation found in Egypt and dated between

¹⁵ - Some contributions by Ancel Keys will be discussed in the following paragraphs.

the beginning of the III and the end of the II millennia. Examples are numerous and they illustrate that this legacy is deeply rooted. The words by Edgar Morin, almost a psalm, illustrate this perfectly well: “My genes would tell you that all these consecutive Mediterranean identities have merged symbiotically in me, and, throughout this two thousand year journey, the Mediterranean has become a deep-rooted part of my being. The taste buds in my tongue are Mediterranean, and call for olive oil, they are excited by grilled aubergines and peppers, and yearn for tapas or *mezzés*. My ears adore flamenco! And the cities in the East. In my soul something leads me to be in harmony with its skies, its islands, its shores, its aridities and its fertilities¹⁶.”

Within the context of food and agriculture, to illustrate the ideas set out at the beginning of the previous paragraph, let us read the words of the historian Lucien Febvre¹⁷ who describes an imaginary voyage throughout the Mediterranean that Herodotus (480-420? B.C.) could repeat today: “How amazing! These golden fruits on shrubs of a dark shade of green, orange trees, lemon trees, mandarine trees... , but he did not recall them when he was alive. Brought by the Arabs from the Far East. These curious thorny plants of a unique shape, with flowering stems and strange names, cactus, agave, aloe, Barbary fig – unobserved until now. From America. These pale-leaved trees bearing a Greek name: eucalyptus, never seen before, unequalled. From Australia, cypresses never seen before. From Persia. Even the humblest morsel, how many more surprises await us, whether they be tomatoes from Peru; aubergines from India, peppers from Guiana; maize from Mexico; rice from the Arabs, not to mention the bean, the potato, the peach, fruit of the mountains of China turned Iranian...” Today everybody “is tremendously” Mediterranean.

During polytheistic and monotheistic times the influence of the sacred and the liturgical on diets, production and habits has been substantial. Amongst the celebrations and deity festivities, the *yumuaa*, the *shabbat*, the *dominica*, saints’ feasts and other holy days of obligation, the Mediterranean has spent half its life offering up or praying... or disputing the monopoly of the divine truth. Foods here have been raised to the category of sacred. Bread, wine and oil – the Mediterranean triad – occupy a prominent place: Oils anoint the newborn, the king and the moribund; Athena’s olive tree founds the state-city and represents the most useful offering for humankind; the dove with the olive branch announces the end of the Flood; the olive of the Koran is the “the blessed tree which is neither from the East nor the West and whose oil seems to take light without coming into contact with fire”; the wine and bread at the Last Supper, are the body and blood of Jesus Christ. The list is endless, in all peoples and times of the Mediterranean. Today we have almost forgotten that when we refer to a companion we are referring to a *cum panis*, someone with whom we are sharing bread.

At all times this complex association of elements designated by the Mediterranean Diet has aroused the interest of philosophers, thinkers, writers, artists. They have not only supported this colossal legacy but have preserved it in their works. It is not by chance that cultivation of the land and the soul – the *cultura animi* – share the same root as do *saber* and *sabor* or the term *gusto* applied both to appreciate the taste as well as to feel beauty or art. There is extensive literature, apart from that which has been lost, and

16 - Edgar Morin, “Matrice de cultures, zone de tempêtes. Mère Méditerranée”, *Le Monde diplomatique*, August 1995.

17 - Lucien Febvre, *Annales*, XII, 29.

beyond sacred writings, in all ages, from treaties on agriculture to rituals at the table, including preparations, preservation and organoleptic and health properties of food, health, physical activities and sports. There we can discover the interest in the techniques, the origins, the qualities, the organoleptic nuances. “The old man prepared his guests a bowl of sweet wine that was eleven years old. The housekeeper took the lid off the jar that held it”, we can read in the *Odyssey*. Art is also present. Mesopotamian cylinders, Sumerian tablets, frescos in the Pharaohs’ burial chambers, frescos or mosaics in Greece or Rome, capitals in the Middle Ages... Modern times are no exception. New expressions have added to the classical, and artists such as Cézanne, Van Gogh, Monet, Sorolla, Maillol, Picasso, Miró, Dalí, Barceló¹⁸ and many others have expressed their attraction to the agricultural landscape, the land, the sea, the light, the colours, the pleasure of being in contact with nature, the food, the classical roots of this basin. Photographs by Cartier-Bresson or an important number of films, an area in which the Mediterranean Diet has aroused great interest in the past years, with directors (Abdellatif Kechiche, Semi Kaplanoglu, Sandra Nettelbeck or Tassos Boulmetis among others) who illustrate this current and persistent attraction.

To all the material ingredients in this basin, the sacred trilogies, the landscapes, the millenary history, we have to add fundamental immaterial values: conviviality, sociability, hospitality, togetherness, the feast – a fundamental value without which it is impossible to understand and explain the Mediterranean –, the celebration, the creativity, etc. These are not archaic dreams or useless times, nor are they sterile or economically irrelevant vectors, They are the essential agglutinating elements of the complex Mediterranean universe. They are probably their soul or substantial and determining part of it. Let us invest too, as in the times of Homer partaking of and rejoicing in our food. Then, when we are satiated after supper we will ask ourselves who we are among men. As Edgar Morin proclaims “the Mediterranean is not only an area of tempests, it is still the cradle of some of the main civilisations in the world; still a melting pot. A place where it is still possible to reinvent an economy of conviviality¹⁹”.

Revisiting Ancel Keys

In 1975 the American physiologist Ancel Keys (1904-2004) published, together with his wife Margaret, the book *How to Eat well and Stay well. The Mediterranean Way*, which talks about the diet of common people in Greece, Italy and along the Mediterranean coasts of France and Spain (Keys, 1975). Known as the Seven Countries Study, it was the result of more than 25 years of cross-national studies on the subject of diet-cholesterol-coronary diseases and became a bestseller. This book was already preceded by others: *The Biology of Human Starvation* (1950), *Eat well and Stay well* (1959), *The Benevolent Bean* (1972). A great scientist, in Jean Mayer’s words, who not only made great discoveries but who changed the way of thinking of scientists, doctors and finally the general public, about one of the most important issues of our daily life,

18 - “Painting and cooking, cooking and painting, I have always liked this idea” (*Miquel Barceló. 1983-2009. La solitud organisativa*, Obra Social “la Caixa”, Catherine Lampert [comisaria], Barcelona, 16 July 2010-9 January 2011). Miquel Barceló, versatile Majorcan artist, expresses in this way this intimate relationship between art and cuisine. In this same exhibition you can also read: “Barceló establishes analogies between painting and cooking and describes gastronomy as an activity as refined as painting”.

19 - Edgar Morin, “Matrice de cultures, zone de tempêtes. Mère Méditerranée”, *op. cit.*

the diet (Mayer, 2006). Ancel Keys can be considered, as has been so rightly pointed out by Gregorio Varela (2006), the discoverer²⁰ [not the inventor] from the scientific evidence, of the Mediterranean Diet and its benefits. In fact, as Lluís Serra-Majem (2006) states, if it had not been for someone as extraordinary as Ancel Keys, today perhaps we would not be speaking about the Mediterranean Diet.

In this chapter we are interested in revisiting, albeit briefly, the human and sociological record, very often poorly emphasized, contained in the book *How to Eat well and Stay well. The Mediterranean Way*, far beyond the specific description of the studies and their results or the recipes, since it could be very useful in order to understand the Mediterranean Diet from a cross-sectional and holistic perspective, tangible and intangible. Besides, because the work by Ancel Keys has to be considered as transcendental in learning of the long-standing trajectory of the dynamic Mediterranean lifestyle. This record offers the guarantee of the unique capacity, in Jean Mayer's words, that "the Keys have to be able to go from the profound to the worldly, without deviating from what science and medicine establish as optimum [...] pretending they are transforming virtue into something attractive, even glamorous" (Mayer, 2006).

According to Ancel Keys himself, although the story of this book could have started in the 1940s he decided to start on 4 February 1952. This is before his arrival, together with his wife, in the Mediterranean. This is how he recalls those moments: "Snowflakes were beginning to fall as we left Strasbourg on the fourth of February. All the way to Switzerland we drove in a snow-storm. The next morning Lausanne and the road up the valley was so deep in now that it was touch and go getting to Brig to load the car and ourselves on the train that goes through the twelve-mile tunnel to Italy. On the Italian side the air was mild, flowers were gay, birds were singing, and we basked at an outdoor table drinking our first espresso coffee at Domodossola. We felt warm all over, not only from the strong sun but also from a sense of the warmth of the people, a feeling we were later to experience in all of what we now call 'our' Mediterranean, that great stretch of land from the Strait of Gibraltar to where Europe ends at the cradle of European culture".

For them, a film narrative and vision of contrast, as unequivocal as it is between two entrances of a tunnel opening onto two different universes, close and distant at the same time but not without multiple and important historical exchanges. A landscape, a place, where the intangible is at least as prominent as the tangible, the worldly as much as the scientific. After twenty-five years that wonderful piece of land was "theirs" too and they already formed part of it. They will often insist on "their" Mediterranean. Their Mediterranean is however limited. As he himself stated, "[For us the Mediterranean world] centers on only four countries [...] to restrict it to the areas of those countries bordering on the sea". His conceptual idea is defined when he says: "Mountains behind and the sea in front, all bathed in shimmering sunshine – that is the Mediterranean to us". Almost an exact replica of the Phoenician village in the eastern Mediterranean.

20 - Annie Hubert, in her document "Autour d'un concept: l'alimentation méditerranéenne" (Hubert, 1999) tells us that "The idea of the Mediterranean Diet was first mentioned in the works of an English doctor who accompanied bathers to Australia. He recommended this type of diet as suitable for the Australian weather".

“Our” (their) Mediterranean has diverse interpretations according to Ancel Keys. He does not hesitate to call it “universe”, i.e. vision of a whole made up of all the elements, although later he argues some segregation. For him all these lands divided by borders, that constitute the Mediterranean, “are united” by 3,000 years of trade, migration, wars and sea. He considers the diet as one of the many cultural aspects of the basin and points out that Greece, Italy, the South of France and Spain’s Mediterranean coast contrast tremendously with the countries of North Africa. Thus, according to him, in order to assure culinary coherence he does not take this cuisine into account, with the exception of some specialties such as couscous, nor does he take into account Turkey and Lebanon because “the cookery of those countries does not quite fit”. The Israeli cuisine is likewise excluded since the author considers that it is “even farther from what we think of as Mediterranean”. The four countries of our focus in the Mediterranean are by no means uniform in culture. “[...] These differences are only variations in a common cultural pattern, a pattern distinct from Central Europe, the Scandinavian Countries, Britain and the United States.”

And as for the Mediterranean Diet, he believes that “it would be wrong to insist too much about uniformity”. We fully share this idea. He thinks it is a common pattern with variations and recognises the existence of at least similar features although there are also differences between and within countries. Keys states that: “The Main meals in our four Mediterranean countries share many similarities (the similarities are too many to list) but each of the countries has interesting predilections”. He also observes variations over time, that have “not necessarily [been] for the better”.

Ancel Keys calls the Mediterranean foods “the shared delights”. Indeed this is a significant expression which summarises two key values: on the one hand, delights, i.e. pleasures (a term he frequently uses when referring to the Mediterranean and its Diet), especially in this specific case the pleasures of the senses but also of the spirit; on the other, shared, i.e. participated, in no few occasions celebrated and commemorated (let us remember Plutarch: “We do not sit at the table only to eat, but to eat together”). Celebration is a fundamental component of the Mediterranean “lifestyle”. The great valuation Ancel Keys makes of the Mediterranean Diet, prompts him to state, after a quarter of a century of research, that “The Mediterranean kitchen offers such a wealth of gustatory delights, so many happy surprises at the dinner table, so much pure eating pleasure in dishes for the most part both economical and easy to prepare, that it would warrant enthusiastic praise even if there were no evidence that it is particularly healthful”. And he completes this forceful statement with another one, no less unequivocal: “The Mediterranean pattern of cooking and eating is nothing like a ‘diet’ in the current American sense”.

Probably because of this last reason and of the confusion in the use of this term, the title of his book refers to the “Mediterranean Way” and not to the “Mediterranean Diet”, although as described by Rafael Carmena, one of Keys’ collaborators, the term “Mediterranean Diet” was coined by Ancel Keys far away from the Mediterranean, in his laboratory at the University of Minnesota in the 1960s (Carmena, 2006). Regarding the use of this term, Keys states: “We deny this but hesitate to talk much about it as a diet for health for fear of frightening away people who are more interested in the pleasure of eating”. He insists: “A ‘diet’ is commonly thought of as an unnatural pattern of eating

[...] and a 'dieter' is a poor soul who forgoes the pleasure of allowing appetite, taste preference, and opportunity to dictate what is eaten."

A rigorous and excellent scientist, the qualitative variables of his Mediterranean did not escape Ancel Keys. His book is a homage to them, yet does not abandon his scientific objective: "Still, while our love affair with the cookery from the Greek islands to the Strait of Gibraltar is more reason than enough for this book, the urgency of our message comes from considerations of health".

Ancel Keys also identifies the three sacred foods of the Mediterranean as the three characteristics common to the Mediterranean zone and its diet: the oil, of which "an enthusiastic use" is made, understandable in the case of Crete – "Cooking in Crete is really drenched in olive oil" – originated in customs inherited from the Minoan civilisation; "the great place of bread" in this area is highlighted and which is described, in the liturgy of sharing it, as "supreme pleasure", claiming that: "It is no wonder that to offer and 'break' bread together is an age-old symbol of friendship"; the wine, which is defined as "A third common feature of the diet in all of our Mediterranean countries", and it is pointed out that in these countries, however, "drunkenness is very uncommon".

Ancel Keys left fundamental scientific evidence about the Mediterranean Diet, but beyond the purely scientific approach, he was clever and sensitive enough to capture, value and integrate those things that weights, measurements and graphs are still unable to address. He started the book with the conclusions from his works that there is, indeed, "a Mediterranean Way to Eat Well and Stay Well". Feeling well has, in Keys' language, a much broader range than that of being medically well.

Probably no other passage of the book like the one on the "tapas" from the Mediterranean Levante coast, described by Ancel Keys as "an almost infinite assortment of snacks and tidbits, mostly cold but some served hot", illustrates so well the ideas we have just discussed. Ancel Keys writes: "Besides the variety of zestful foods, the attraction of the *tapa* shops is not in the décor – there is none – but in the friendly informality of the people who stand two or three deep at the bars [...] Here people from all classes spend a relaxed hour or two, eating and drinking, greeting friends and exchanging comments. [...] one may combine the Mediterranean custom of the evening stroll with such inviting temptations to snack. [...] Eating at *tapa* bars is a treat, not a daily habit of the population, and the total of what is eaten, made up of a number of little samples, is not large, so the *tapa* custom does not have much effect on the total dietary pattern. It is unnecessary to ask what *tapas* may do to dietary health, it is enough to enjoy them."

Throughout the book Ancel Keys unfolds an image taken very slowly over twenty-five years of in-depth immersion which provides the Keys with precise knowledge of "their" Mediterranean as confirmed by the accuracy of its recipes and observations. In his account scientific evidence and knowledge are interwoven with human and social records. This fine-grained image explains how that moment helps to better understand the present and perhaps even protect the future of the Mediterranean Diet, a dynamic cultural complex in a moving space.

Voices of the Mediterranean today

It is clear that in the past we had access in the Mediterranean to more reliable global data on transport, production, water consumption, trade, public health issues... than to perceptions and value systems of the ordinary people in the Mediterranean. More numerous than words; more statements than opinions; more institutional messages than personal emotions; more stereotypes than realities; more inertias than innovations.

The Anna Lindh Report²¹, submitted in September 2010 signifies a breath of fresh air in social research in the Mediterranean and in particular it opens up a line of great interest for reliable knowledge about intercultural trends in the basin. It is the voice of a sample of 13,000 people who represent nine Mediterranean and four European countries. It is a first step, certainly limited, but a giant one at the same time because it adds a wealth of knowledge that had been previously nonexistent, it leaves a reference, it reveals perceptions and relationships of great interest and it makes the voice of the Mediterranean audible. We share the opinion of André Azoulay, President of the Anna Lindh Foundation, that this Report will be a turning point.

The Mediterranean Diet, explicitly, has an outstanding presence in this study. Amongst the items considered we can name the “Mediterranean Diet and lifestyle”, but also “hospitality”, “shared history and cultural legacy”, “creativity”, besides “religious beliefs”, “respect for other cultures”, “family solidarity” among others.

We should like to highlight three aspects we consider relevant for the subject dealt with in this article. First, the fact that despite the increased movements of people, due both to migration and to travel, there is still an important number of clichés regarding the knowledge of each other; however, eighty percent of the respondents express their sincere desire to discover the “other” as well as their conviction that there is a proximity that feeds on the roots of the common patrimony and history, recognising the Mediterranean and a common legacy too. Second, for most inhabitants in the region, the Mediterranean exists in as much as socio-cultural category: four out of five respondents associate the basin with values such as hospitality, diet and lifestyle, shared patrimony and history. Third, the moderate recognition of the collective advantages of a greater *rapprochement* and strengthening of ties and cooperation between all the peoples in the basin.

The Mediterranean Diet can draw many lessons from this report. We have to be on the alert and endow ourselves with strategies and suitable and proportionate capacity of response, we have to be prudent both when celebrating progress and amplifying emergencies. We should distinguish scales and times very clearly – microscope and telescope, second and decade – in order not to live in a permanent state of alarm. The Mediterranean Diet also conveys tranquility and serenity, perseverance and tenacity. Its great complexity and transversality are its biggest strengths and where its great capacity lies. Its biological, environmental and cultural diversity is its main asset. All of these can only live on the collective conviction and ambition of the Mediterranean peoples. More than ever, today we have to be actors and not passive observers. This means being creative, educational, working for the future. We may imagine, ponder,

21 - Anna Lindh Foundation (<http://www.euromedalex.org/>).

write or sing, even represent, the Mediterranean Diet but only with continuing practice will it live and persist. Full confidence, but above all effort. An effort that is greatly recompensed, since in our Mediterranean Diet such effort always brings with it a great many pleasures.

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HISTORY OF MEDITERRANEAN FOOD

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Is the Mediterranean Diet really anything more than a figment of our imagination? Yet, despite geographical differences and the vicissitudes of history, all the countries of the Mediterranean basin share ways of being and lifestyles. Mediterranean food is one of those cultural elements that have felicitously helped to preserve the special nature of the Mediterranean.

There are a variety of products, a culinary system and dining rituals which could be described as Mediterranean. Rules for the preparation and consumption of food are common to the lands that border the Mediterranean. They offer both stability, continuity and reproduction of a specific pattern of eating which resists conquest, invasion, colonisation, social change, industrialisation and urbanisation. Consequently, wherever you go, in southern Europe or the lands bordering the southern Mediterranean, you will find a cuisine and gastronomic ritual which is always familiar.

A look at the past

To reconstruct the history of Mediterranean food, you first need to know what the men and women of these countries grew to feed themselves. You also need to list the animals which they raised for their meat, milk or honey. You need to know the fish they caught and the game they hunted. You also need to see whether they were satisfied with what they produced or whether they relied on foreign products, whether foods were acclimatised or whether the introduction of new products upset the culinary landscape of certain countries or areas in the region.

Finally, you have to take account of political events, natural disasters, everyday patterns of life which determine the degree of sophistication of food preparation and which vary from one people to another due to technological, economic and social differences.

Several parameters also come into play in understanding food and eating: the history and contacts with other peoples and other cultures; the geographical situation, local traditions, rites and myths, agricultural production, religion, changing lifestyles; economic constraints and the impact of rules of consumption and foreign behaviour; the effects of globalisation of tastes and patterns of consumption.

All these aspects act in concert to determine the dietary customs of a society and form a national culinary identity, or, conversely, to destabilise it in a given sphere. That said, food is first and foremost a constituent theme of human identity rather than of a regional or national identity. Meat already distinguished the food of men from that of the gods and, in the eyes of the ancients, bread, which was complex to make, distinguished civilised man from the barbarian, peoples which practised farming from those who did not eat bread or drink wine. Lastly, man's food behaviour is also distinguished by conviviality and the social function of the meal.

In the Mediterranean, the meal is not a simple act of nourishment, but a special place for interaction, raised to the level of religion. One of the essential features of the Mediterranean dietary model, which has stood up to the constraints of modern everyday life, is the time taken over the meal and the social practices of conviviality. Even today, in all Mediterranean countries, people spend more time eating than anywhere else. Although meal times nowadays are adapted to modern life, as is the succession of dishes, people are still attached to "eating well" and "drinking well". Once upon a time, in towns, the dietary regime and working hours forced artisans and shopkeepers to take additional meals in the countless cheap restaurants or bistros which festooned the streets of the towns and their suburbs. From Egypt to Italy, street cuisine is still varied and still acts as a social marker: fried, grilled and other cooked dishes which you eat on the spot or take home for a modest sum. The social function of this cuisine is essential. It encourages the development of a male-dominated popular sociability which could not occur in the domestic environment.

Furthermore, the food ritual, which marks the high points of Mediterranean life, whatever the religion, still gives rise to many rites and celebrations in which food takes pride of place. A full calendar of abstinence rites, fasting and penitence (Lent, Shabbat and Ramadan) gives rise to a ban on eating certain foods rather than others. Likewise, each stage of life, from birth to death, has its own type of food and cooking. Dishes, abounding in symbols, based on fish and poultry, are not only rooted in a very ancient past, but reflect a community of beliefs and practices which extend beyond religions and languages (Aubaile-Sallenave, 1997). Cakes or confectionery are given at the birth of a child or the circumcision feast; animal sacrifices accompany religious festivals or consecrate the bonds of marriage. Eggs, symbols of eternity, are associated with funerals. Among Muslims and Jews, fish has the same place in the nuptial feast (Dalader, 1996). Finally, foods based on poultry and egg broth, gruel, and dried fruits, specific to a life event, show similarities between the diverse societies of the Mediterranean, both Christian and Muslim.

How can one define the Mediterranean which is "a thousand things in one" (Braudel, 1999)? Studying the history of food in the Mediterranean means dealing with a complex phenomenon, because belonging to a common geographical area is not sufficient to make the food practices and customs of the whole Mediterranean world homogeneous. That is the reason why there cannot be a single unique Mediterranean Diet, but *many* Mediterranean Diets, in the same way that there cannot be one history, but *many* histories seen through the re-working of relations between peoples, forged through conquest, migrations and trade at different times. These constant interactions have introduced and disseminated both the products consumed and the way in which they are accommodated.

Could a coherent model of Mediterranean food common to all the surrounding countries, by which to recognise any Mediterranean-dweller, be derived from such a variety of cultures and diversity of traditions and religious beliefs? To be conceivable, such a project would, of necessity, focus primarily on a food culture of a Mediterranean society or region whose general geographical, historical and cultural characteristics could be reflected in a model in which all the individual identities were recognisable. This is true of the food model of the countries along the southern shore of the Mediterranean. These countries have quite a rich food tradition established in a geographical setting which encompasses the Mediterranean area, rooted in religious traditions (Jews, Christians and Muslims) common to the entire Mediterranean basin, shaped by all its contacts (France, Italy, Greece, Spain, the Ottoman Empire), transfers, borrowings, accommodations and adaptations, culminating in a true blending of cultures.

Let us go shopping with the Mediterranean housewife when she buys her food in the market. By the things she buys, she straightaway traces the history of these products, their origin, their journey, their social and religious status. Her shopping basket is arranged like a series of stops in the annals of a globalisation that has been going on for centuries, mingling products enshrined in time immemorial and those which were simply adopted, those which are native and those which were surreptitiously introduced to our plates, indigenous products and exotic products. First it was wheat. A staple cereal in the botanical prehistory of the Mediterranean and an essential component of the vegetal repertoire and the cooking methods of its inhabitants. A powerful seed of life, it is present at all the festive rites and all the stages of life by the blessing it conveys. The Greeks sought to define themselves above all as “*bread-eating*” farmers as opposed to the “*meat-eating*” barbarian, since bread is a processed commodity, a complex product which denotes a high degree of civilisation (Kaplan, 2002). Bread has always been (and remains) a subject of special attention of States given its importance in the economic and social justice of the Mediterranean countries. This wheat can be eaten crushed, as wheat meal, flour, boiled, fried, grilled, in pastry, and so on.

Our shopper will then move on to vegetables, leguminous plants, condiments and other seasonings. Garlic, onion, leeks, cardoons (*cynara cardunculus L.*), ancestor of the artichoke, asparagus, aubergines, carrots, celery, salads (cultivated or wild), cabbage, kohlrabi, cauliflower, marrows, courgettes, cucumbers, pumpkins, spinach, chard, lettuce, cos, turnips, parsley, green and red peppers, purslane, radishes, salsifies, tomatoes. On the list of leguminous plants: peas, dried beans, lentils, chickpeas. The Mediterranean is extremely attached to these products. In places where they are not eaten, it is because they cannot grow there. To provide food which is reputed to be highly seasoned and spicy, you need salt, pepper, caraway, coriander, thyme, rosemary, cumin, fennel, aniseed, nigella, dill, myrtle, Arab senna, rue, juniper, marine wormwood, tree heath, nutmeg, Smyrna galls, cinnamon, cubeb. Salted products or products conserved in oil: olives, capers, tuna, anchovies, mild and hot peppers and other salted vegetables.

The Phoenician and Carthaginian contribution (9th to 2nd Century B.C.)

Mediterranean food is rooted in the vast cultural world of the Near East where huge quantities of cereals were consumed (wheat, barley, spelt), eaten in the form of porridge, bread, and various types of biscuit. This food was supplemented by leguminous vegetables: peas, lentils, chickpeas, broad beans; oil produced in Syria and Palestine since the third millennium and numerous fruits such as apples, pomegranates, quinces, almonds, pistachio nuts, dates and figs. These fruits, fresh or dried, extremely sweet were substitutes for more expensive substances such as honey in the diet of the poor. Wine was also drunk with the introduction of vine cultivation. Meat came from raising cattle, sheep, poultry and from hunting. Homer tells how the Phoenicians (2nd millennium to 8th century BC) traded with Libya which he describes as a land rich in cattle and thus meat, milk and cheese. Salt extraction complemented fishing. Forests were important, yielding important supplies of game, deer, antelopes, gazelles, wild boar. Products picked or gathered, along with meat from hunting, had for long been man's only food, including grasses, roots, tubers, fruits and seeds, which continued to be eaten for many centuries (Giammellaro, 1996).

The civilisation of Carthage was characterised by an agricultural development entirely dependent on Mediterranean trade. Classical sources provide a whole series of reports of the Carthaginians' diet, especially at the end of the Punic era, from which a history of the food production and customs of the first phase of Phoenician colonisation of the West can be constructed. Undoubtedly, these colonies preserved the food traditions of the motherland. However, these Eastern traditions then adapted to local customs, marked by the geography of the Western regions. Cereals were the chief food of the Phoenician colonies in the West. The Carthaginians were labelled by Plautus as "great eaters of *puls punica*", a porridge made of several cereals which then served as the basis of the daily meal, and sometimes the only dish, in which cheese, honey and eggs were mixed. Cereals were also the basic ingredient of a biscuit called "*punicum*".

The presence in many houses of "*tabounas*", earthenware bread ovens still used today in Morocco and Tunisia, show that the Phoenician populations in the West were great eaters of bread, both leavened and unleavened. Vegetables were grown in the luxuriant gardens and orchards of the large estates. Olive growing was widespread, as was that of fruit trees: pears, apples, figs, walnuts, hazelnuts, almonds, pistachio nuts, chestnuts. The date palm, often depicted on votive stele and coins, may have had a religious function, while the Carthaginian pomegranate was so famous at the time that the Romans called it "*mela punica*". Unlike cereals, for which yields remained modest, the best lands were devoted to olive and vine growing. Grapes were eaten fresh or dried. Livestock raising (sheep, goats and cows) provide milk and dairy products, but the meat of these animals was only eaten on certain occasions. North-African votive stele sometimes depicted sheep with a short fat tail, typical of the species still found today in Tunisia. Fish products were also eaten by the Carthaginians, who ate fish, shellfish and crustaceans (mullet, bass, grouper, sea bream, red mullet, mackerel, sole, tuna, swordfish, prawns, lobsters).

The Roman period (7th to 3rd centuries B.C.)

The Romans intensified the cultivation of olives and vines in all the conquered lands. They also spread some vegetables (green vegetables) and leguminous varieties (peas, dried beans, lentils, chick peas). They allowed the agriculture of the regions of the empire to develop and modernise, transforming some regions such as Roman Africa into the breadbasket of the Italian peninsula. This leap forward was encouraged by the irrigation systems which the Romans introduced, which allowed cereal crops to be extended to southern Tunisia. Through their colonising behaviour, the Romans thus imposed new productive bases and profoundly changed the food patterns of the territories under their administration. There had been little or no cattle farming. Used solely as draught animals, neither their milk nor their meat was consumed. On the other hand, there were large numbers of herds of goats, and their milk and cheese were highly prized at the time. Partridges, pigeons and pheasants were domesticated in the farmyard.

On the eve of the arrival of the Muslim conquerors, North Africa still merited the title of “breadbasket”. In 608, Heraclius was so well aware of this that he had no hesitation in using it against Constantinople by suspending supplies of wheat, and perhaps also oil, to the capital. Sheep farming developed primarily in Egypt and Libya.

The Arab and Islamic influence

The Arab influence was to have a considerable impact on the history of food in the Mediterranean. Unlike the Romans, who could be said to have fixed agricultural production, the Arabs introduced new products and new farming methods. This innovation underlies the spread of the agronomic sciences in the region. The legacy left by the Arabs far exceeds that of the Orient and the New World.

From ancient *annona* to modern bread consumption

Antiquity provides fairly specific models of state institutions responsible for the supply of cities, notably the ancient *annona*, dating from the time of Augustus. It is well known that cereal production in antiquity was limited by the rudimentary technical methods: lack of a horse collar, use of the plough and three-year rotation. For a city with as large a population as imperial Rome, the requirements to satisfy the urban plebs were huge and the capital of the Empire could not rely on Italian production alone. Rome had to rely on imports from Egypt and North Africa under its domination and promoted more than ever to the rank of Rome's principal breadbasket.

Regular replenishment in sufficient quantity of cereal products, which were the staple food at that time, was crucial to the political authorities which sought to shelter Rome from food crises by creating administrative systems such as the *annona* authority, and trade infrastructure such as ports and warehouses (Garnsey, 1996; Virlouvet, 1995 and 2003; Christol, 1994). The demand for good quality bread influenced the choice of cereals, with priority being given to wheat. African prices for essential commodities were half that of Italian prices. This shows Africa's place in feeding Rome, whether through the free market or supplies requiring state procurement in the region.

The Mediterranean was the cradle of the monotheistic religions, so its peoples attach considerable religious and social importance to bread. Unlike luxury products, however,

wheat remains for the southern Mediterranean countries a staple food which cannot in practice be left to the law of the market. Bread therefore continues to receive special treatment, and is sold at cost or even subsidised by the State.

The arrival of the Arabs was accompanied by the spread of citrus fruits, rice, sugar and pastas throughout the Mediterranean basin. Spinach (unknown to the Greeks and Romans, and thereafter promoted to the rank of “*prince of herbs*”) also made its appearance, along with chard (reputedly one of the plants most appreciated by the prophet of Islam), mallow (especially valued in Egyptian food and the basis of a festive stew among Tunisians for the New Year meal, its green colour symbolising a promise of prosperity). The aubergine, of Indian origin, was introduced by Arab merchants from Asia. Okra (*hibiscus esculentus L.*), of Ethiopian origin, is called “*gnawiyya*” in the Maghreb and “*bemya*” in the Near East. Cauliflower seems to have followed the same path as certain vegetables of the cucurbitaceous family (cucumber, marrow). The diet of Arabs settling in the Mediterranean following the Muslim conquest broke with the prophet’s daily diet model, which was chiefly pastoral, unlike the predominantly agricultural Mediterranean model. The only new and important factor resides essentially in the food prohibitions involved in Islamic principles.

Cereals, especially durum wheat, dominated production. Soft wheat, introduced by the Romans, was eliminated by the conquerors. Barley replaced wheat in drier areas with poorer soils and was used to feed the population because it was cheaper than wheat. Sorghum and millet were also grown. Olives, the cultivation of which had declined, were again cultivated on the coastal plains of Tunisia. After the period during which it flourished during the time of the Romans and Byzantines, the vine declined significantly. The Arabs, who only tolerated dessert grapes and unfermented juice, reduced the number of vineyards. The date palm, originating from the Persian Gulf and cultivated since the dawn of antiquity, flourished from North Africa to the Indus. The food of choice for travellers and caravans, dates were appreciated everywhere, especially among nomads, and went well with dairy produce (fresh milk, butter or cheese). New species of fruit trees were imported, such as oranges and lemons. Cross-breeding would give rise to new varieties. Figs, walnuts, pistachio nuts and carobs (eaten ground as flour) were reported at the beginning of the 16th century. There were also jujubes, limes, citrons, peaches, apricots, plums, cherries, azeroles, medlars, apples, pears, almonds, pomegranates, white and black currants. Towns were bordered by kitchen gardens in which all kinds of vegetables were grown: broad beans, green beans, lentils, chick peas, aubergines, turnips, cabbages, cauliflowers, chard, purslane, lettuce, endives, asparagus, carrots, garlic, onions, cucumbers, melons and water melons. Mention should also be made of the cultivation of aromatic, medicinal and colouring plants such as cumin, caraway and aniseed, henna, saffron, oregano, myrtle, jasmine, roses, narcissi, water lilies, goldenrod, wallflowers, marjoram, violets, lilies, thyme, opium poppy and Indian hemp. Spices came from the Far East: pepper, cloves, ginger, nutmeg, cassia, manna, rhubarb, saffron, aloes, gum.

With few exceptions, the diet was very largely vegetarian. The Arab world was also the world of pastas, a convenient way of conserving cereals for long periods and adding

variety to dishes. Omnipresent in the Arab diet, based on semolina or flour, they offer a great variety of pastas in the form of strips, ranging from *rashta*, similar to tagliatelle, fine threads like vermicelli, and couscous, a true Maghreb dish, considered as exotic in the East where it was called *Maghrebica*, and the presence of which is reported in Europe from 1630 under the name of *Courcoussou* (Flandrin, 1989).

Some Mediterranean food historians have tried to show that the Maghreb diet, in essence, is the heir of Greece and Rome, or rather that it owes little or nothing to the Arabs (Gobert, 2002). In other words, the Arab conquest did not much change the North African diet, which remained a Mediterranean Diet based essentially on cereals, eaten in the form of bread or porridge, and a profusion of vegetables which, for the Romans, represented the most civilised of all foods, and olive oil, and ancillary to that, meat and fish.

It was on the basis of these elements that it was sought to reconstitute the “western” origins of the Maghreb cuisine by making the culinary treatise of the rhetor Athenaeus and the cook book of Apicius its principal works of reference. The first is a gastronomic work aimed at an elite few by a certain Apicius, a legendary chef, man of wealth, inventor of dishes, who could spend astronomical sums on his culinary fantasies. His reputation was such that, in Tertullian’s time, they said “an Apicius” to designate a “cook”. The second reference is to the work of Athenaeus, “*The fifteen books of deipnosophistae*”, written about 200 A.D. by this self-confessed despiser of luxury and considered as the oldest culinary work gleaned from observations on the customs of the ancients in hundreds of different authors. The work, most of which relates to food and its preparation, is full of quotations from the Greek poet Arcestrates. The cuisine of Athenaeus, like that of Apicius, is above all one which abuses exotic species, trade in which had expanded rapidly following the conquests of Alexander.

The Andalusians

The influx of Moriscos from Spain, estimated to be some 120,000 people from 1608, coming from various social classes, enriched the economic, cultural and spiritual life of the Maghreb. This process disseminated new kinds of lifestyles, especially in urban areas. Market gardeners, manufacturers and small-scale industrialists introduced their numerous products and transmitted their manufacturing methods. Farmers became acclimatised in the plains of northern Tunisia. The propagation of new plants, irrigation methods, working the land, forms of farming, good seed selection, artisanal or industrial methods to transform agrarian products, the extension of quite new lifestyles, all amounted to an agrarian and food revolution.

This revolution can be explained, in the first place, by the importation from Spain of plants originating in the New World which were still unknown in the eastern Mediterranean: maize, tomatoes, potatoes, pepper, Barbary figs from Mexico, various kinds of beans (Latin beans, mixed beans), certain types of marrow, the West Indies myrtle, paprika, new types of olives, new varieties of vegetables. “Andalusian chard” was now distinguished from “native chard”. Also noteworthy is the artichoke, which first appeared in North Africa, derived from a wild thistle. It then travelled to Sicily, then Naples and Florence in 1446. The Arabic word “*al-kharchaf*” meaning thistle, became “*alcarchofa*” in Spanish, then “*articcio*” in Lombard, “*artichaut*” in French and “*artichoke*” in English.

By calling it “*ardichoki*”, the Arabs of the Middle East related the artichoke to its spiny origin. The “Murcian” apricot variety, “Valencian almonds” and “Malaga almonds” were also introduced into the region. The vine was reintroduced under the Hafsîd dynasty with the first Andalusian immigrants and became widespread from the 17th century (Hassen, 1999). Alongside traditional breeding of bulls, oxen and sheep, the Andalusians also kept bees.

In some cases, certain products were re-imported. One such was rice, which had not been grown at all since the 14th century and which was slowly spreading again across the region, via Spain and southern Italy in particular. It is worth emphasizing that its appearance in Spain goes back to the Visigoth period where its cultivation was exceptional and rather late. In Italy, there are records of rice-growing from the 13th century. The introduction to the Mediterranean of certain American fruits and vegetables from the 16th century and to North Africa by Morisco traders and growers caused considerable upheavals: tomatoes, peppers, marrows and courgettes, beans, maize (via Turkey), potatoes (via Portugal) introduced into the Maghreb from the 17th century (Abdoul-Wahab, 1970).

In domestic preparations and dishes, primarily women’s work, many imports of Andalusian specialities can be seen: cakes, dairy products, cheese and clarified butter, pastas, fritters, fruit juices and new methods of conservation and storage of finished or partly finished dishes. These dishes can still be found in the food traditions of certain Tunisian cities, such as Testour, where Andalusian refugees settled in the 17th century (Skhiri, 1969). Although reflecting eating habits belonging to privileged social circles, which cannot be transposed to society as a whole (Tujîbî, 1981 et 1984; Bolens, 1990) Andalusian cuisine has nevertheless retained the reputation of a type of refined society in the image of an idyllic Islamic West which shone as brightly in the arts and literature as in culinary skills (Marin, 1997).

The Arabs tend to attribute their Ottoman heritage to the Turks, and only the Turks. Yet rare indeed are Iraqis who know that their “*tibsi*” (a dish cooked in the oven) and Tunisians their “*tapsi*” (an earthenware utensil) derive from Greek “*tapsi*” (a tin oven dish). That the “*kharâbdj*” of Aleppo derive from Byzantine “*kourabiedes*” (crescent-shaped shortbreads coated with icing sugar). As for the Moroccans, who remained outside Ottoman influence, they are unaware that the word given to their famous and emblematic “*bastella*” comes from the Greek, “*pistella*”, which for the Byzantines meant a honey and sesame biscuit. In Turkey, as in the whole of Anatolia, the place of cereals was predominant, as were fruit and vegetables, followed by milk and dairy products (Saunier-Nebioglu, 2000). Bread remains the divine food par excellence, with cereals the basic ingredient of many foods prepared in readiness for winter. Notably the famous “*bulgur*”, or ground wheat, eaten in the form of pilaf, as well as edible pastas, concentrates of fruit and tomatoes, and in brine.

Thus, for thousands of years, the Mediterranean basin has been a crossroads of civilisations which have contributed to the so-called Mediterranean Diet. The current Mediterranean dietary model is thus the fruit of borrowings, transmission, dissemination and appropriation in space and over time, of varied food practices and products from Asia, India, the Middle East and America, as well as the development of an international market for agricultural products and the growing mobility of populations.

Byzantine Foods

Unlike the Romans and earlier Greeks, Byzantine cookbooks seem to be rare indeed. In fact, only very tempting references to Byzantine cooking are found tucked into diplomatic reports and biographies of the Imperial family. We know that the empress Lupincina of the Danube Valley was a cook and that Theodora, wife of Justinian, imported cooks from Persia, India, Syria and the Greek mainland to serve at her court. In the 10th century Liutprand of Cremona, an ambassador to the Imperial court, made disparaging remarks about refined wine and dishes cooked in oil, although he enjoyed some of the sauces and was impressed by the food at the Imperial table. He especially liked the roast kid stuffed with garlic, leeks and onions and dressed with *garon* sauce (probably a variety of the Roman *garum*, that notorious fermented fish sauce). What did their food taste like?

We have a number of earlier Greek cookbooks, such as *Gastronomia* by Archestratus (5th century B.C.), and we know what Greek cooking is like now. To tie them together we have the work of such scholars as Nicholas Tselementes, who traced back to earlier times such dishes as *keftedes* (meatballs made with grain), *dolmades* (grain and/or meat stuffed into vegetables or plant leaves and cooked), *moussaka* (a layered dish of meat, cheese and pasta or grain), *yuvarelakia* (meat and/or grain dumplings cooked in broth), and *katavia*, the Greek version of *bouillabaisse*. He also traced back to the ancient Greeks the making of white sauce – using flour and fat to thicken a broth or milk mixture. Although some of these dishes are now known to the world by Turkish or European name (even the Greeks call white sauce «*béchamel*»), their origins are Greek.

We know they ate three meals a day—breakfast, midday and supper. They had many fast days. While the lower classes made do with what they could get, the upper classes were served three courses at their midday and supper meals consisting of *hors d'oeuvres*, a main course of fish or meat and a sweet course. They ate all kinds of meats including pork and numerous types of fowl. They ate large amounts of fish and other seafood. There were many types of soups and stews and salads were popular. They liked a variety of cheeses, and fruits were eaten both fresh or cooked. Fruits included apples, melons, dates, figs, grapes and pomegranates. Almonds, walnuts and pistachios were used in many dishes as well as being eaten by themselves. The recipes given here were created by taking modern Greek ones, removing or replacing non-period ingredients and attempting to reconstruct cooking methods. They are the types of dishes that would have been served by the common people or middle classes rather than to the Imperial household.

Panagiotis Kefalas (CIHEAM, MAI Chania).

Culinary practices

Mediterranean cuisine is defined by the presence of fundamental elements which are said to play a more important role than others, reflecting a community of beliefs and practices which transcend religions, languages and even societies. The olive tree, the emblematic tree on more than one account, traces the bounds of a frontier of landscapes and lives on either side of which the Mediterranean begins or ends. Above Montelimar, nicknamed “Gates of Provence”, is the limit of the olive. The same can be said of cereals, another constituent component of this Mediterranean identity, which ancient authors considered the mark of civilised man, the “eater of bread”. Lastly, wine completes this ancient model based on the trinity of wheat, the olive and the vine. Associated with

Turkish cuisine or Ottoman cuisine?

Is there a great Turkish cuisine as is so often claimed? Probably not. On the other hand, there is certainly a great Ottoman cuisine. And the gap between the two is not just a question of chronology. The former suggests primarily an ethnic identity. It is necessarily limited, repetitive, skimpy. The latter, however, evokes a great empire. It is the product of diverse peoples: Turks, Greeks, Arabs, Armenians, Kurds, not forgetting the whole of Balkan Macedonia or the Caucasus, or the Sephardic Jews who, driven out of Spain by the Catholic Kings, found refuge in the land of Islam. A culinary interbreeding which needs no academic presentation (...) Thus the Istanbul spice market, in memory of times past, is called "Egyptian", the cheese of the Ksar sheep is Andalusian, brought back by the Sephardis, and in Turkey they eat Circassian Chicken, Persian rice, Albanian liver and many Greek, Armenian or Arab dishes whose name does not indicate their nationality. Likewise, one can see a little of what the others owe to the Turks, which is considerable: yoghurt, *dolma* (stuffed vegetables), *bürek* (flaky pastries), *kebabs*...

Source : *Mardam-Bey* (1998).

these "basic" products of Mediterranean folk cuisine which constantly uses cereals, olive oil and wine, symbols of a simple, frugal and sedentary life, are dried and fresh vegetables, fruit, sugar and honey, milk and cheese, meat and fish.

This nutritional base does not merely consist of improving the taste of the food eaten. The chief role of the transformation of foods is to satisfy the nutritional needs of men by means of specific cooking methods and seasonings. Open to the influences of foreign civilisations, the Mediterranean cuisine has inevitably been enriched by new products and ingredients and by seasoning and cooking methods borrowed or inherited from foreign peoples.

What remains of all that in today's Maghreb? How are these foods eaten nowadays? In what way do modern cooking methods reflect the survival of a recipe from the past? Eating "*borghel*" in Tunisia, Lebanon or Turkey, people thought that they were eating an Arab dish, but in fact they were eating a dish from classical antiquity called "*alica*". Likewise, the Bedouins of the Maghreb had no idea that making their sauce with that small fish sold dried known as "*ouzeuf*", they were merely reproducing centuries later the recipe for the "*garum*" of the ancients. By milling barley, first toasted then moistened, the Greeks prepared *alphiton* (ἀλφίτων) which is none other than our barley "*dchicha*" or "*frik*" or "*melmouth*". The sweet and sour sauce of the Sfaxian "*chermoula*" made from a blend of pepper spices, cumin, vinegar, honey and a sugary fruit is in fact a faithful conservation of the recipe of Apicius "*jus in pisce elixo*", sauce for boiled fish (Gobert, 1942). Lastly, the Latin "*puls*" is reflected in "*a'cida*" and "*bazin*", the former made from flour and the other from wheat or barley grain. This endless list of Greco-Roman survivals should not fail to mention that the word "*tajin*" (a handmade earthenware pot and fried dish) comes from the Greek word "*tagynon*" (τήγανον) and that the word for mauve in Greek is "*malakhi*" (μολόχα), the famous Tunisian "*meloukhiyya*"!

Egypt: traditions and history of food

The writings of Egypt of the Pharaohs influenced all the cultures and beliefs of the region, including in the sphere of food. Osiris, brother and husband of Isis, was the God of the vine and wheat. We know, thanks to papyruses, frescos and bas-reliefs, that the Egyptians knew beer, *heneket*, *seremet*, and wine (*paour*, ordinary, *nedjem*, sweet, *shedeh*, brandy). They did not impose the prohibitions found among the Semites (Jews, then Arabs, after their conversion to Islam). In Antiquity, both drinks had long co-existed in the eastern Mediterranean and later the western basin: the Celts settled in Gaul (c.1100 B.C.) drank *cervesia*, *cerveza* in Spanish.

Around 2,500 B.C., the Egypt which the Arabs call *Oum el dounia*, “Mother of the World”, invented leavening of bread dough by fermentation. Moulded from barley or wheat, bread remains today a staple food for all Mediterranean people. The same is true, in the eastern and southern shores of the Mediterranean, for lentils, of which the ancient Egyptians were the chief exporters. Lentil soup is an Egyptian speciality. Discovered in Sakkara, the tomb of a woman tells us about some of the foods eaten by Egyptians around 3700 B.C. They include cereal porridge, barley bread, cheese, two sheep’s kidneys and a cooked fish. *Molokheya* (royal dish) (of which we give the recipe) was adopted by all the countries of the Near East.

We should mention a curious little known fact: in Egypt, the goose appeared before the chicken. Frescoes from the time of the first Ramses (1314-1235 B.C.) depict them. One of them, of charming simplicity, shows (already!) it being force fed through a funnel. It was concluded from this that the Egyptians could make *foie gras*, which Perigord and Alsace have made their own speciality. In any case, they knew how to fatten them in the way their descendants like them, who still have no hesitation in comparing a woman to a *ouezza* (goose) to tell her that she is beautiful.

An Egyptian national dish, *foul medammas*, “slow-cooked broad beans”, eaten seasoned with oil by the poor and with butter by the rich, was adopted by neighbouring countries, together with *falafels* (broad bean fritters) whose origin is often, wrongly, attributed to Lebanon. The circumstances of their appearance corroborates this. Indeed, they are hardly mentioned in literature before the 20th century and only appear after the occupation of Egypt by the English in 1882. The Egyptians were inspired, to enhance them, by other types of fried croquettes (fish, meat, vegetable) originating from India and introduced by the British troops who, coming from India, liked them. Myth or Mediterranean paradox: in Israel, tradition holds that the Jews ate them in the Egypt of the Pharaohs!

Paul Balta, expert in the Arab and Muslim worlds of the Mediterranean.

A confluence of traditions

To develop a sophisticated culinary system, you first need a sufficient variety of products. This is true of the Mediterranean, made up of countries with an agricultural tradition and with an endlessly rich social and cultural intermingling. The Mediterranean cuisine, in its many forms, was also an economic cuisine. It was economic in terms of quantity, because you prepared only one dish for the whole day. It was also economic in quality, being predominantly vegetarian, and inventive, because the diet was above all dependent on the vagaries of production. Invention is not only the child of luxury, but also, and most of all, of need, poverty or the penury which sometimes forced dishes to be reformulated using reduced resources. In reviewing it, one realises that the culinary

practices which are the basis of the Mediterranean food model, reputed to be so typical, so special, are in fact a confluence of all the local traditions. It uses ancient techniques, adopts some exotic elements and enriches the whole by its greater complexity and subtlety.

A civilisation is defined by what it adopts, integrates, assimilates and acclimatises rationally and efficiently. From this point of view, the Mediterranean has managed very cleverly to absorb foreign influences by accommodating foreign products from central and western Asia and tropical America. Species, aromatic plants, fruits and vegetables have accompanied the migrations of people and plants. Each conquest, each wave of immigrants is also the occasion for the integration and assimilation of new products and culinary skills. The use of certain condiments by these new communities is reflected in their adaptation of their dietary model to the local setting. It also transmits new usages to local populations and introduces the consumption of previously unknown products.

If this cuisine merited its description as “Mediterranean”, it was able to impose a common way of transforming the foods, correcting their defects by the art of seasoning and making up for gaps by substituting certain products for others. As Fernand Braudel writes: “A great civilisation can equally be recognised by what it sometimes refuses to borrow, by its refusal of certain alignments, by the fact that it makes a choice from what is offered by traders, and which they would often impose if it did not watch out or, more simply, if their temper and appetites were incompatible” (Braudel, 1966).

It is now time to consider the place of meat in the Mediterranean cuisine. Unlike some northern European countries, the Mediterranean countries, while not rejecting it, do not assign absolute importance to meat, since their food identity is perceived rather in terms of cereals and vegetables. Unlike Europe, reputedly “carnivorous” since the Middle Ages (Lauriou, 2002), the cuisine of the southern Mediterranean was based on an ancestral diet in which meat occupied only a modest place. What has now become the most important of its attributes, such as grilled chops, roast shoulder of lamb, barbecued whole roast sheep or brochettes, was at that time the exception and thus saved for big occasions. In the case of meat, too, food production, especially mutton and lamb, did not keep up with the growth of the population and changes in food habits. Adequate food levels could only be maintained thanks to imports of beef and the rapid increase in poultry production.

Although present in a great many recipes, fresh meat in general did not play an important role and was ultimately only eaten on special feast days. Throughout the repertoire, the sheep reigned supreme, its meat being the most eaten and was more often than not an ingredient of meat-based dishes. Less appreciated than mutton or lamb, which is more tender, beef, which provided more meat, is nowadays more compatible with a less elaborate cuisine. In country areas, the pig killed in winter (the killing of the pig is a big event in country life) was eaten throughout the year in various types of cured meat and mainly the lard. Lamb was part of the Easter meal among Catholics.

Since we are talking about meat, it is worth recalling some facts, especially as butchers belonging to the three monotheist religions coexist in the great markets of the European capitals. Thus, in the Jewish food rite, not all meats can be eaten, just as it is forbidden to eat the blood which is considered as the “*life force*” (Benkheira, 2000). Animals which may be eaten include ruminant mammals, birds excluding raptors, fish with scales and

Coffee and tea

Modern times were above all the great era of colonial drinks: chocolate, coffee, tea were introduced into the dietary regime and were a crucial factor in long-distance trade and in the rivalry between the imperial powers of the time. Originally from Ethiopia and Yemen, coffee first conquered Venice in 1570, then Italy, reaching Marseille in 1644, then on to Paris where it spread during the second half of the century. It was a new drink which would come to be an essential component of global big business. From the end of the 16th century to the beginning of the 18th, coffee found its way from the East to the Regency of Tunis and Algiers. It was the Ottomans who promoted the integration of this blackish concoction into the customs of the Arabs.

Thanks to the spread of the drink and the building of coffee-houses in the towns of the Maghreb and the East, the Turks stamped their mark on domestic and urban life, even in the names of utensils (Larguèche, 2001). This drug, which felicitously made up for the absence of alcoholic drinks in the Islamic countries, encountered no resistance from the Sunni theologians, as was the case in the East, and rapidly became a great success (Khiari, 2005). After Europe, Turkey did not long remain the exclusive domain of coffee. Arriving from central Asia, tea entered Turkey. During the 19th century, tea became the essential drink of the Muslim populations of North Africa, far surpassing coffee, with two centres of dissemination: Libya, the domain of black tea, and Morocco, domain of green tea where English merchants played an important role in its acceptance by the population.

fins, which distinguishes them from molluscs and amphibians which it is forbidden to eat. The slaughter is ritual and must therefore respect certain obligations. There are “*kosher*” products whose ingredients and manufacture conform to the principles of the Jewish religion which involves a series of checks by religious authorities.

For Christians, the New Testament abolished Hebrew prohibitions thereby abolishing all food prohibitions. It simply calls to beware the pleasures of the flesh and avoid gluttony and greed. Finally, in Islam, there are several food prohibitions: eating creatures which had died, blood, pork and anything slaughtered without doing so “in the name of Allah”. Animals must be slaughtered according to a prescribed ritual for their flesh to become “*halal*”. Wine is also forbidden, as is also intoxicating drink of any kind. In the context of the Arab-Muslim city, food prohibitions were not so strictly defined, at least between Jews and Muslims. “*Kosher*” food, for example, was perfectly lawful for Muslims. Indeed, a popular saying recommends: “sleep in a Christian bed but eat Jewish food”, since for Muslims, slaughter according to the Christian custom is not *halal*. On the other hand, meat may be eaten when the slaughter is accomplished according to the Jewish rite, which requires the animal to be killed without suffering, under strict physical conditions and according to learned religious observances. Chicken, meanwhile, was for a long time a luxury meat reserved for solemn occasions and part of the menu on feast days. The use of poultry was rare and chicken was considered a dietary supplement to enhance the gastronomic status of stock rather than ordinary food.

Fish, an essential element of the Mediterranean Diet, while never ceasing to be a fairly luxury product, is generally much eaten in coastal towns. Mediterranean people have a wide range of fish and shellfish (blue fish, bass, mullet, red mullet and sea bream are the most prized). As to the various methods of preparation, they are often the same,

originating from or the fruit of practices handed down by the foreign communities settled along the coasts. In Tunisia, for example, you can find Portuguese and Spanish survivals in the consumption of “*bacalao*” or salt cod. It was probably the Portuguese who introduced the cod into Tunisia, as shown by the adoption of the Arab name “*baqalaw*”. It is now mainly consumed in a porridge, chiefly in Sfax, on the feast of *Aïd el Kebir*, to accompany a sweet and sour dish, the ritual “*charmoula*”. The towns of the interior tended rather to eat a mollusc dried in the sun and salted, called “*ouzeif*”.

Among Catholics, fish is the fasting food on Fridays and in Lent. In the South of France, dried cod was eaten, accompanied by garlic mayonnaise. Another prestige product eaten throughout the Mediterranean is mullet roes dried and salted called “*poutargue*”, cut into fine slices or grated. The dislike of *sman* (clarified butter, similar to *ghee*) in favour of fresh butter, deprives certain dishes such as couscous, lamb risotto and roast meat of an essential complement. *Liyya*, Barbary sheep fat, equivalent to lard in Europe, is used in all grilled dishes and merguez sausages, the stuffing of andouillette and in making salted cakes and dumplings.

The diet of Tunisian Jews

While the Jewish contribution to the development of Medieval Arab literature, grammar, theology and philosophy needs no further introduction, their contribution to the cuisine is nowadays less obvious to modern generations who are unaware of the importance of the Jewish community in society (Bahloul, 1983). In cosmopolitan cities such as Cairo, Alexandria, Casablanca, Istanbul or Tunis, the coexistence of Jewish, Christian and Muslim communities was not always as exemplary as one was led to believe, but among the ordinary people good neighbourliness was the rule. Without going so far as to talk of assimilation, nothing in everyday life separated a Muslim Tunisian from a Tunisian Jew, an Egyptian Muslim from an Egyptian Copt: the language was the same, as were customs and sensitivities. Their culinary preferences were identical.

The diet of the Jews also had to obey the prescriptions of the Mosaic religion concerning the method of preparation and cooking of all food including wine. Hebraic religious festivals were also the occasion for feasting. The Sabbath day of rest was the most important. The main dish on the Sabbath is the *tfina* (from *adafina*, which means “something hot” or Jewish soup). In Tunisia, if you exclude the Kosher character of the food, the daily menu of the Jews is not very different from that of the Muslims (Véhel, 2002; Bahloul, 1983). Culinary practices are mutually influenced to the point where they merge. While marked by differences in ritual terms, in which each community expresses its religious identity, food remained a strong sign of coexistence, a place of convergence and syncretism formed by intensive daily exchanges. In the domain of fermented drinks, the Jews produced *boukha*, a national liqueur which is the aperitif of choice. It is the product of the distillation of figs and raisins. The use of this brandy is very common among Tunisian Jews and no family celebration is complete without this vital complement. *Boukha* is drunk without water served with boiled broad beans of chick peas; fried whiting, cod, grey or red mullet; salad with vinegar dressing or bitter oranges, boiled artichokes, biscuits, olives, hard-boiled eggs, peppers, dried or fresh fruits, jams.

Conclusion

For centuries, for the majority of Mediterranean peoples, food was a vital necessity and the cuisine reflected the poverty and uniformity. You ate primarily to satisfy your hunger and so much the better if, exceptionally, you could enjoy what you were eating. The extremely poor country folk all supped the same soup. No trace of a cuisine in these formless soups among the nomads. You lived off the riches or poverty of the land, and the dishes could only be based on the seasonal products which depended on the locality and the climate. In short, quite the opposite, or almost, of the situation today, where abundance predominates and varieties of products are often available.

The famous dictum of the French gastronome Jean Anthelme Brillat-Savarin, at the beginning of the 19th century, “Tell me what you eat, and I will tell you who you are” has been profoundly shaken in this era of globalisation. For modern food, which lacks authenticity, is no longer identifiable, and for that very reason becomes a problem of identity for the consumer of the product who, not knowing what he is eating, suddenly does not know who he is. Yet, despite the upheavals caused by the revolution in wholesale distribution, the extreme variety of products on the market today and the difficulty of tracing their origin, Mediterranean people remain strongly attached to their culinary inheritance and its importance, if not in reality, at least in the collective imagination, thanks to the close links which food practices have always woven with their history.

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A DIETARY MODEL CONSTRUCTED BY SCIENTISTS

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The purpose of this article is to review the historical development of the healthy food model of the Mediterranean Diet and related scientific knowledge from the early 1960s to the present time. The review presents the origins of the first pyramid of the traditional Mediterranean Diet in 1993 and how it has been revised to produce, in 2010, a new updated Mediterranean Diet pyramid. What emerges over the years is the evolution of the Mediterranean Diet from a range of specific foods to a comprehensive Mediterranean lifestyle in which food, health, culture, people, and sustainability all interact, even if its practice in the Mediterranean is diminishing. The food transition in Mediterranean countries and the emerging issues of overweight and obesity are also highlighted in the article.

The present-day lifestyle is characterised by a wide availability of food and an ever-increasing rate of physical inactivity leading to a situation of apparent psycho-physical well-being, which, however, often does not correspond with the real state of health. The typical eating habits of the Mediterranean populations have been progressively enriched

with high-protein foods, saturated fats and sugars to the point where intake now exceeds the necessary intake levels. We are thus living in an age of “apparent well-being”, where the increase in life expectancy runs parallel to the increase in the risk of diseases such as obesity, metabolic syndrome, cardiovascular disease and cancer. The new pyramid of the Modern Mediterranean Diet, addressed to individuals from 18 to 65 years of age, takes the evolution of society into consideration, highlights the fundamental importance of engaging in physical activity and conviviality and of drinking water, and lays emphasis on the consumption of local seasonal food products.

It is a Mediterranean Diet that has been revised in the light of modernity and well-being but also allows for the various cultural and religious traditions and different national identities. The new pyramid is a simple mainframe, which can be adapted to the current needs of the Mediterranean people with respect to all local variants of the Mediterranean Diet. Following the recent inscription of the Mediterranean Diet in UNESCO’s List of the Intangible Cultural Heritage of Humankind, the new revised Mediterranean pyramid aims to popularise the concept and in particular to emphasise its applicability to present-day lifestyles in order to counteract the current dramatic decline in the healthy Mediterranean dietary pattern throughout the Mediterranean area.

From concept to development

A large-scale study conducted in the 1960’s (Cresta *et al.*, 1969) revealed that diets in the Mediterranean areas were characterised by a much higher intake of cereals, vegetables, fruit, and fish and a much lower intake of potatoes, meat and dairy foods, eggs, and sweets. The traditional Mediterranean Diet of the mid 1960s was also characterised by high consumption of plant foods and high intake of olive oil as the principal source of mono-unsaturated fat.

In 1970, Ancel Keys published “*Coronary heart disease in seven countries*” (Keys, 1970) and in 1975 “*How to eat well and stay well. The Mediterranean way*” (Keys, 1975). Later, in 1980, he published “*Seven countries: a multivariate analysis of death and coronary heart disease*” (Keys, 1980). The seven countries participating in that study were the United States, Japan, Italy, Greece, the Netherlands, Finland and Yugoslavia. These studies established the scientific interest in the health benefits of the Mediterranean Diet. Keys summarised his major contribution to the Mediterranean Diet thus: “My concern about diet as a public health problem began in the early 1950s in Naples, where we observed very low incidences of coronary heart disease associated with what we later came to call the ‘good Mediterranean Diet’. The core of this diet was mainly vegetarian, and differed from American and northern European diets in that it was much lower in meat and dairy products and used fruit for dessert. These observations led to the subsequent research in the *Seven Countries Study*, in which it was demonstrated that saturated fat was the major dietary villain.” (Keys, 1995).

In 1988, a symposium on “The Mediterranean Diet and food culture” was held in Delphi, Greece, sponsored by the Association of Schools of Public Health in the European Region and the European Regional Office of the WHO. Selected papers from this symposium were then published in a special issue of the *European Journal of Clinical Nutrition* –

edited by Antonia Trichopoulou and Elisabet Helsing – which was devoted to the Mediterranean-type diet (Trichopoulou and Helsing, 1989). These studies concerned Mediterranean food patterns, which seemed to meet all the criteria of a prudent or healthy diet.

The European MONICA research project, conducted in the 1980s (Stewart *et al.*, 1994), confirmed the South-North gradient in the incidence of cardiovascular disease in Europe and further established the relationship between dietary habits and cardiovascular health, with much reduced mortality rates for persons following a Mediterranean-type dietary pattern.

In 1992, a seminar was held in Barcelona, Spain, on the “*Changing patterns of fat intake in Mediterranean countries*”, sponsored by the Catalanian Department of Health in collaboration with the European Office of the World Health Organisation, and selected papers were subsequently published in a second special issue of the European Journal of Clinical Nutrition devoted to the Mediterranean-type diet, edited by Lluís Serra-Majem and Elisabet Helsing (Serra-Majem and Helsing, 1993).

The increasing awareness of scientists concerning the nutrition and lifestyle of certain Mediterranean populations led to the International Conference on “*The Diets of the Mediterranean*”, which was held at the Harvard School of Public Health (Cambridge, MA) in 1993, and organised by Oldways Preservation & Exchange Trust and the WHO/FAO Collaborating Center for Nutritional Epidemiology. Selected papers were again published in a special issue of the American Journal of Clinical Nutrition edited by Marion Nestle (Nestle, 1995), who highlighted the fact that there was research evidence linking this particular Mediterranean dietary pattern to the improved health and longevity of the populations consuming it. In particular, she emphasised that, given worldwide trends towards dietary uniformity, classic Mediterranean Diets were endangered and a great deal of basic and applied research was needed to define how such traditional and healthful dietary patterns could be preserved and promoted (Nestle, 1995).

The First International Congress on the Mediterranean Diet was convened by the Mediterranean Diet Foundation in Barcelona in 1996 and led to the signing of the “*Declaration of Barcelona on the Mediterranean Diet*”, which emphasised both its healthy eating aspects and its cultural and historical dimensions. Since then, the Congress on the Mediterranean Diet has taken place every two years with the subsequent publication of selected papers of the proceedings in special editions of Public Health Nutrition (Serra-Majem, Bach-Faig, Roman, 2004; Serra-Majem, Bach-Faig, 2008; Serra-Majem, Bach-Faig, Miranda, Clapés, 2010).

The International Task Force for Prevention of Coronary Heart Disease convened an International Conference on the Mediterranean Diet in London in the year 2000, at which a “Consensus statement: dietary fat, the Mediterranean Diet, and life-long good health” was issued: “There is increasing scientific evidence that there are positive health effects from diets which are high in fruits, vegetables, legumes, and whole grains, and which include fish, nuts and low-fat dairy products. Such diets need not be restricted in total fat as long as there is not an excess of calories, and should emphasise predominantly vegetable oils that are low in saturated fats and partially hydrogenated oils. The

traditional Mediterranean Diet, whose principal source of fat is olive oil, encompasses these dietary characteristics” (International Task Force for Prevention of Coronary Heart Disease, 2000).

A meeting of the International Task Force on the Mediterranean Diet was held in Barcelona in 2002; it was organised by the Foundation for the Advancement of the Mediterranean Diet, and it was at that meeting that the re-definition of the Mediterranean Diet was discussed for the first time as well as the need to update and define it with a degree of openness that would acknowledge any healthy changes within this model that have occurred over the last 40 years or that may come about in the future (Serra-Majem *et al.*, 2004). The First Forum on Mediterranean Food Cultures was held in Lamezia Terme, Italy, the same year; it was organised by the Universitas Italica Foundation, in which nutritionists and food anthropologists agreed to collaborate on the Mediterranean Diet and Mediterranean food cultures as a common ground for a unique cultural heritage, which needed to be preserved and acknowledged amongst Mediterranean people (Dernini, 2006).

As the continuation of this interdisciplinary and multicultural dialogue between nutritionists and anthropologists, the Third Forum on Mediterranean Food Cultures took place in Rome in 2005 at Sapienza University; it was organised by the Food Sciences Institute of the university, where the process was initiated for UNESCO recognition of the Mediterranean Diet as an intangible cultural heritage. “*The 2005 Rome Call for a Common Action on Food in the Mediterranean*” was issued at that meeting (Dernini, 2006); this document pointed out that the ancient Greek word *δῆαιτα* means ‘equilibrium’, ‘lifestyle’, and presented the Mediterranean Diet as more than just a diet – as an entire lifestyle pattern in which physical activity played an important role. It was proposed that a common definition of the Mediterranean Diet be established as a priority so that all Mediterranean countries could present a common perspective and an overall interdisciplinary strategy for safeguarding and enhancing it.

In 2007, the governments of Greece, Italy, Morocco and Spain, with the technical coordination of the Foundation for the Advancement of the Mediterranean Diet, submitted a transnational application to UNESCO for recognition of the Mediterranean Diet as part of the intangible cultural heritage of humankind, and the Barcelona Declaration on the Mediterranean Diet as an Intangible Cultural Heritage was issued in Barcelona the same year (Reguant-Aleix *et al.*, 2009). It was unanimously agreed that full support would be given to this application for inclusion of the Mediterranean Diet on UNESCO’s Representative List of the Intangible Cultural Heritage of Humanity.

In 2009, the Mediterranean Diet Foundation (MDF) and the Forum on Mediterranean Food Cultures launched a process of dialogue for reaching a consensus in the international Mediterranean scientific community on a new revised, updated and unpatented Mediterranean pyramid as well as on the Mediterranean Diet as a model of a sustainable diet (Gussow and Clancy, 1986; FAO, 2010). That consensus was reached in November 2009 at the Third International CIISCAM Conference held in Parma, Italy, and was further developed at the Eighth International Congress on the Mediterranean Diet held in Barcelona by the MDF in March 2010.

Various definitions by nutritionists

It is indeed of interest to compare the various definitions of the Mediterranean Diet given by leading nutritionists.

Ansel Keys: “What is the Mediterranean Diet? One definition might be that it is what the Mediterranean natives eat. But as we know and think of it now, it is a relatively new invention. Tomatoes, potatoes, and beans, for example, came from America long after Christopher Columbus discovered the New World. I noticed that the heart of what was considered the Mediterranean Diet is mainly vegetarian: pasta in many forms, leaves sprinkled with olive oil, all kinds of vegetables in season, and often cheese, all finished off with fruit, and frequently washed with wine” (Keys, 1995).

Marion Nestle: “A largely plant-based dietary pattern of societies in countries surrounding or surrounded by the Mediterranean Sea. For purposes of discussion in this supplement, however, the term refers specifically to the diets in the early 1960s in Greece, southern Italy, and other Mediterranean regions in which olive oil was the principal source of dietary fat” (Nestle, 1995).

Walter Willett *et al.*: “The term ‘Mediterranean Diet’ has a specific meaning. It reflects food patterns typical of Crete, much of the rest of Greece, and southern Italy in the early 1960s. The selection of this specific time and these geographical areas is based on three lines of evidence: 1) Adult life expectancy for populations in these areas was among the highest in the world, and rates of coronary heart disease, certain cancers, and some other diet-related chronic diseases were among the lowest in the world in the early 1960s, despite limitations of existing medical services. 2) Data on food availability and dietary intake in the Mediterranean region describe patterns with many common characteristics. 3) Dietary patterns sharing many of these common characteristics have been associated with low rates of chronic diseases and high adult life expectancy in numerous epidemiological studies conducted through the world... As defined here, it is closely connected with traditional areas of olive cultivation in the Mediterranean region. Thus, the generic term ‘Mediterranean Diet’ refers to dietary patterns found in olive-growing areas of the Mediterranean region more than 30 years ago” (Willett *et al.*, 1995).

Anna Ferro-Luzzi and Francesco Branca: “Since Keys’ first observations in the 1960s, the Mediterranean Diet has been under scrutiny by researchers and public health specialists for its health-promoting qualities. Detailed analysis of food surveys carried out in Italy at that time permitted the definition of an Italian-style Mediterranean Diet, characterised by low total fat (< 30% of energy), low saturated fat (<10% of energy), high complex carbohydrate, and high dietary fiber” (Ferro-Luzzi and Branca, 1995).

Antonia Trichopoulou and Pagona Lagiou: “The term ‘Mediterranean’ diet refers to dietary patterns found in olive-growing areas of the Mediterranean region and described in the 1960s and beyond. There are several variants of the Mediterranean Diet, but some common components can be identified: high monounsaturated/saturated fat ratio; ethanol consumption at moderate levels and mainly in the form of wine; high consumption of vegetables, fruits, legumes, and grains; moderate consumption of milk and dairy products, mostly in the form of cheese; and low consumption of meat and meat products” (Trichopoulou and Lagiou, 1997).

Lluís Serra-Majem *et al.*: “The term ‘Mediterranean Diet’ reflects the dietary patterns characteristic of several countries in the Mediterranean Basin during the early 1960s. The association between longevity and reduced mortality and morbidity for coronary heart disease, certain cancers and other nutrition-related diseases, and the common dietary food patterns in these countries, have substantiated this concept” (Serra-Majem *et al.*, 2004).

On 16 November 2010, UNESCO approved the inscription of the Mediterranean Diet in the List summarising it as follows: “The Mediterranean Diet constitutes a set of skills, knowledge, practices and traditions ranging from the landscape to the table, including the crops, harvesting, fishing, conservation, processing, preparation and, particularly, consumption of food. The Mediterranean Diet is characterized by a nutritional model that has remained constant over time and space, consisting mainly of olive oil, cereals, fresh or dried fruit and vegetables, a moderate amount of fish, dairy and meat, and many condiments and spices, all accompanied by wine or infusions, always respecting the beliefs of each community” (UNESCO, 2010).

Mediterranean Diet and health

The health benefits of the Mediterranean Diet and its prophylactic effect against chronic diseases has been well established by the scientific community.

Cardiovascular diseases

The pioneer Seven Countries Study conducted by A. Keys was the first to establish the association of a traditional Mediterranean dietary pattern with a markedly reduced incidence of coronary heart disease mortality (Keys, 1970; Keys, 1980). On the basis of this initial knowledge, scientists constructed dietary scores of adherence to the traditional Mediterranean Diet by indexing positively those beneficial foods which are mostly consumed and negatively the foods less consumed and more typical of the western industrialised world (Trichopoulou *et al.*, 1995; Menotti *et al.*, 1999; Sánchez-Villegas, 2003; Fidanza *et al.*, 2004; Bach *et al.*, 2006; Gerber, 2006; Issa *et al.*, 2011). This comprehensive dietary tool enabled new large-scale comparative surveys among different population samples. Indeed, numerous more recent epidemiological surveys were conducted in various countries and confirmed that good adherence to the traditional Mediterranean Diet is systematically associated with a markedly reduced risk of cardiovascular events and mortality (Trichopoulou *et al.*, 1995, 2003 and 2005; Martínez-González *et al.*, 2002; Estruch *et al.*, 2006; Buckland *et al.*, 2009).

In addition, an intervention study with a Mediterranean-type diet has been conducted in France on subjects with cardiovascular disease and showed a 70% reduction in the cardiovascular event rate after 4.5 years' follow-up (Lorgeril *et al.*, 1994). Other intervention studies performed in Italy, France and Spain on subjects at risk of cardiovascular disease all showed improvement for several risk factors (lipoproteins and cholesterol, hypertension, insulin sensitivity, inflammation) after a Mediterranean-type diet (Esposito *et al.*, 2003; Vincent-Baudry *et al.*, 2005; Panagiotakos *et al.*, 2007; Lairon, 2007; Salas-Salvado *et al.*, 2008). The reasons for these marked beneficial effects of a Mediterranean Diet on cardiovascular risk and mortality have been studied further. Indeed, surveys

have repeatedly shown that adherence to a Mediterranean dietary pattern is associated with reduced body weight (Mendez *et al.*, 2006; Panagiotakos *et al.*, 2006; Sánchez-Villegas *et al.*, 2006; Buckland *et al.*, 2008; Issa *et al.*, 2011; Zazpe *et al.*, 2010) and more importantly a reduced waist circumference as a marker of central obesity (Panagiotakos *et al.*, 2006; Romaguera *et al.*, 2009; Issa *et al.*, 2011), a lower incidence of the metabolic syndrome (Tortosa *et al.*, 2007; Babio *et al.*, 2009; Rumawas *et al.*, 2009; Kastorini *et al.*, 2011; Kesse-Guyot *et al.*, 2012) and of type 2 diabetes (Martínez-González *et al.*, 2008). This was stressed in a recent systematic literature survey (Sofi *et al.*, 2008).

Cancer

The data from a series of case-control studies have been systematically analysed (La Vecchia, 2004). They indicate in general that high intake of foods typical of the traditional Mediterranean dietary pattern – i.e. fruit, vegetables, whole grains, olive oil and fish – were associated with a reduced risk of developing various types of cancers. This was recently confirmed by other reviews (Sofi *et al.*, 2008; Bosetti *et al.*, 2009; Vernele *et al.*, 2010).

Neuro-degenerative diseases

Although fewer studies have as yet been conducted on Parkinson's or Alzheimer's disease, the risk of contracting these diseases has been shown to be lower in persons adhering well to a traditional Mediterranean dietary pattern (Sofi *et al.*, 2008). The Mediterranean Diet may positively affect the aging process through the reduction of the prevalence of cardiovascular and chronic diseases and, in particular, the evolution of cognitive decline related to Alzheimer's and vascular dementia (Féart *et al.*, 2010; Tyrovolas and Panagiotakos, 2010; Martínez-González *et al.*, 2009).

Mortality

The beneficial effects of a Mediterranean dietary pattern on reducing mortality have long been recognised (Trichopoulou *et al.*, 1995 and 2003) and a recent study has clearly demonstrated that the main food components of this diet all play a role in the process (Trichopoulou *et al.*, 2009). This provides an objective basis for the concept that the overall dietary pattern is effective in improving health status by integrating the positive metabolic effects of this variety of typical Mediterranean foods.

It should be mentioned in support of all of these diet-health connections that recent studies have clearly underlined the nutritional quality of a Mediterranean dietary pattern. One survey demonstrated that subjects who adhere closely to a Mediterranean Diet pattern fulfil most mineral and vitamin requirements much better than persons on a western diet (Serra-Majem *et al.*, 2009). Computer-assisted modelling of individual diets has identified that the most important foods that enable people to fulfil all present nutritional requirements (except Vitamin D) are those typical of the Mediterranean dietary pattern i.e. nuts, unrefined grains, legumes, fish and vegetables (Maillot *et al.*, 2010 and 2011).

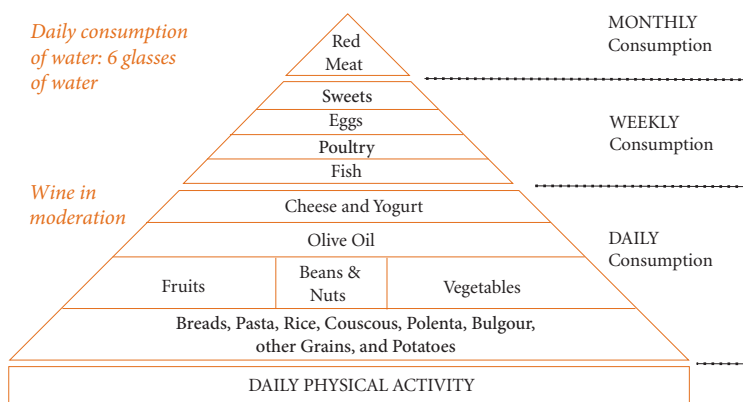
Mediterranean Diet pyramids

The Mediterranean Diet is rich in plant foods (cereals, fruit, vegetables, legumes, tree nuts, seeds and olives), with olive oil as the principal added fat source, along with high

to moderate intake of fish and shellfish, moderate to low consumption of eggs, poultry and dairy products (cheese and yoghurt), low consumption of red meat (mainly mutton and goat), pastries and saturated fat, and moderate intake of alcohol mainly in the form of wine during meals. It was also the diet chosen by mainly poor rural societies.

This healthy traditional Mediterranean dietary pattern has been popularised through a pyramid representation, which graphically highlights the foods to be consumed on a daily or weekly basis or less frequently. The first traditional Mediterranean Diet pyramid was presented in 1993 at the international conference on Mediterranean Diets held at the Harvard School of Public Health in Boston (Willett *et al.*, 1995), and it was compared to the 1992 food guide pyramid issued by the US Department of Agriculture in preparation for the 1995 Dietary Guidelines for Americans. Then, in 1994, it was copyrighted by Oldways Preservation & Exchange Trust (see Figure 1) (Willett *et al.*, 1995).

Figure 1 - The Mediterranean Diet pyramid, 1993



Source: *International Conference on Mediterranean Diets, Boston, 1993; Copyright by Oldways Preservation & Exchange Trust, 1994.*

Since then, various Mediterranean Diet pyramids have been designed for the populations of Greece (Supreme Scientific Health Council, 1999), Spain (Aranceta and Serra-Majem, 2001), and Italy (Ministero della Salute-Gruppo di lavoro, 2004), tailored to their various food habits. These refer diversely to portion sizes and frequency of consumption – daily, weekly and monthly – but are not standardised. On the other hand, current versions of the Mediterranean Diet pyramid are inappropriate for the Middle East and North African countries and others. This is important to ensure cultural appropriateness and also allow for the development and transmission of culinary and traditional eating habits.

In 2008, the Oldways Preservation & Exchange Trust convened the 15th Anniversary Mediterranean Diet Symposium in Cambridge (MA) and issued a new updated version of the Mediterranean Diet pyramid (Oldways Preservation & Exchange Trust, 2009). This pyramid was again copyrighted by the Oldways Preservation & Exchange Trust in 2009.

Following many discussions and numerous reservations expressed by members of the Mediterranean scientific community in response to this new copyrighted Med diet

pyramid, the Mediterranean Diet Foundation together with the Forum on Mediterranean Food Cultures promoted dialogue among international experts and launched the process of gathering scientific opinion in order to develop a consensus on a new revised Mediterranean Diet pyramid representation. The new revised MD and food lifestyle pyramid (as a scheme) is the outcome of the internal dialogue within the scientific community and further discussions at the international conference organised by the Interuniversity International Studies Center on Mediterranean Food Cultures (CIISCAM) in November 2009 on “*The Mediterranean Diet as a Model of Sustainable Diet*”. It was at that meeting that a first international consensus was reached on a new revised modern Mediterranean Diet pyramid, without any copyright, (see Figure 2) (CIISCAM, 2009).

The following topics were discussed: i) the consumption of fresh, minimally processed, local and seasonal foodstuffs, ii) the balance between energy-dense and nutrient-dense foods in relation to reduced energy expenditure and the obesity epidemic, iii) the availability, sustainability, accessibility and cost of recommended foods, iv) adaptation to various geographical, socio-economic and cultural contexts.

At the Eighth International Congress on the Mediterranean diet held in Barcelona in 2010, the 2009 Mediterranean diet pyramid was further revised, redesigned and complemented with an informative text by the International Scientific Committee of the Mediterranean Diet Foundation (see Figure 3) (Bach-Faig *et al.*, 2011). The traditional Mediterranean Diet (MD) pyramid has thus been updated to adapt to contemporary lifestyles (Figures 2 and 3).

The modern Mediterranean diet pyramid has been developed by taking into consideration all scientific evidence for the health benefits of the Mediterranean diet and its protective effect against chronic diseases, as well as contemporary lifestyles and environmental constraints. Experts in nutrition, anthropology, sociology and agriculture have been involved in this new richer model, which addresses the healthy adult population, and should be adapted to specific requirements in the case of children, pregnant women and other health circumstances.

The new pyramid (Figures 2 and 3) follows the previous pattern: at the base, foods that should sustain the diet, and at the upper levels, foods to be eaten in moderate amounts. Furthermore, qualitative elements concerning social and cultural features of the Mediterranean lifestyle are also incorporated. It is not just a matter of prioritising certain food groups, but also of paying attention to how food is cooked and eaten. The pyramid also reflects and introduces the concept of the composition of main meals.

The pyramid establishes dietary guidelines regarding daily, weekly and occasional consumption with a view to following a healthy and balanced diet. An intake of 1.5 to 2 litres of water per day is recommended as well as main meals consisting mainly of three basic food groups: cereals (one or two servings), fruit (one or two servings), and vegetables (at lunch and dinner, two servings or more). Vegetables, fruit and minimally refined cereals are situated together at the base of the pyramid to minimise energy intake. Fruit and vegetables of different colours should be eaten to provide a diversity of antioxidants and protective compounds. Olive oil is placed at the centre because, in the Mediterranean Diet, it is the principal source of dietary lipids and research has documented its high

Figure 2 - The Mediterranean Diet pyramid, 2009

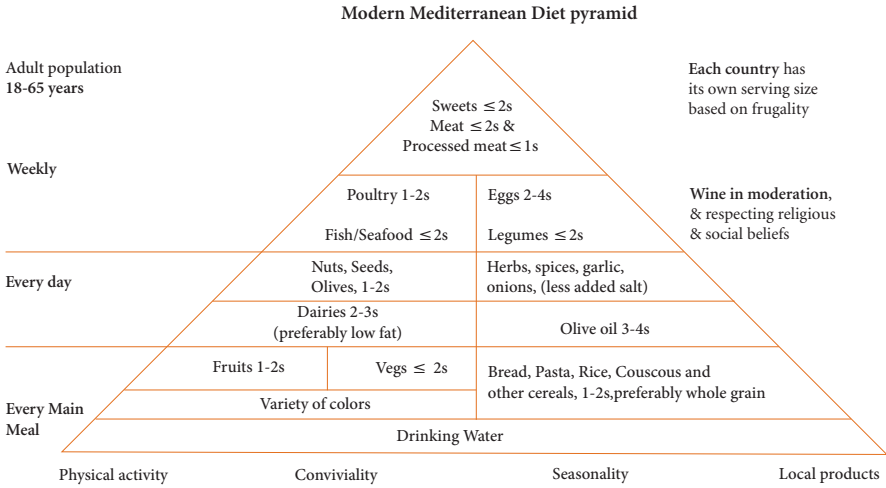
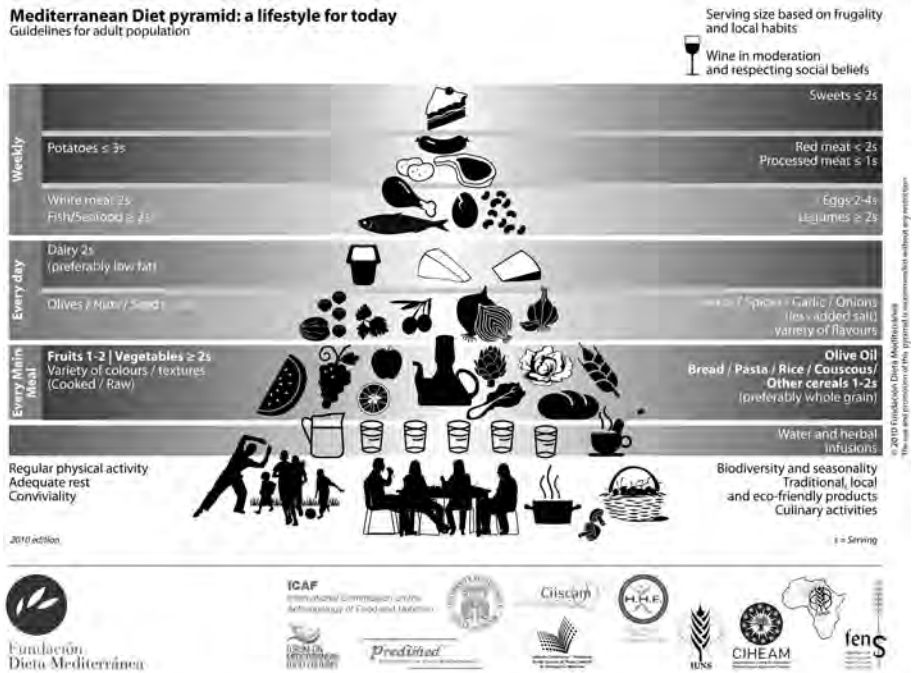


Figure 3 - The Mediterranean Diet pyramid, 2010



Source: *Eighth International Congress on the Mediterranean Diet, Barcelona, 2010.*

nutritional quality and health benefits. Oleic acid is also the major fatty acid present in adipose tissue, where it may function as an antioxidant (Berry, 1997).

Furthermore, plant foods should form the core of the food pattern in general, since they provide key nutrients and protective substances that contribute to general well-being and serve to maintain a balanced diet. Spices, herbs, garlic and onions are present to introduce flavour and contribute to salt reduction. Reasonable consumption of olives, nuts and seeds (such as a handful) makes a healthy snack choice. Dairy products are recommended preferably in the form of low-fat yoghurt and cheese. And moderate consumption of wine during meals is also recommended depending on religious and social customs.

A variety of plant and animal proteins should be consumed. The frequency with which these sources of protein are recommended on a weekly basis: fish (two or more servings), legumes (more than two servings), white meats (two servings) and eggs (two to four servings). Red meat (less than two servings, preferably lean cuts) and processed meats (less than one serving) should be eaten in smaller quantities and less frequently. The pyramid also gives a weekly recommendation for potatoes, preferably fresh potatoes.

Foods situated at the upper levels such as animal foods, which have a high sugar and fat content, should be eaten only in moderation and on special occasions. The incorporation of lifestyle and cultural elements together with the proportion and frequency recommendations is one of the innovations of the pyramid. If all the benefits of the Mediterranean Diet are to be obtained, a healthy lifestyle should be adopted and certain cultural elements should also be preserved. These elements are:

- *Moderation*: in order to combat the obesity pandemic, portion sizes should be based on frugality, thus adapting energy intake to modern urban and sedentary lifestyles. It is recommended that each country recommend its own serving sizes.
- *Conviviality*: the conviviality aspect is important for the social and cultural value of a meal, over and above the nutritional aspect. Cooking, sitting around the table and sharing food in the company of family and friends provides social support and creates a sense of community.
- *Cooking*: it is stressed that cooking should be regarded as an important activity, particularly when there are children, and that the proper time should be taken. Cooking can be relaxing and fun and can be done with family, friends and loved ones.
- *Seasonality, biodiversity, eco-friendliness, and traditional and local food products* are presented at the bottom of the pyramid to highlight how the new revised modern Mediterranean Diet is compatible with the development of a sustainable diet model for present and future Mediterranean generations.
- *Physical activity*: regular exercise of moderate intensity (at least 30 minutes per day) is recommended as a basic complement to the diet in order to balance energy intake and maintain healthy body weight and as a source of many other health benefits. Walking, taking the stairs rather than the lift, housework, etc, are simple and easy ways of doing exercise. Practising leisure activities in the open air and preferably with others makes it more enjoyable and strengthens the sense of community.

The new pyramid is the result of international consensus and is based on the latest scientific evidence in the field of health and nutrition published in hundreds of scientific articles in the last few decades, thus contributing to the harmonisation of educational tools used in the promotion of the Mediterranean Diet, and responds to the need for a common framework among Mediterranean countries. The use and promotion of this pyramid is recommended without restriction and the 2010 updated edition 2010 (see Figure 3) has been adapted, translated and edited in ten different languages (English, Spanish, Catalan, Galician, Euskera, French, Arabic, Italian, Portuguese and Greek) by the Mediterranean Diet Foundation in collaboration with several International Organisations.

Conclusion

The traditional Mediterranean Diet is the heritage of millennia of exchanges amongst the peoples and cultures of the Mediterranean Basin. It formed the basis of eating habits throughout the region until the mid twentieth century, but it is now gradually being lost due to the spread of the western-type economy and urban and technological society as well as the globalisation of production and consumption.

Conceived as a constantly evolving lifestyle, the Mediterranean Diet is a complex system of shared knowledge relating to health, food, cultures and people; it is the product of a particular environment, a geographical region of multiple facets and rich history, which conserves traditional knowledge and a diversity of foods and diets. Thought must therefore be devoted to how the perception of the Mediterranean Diet can be modified, so that it is seen not only as a healthy dietary pattern that reduces mortality and morbidity but also as a model of a Mediterranean lifestyle of well-being, with country-specific and culturally appropriate versions for each Mediterranean country. The southern Mediterranean countries are undergoing transition, however, in the areas of health and nutrition. Their populations are suffering from under-nutrition as well as chronic nutrition-related diseases, which are increasingly leading to disabilities and death. The data reported on this region show that there is a shift in dietary habits from a traditional Mediterranean Diet to industrial food, which could explain in part the nutritional and metabolic disorders reported in the region's population. Unhealthy eating practices in the southern Mediterranean countries include high consumption of saturated fats and refined carbohydrates, low consumption of fiber, and sedentary behaviour (Belahsen and Rguibi, 2006).

As a result, and given the current changes in the food production system and globalisation, the sustainability of the Mediterranean Diet is becoming questionable. Urgent action must therefore be taken in the field of public health and nutrition policy to counteract dietary westernisation and to preserve the healthy Mediterranean food consumption pattern from increasing erosion (da Silva *et al.*, 2009).

Based on a traditional variety of diverse local foods which are integral to the Mediterranean environment, the Mediterranean Diet is still an under-explored resource for biodiversity and nutrition in the context of food and nutrition security in the region. More than just a dietary pattern, it is a potential model for effective sustainable development in the Mediterranean Basin.

New research projects and studies on the Mediterranean Diet as an example of a sustainable diet, in which nutrition, biodiversity, local food production, local culture and sustainability are closely interconnected, should be encouraged and supported and the dissemination of the results should be promoted. New cross-cutting, intersectoral case studies need to be developed in order to demonstrate the synergies of biodiversity, nutrition and sustainability contained in the Mediterranean Diet for the benefit of present and future generations. It is thus strongly recommended that this diet be developed throughout the region.

Although the Mediterranean Diet is recognised as one of the healthiest diets in the world and has been acknowledged by UNESCO as an intangible cultural heritage of humankind and by the FAO as an example of a sustainable diet (FAO, 2010; Burlingame and Dernini, 2011), it is being progressively eroded. Urgent measures are therefore needed to halt that erosion, particularly amongst the younger generations, who form the majority of the populations in the southern Mediterranean countries.

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2 PART TWO

FOOD
and sociocultural
dynamics



MUTATIONS IN MEDITERRANEAN SOCIETIES

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This paper aims to describe the socio-demographic transformations in Mediterranean societies that have had repercussions on lifestyles and food habits. These changes will be examined from three general viewpoints: demographic changes, socio-economic changes and, finally, migration dynamics in the region.

These three issues will be approached from a cross-over perspective, an analysis based on a shared vision that will focus on the relation between tradition and modernity, the influence of religion and the impact of globalisation. Elements that should allow us to grasp the depth of the changes and the scope of the impact and transformations involved.

This cross-over approach aims to avoid repeating the complete and thorough analysis of the socio-demographic context of the *Mediterra 2008*¹ report, providing references to the main demographic changes in the region which, to a certain extent, explain these social mutations: urbanisation and its impact on the rural population and the main changes related to demographic transition (ageing, importance of youth, etc).

Thus, we will take into account the changes that have occurred in the region at the level of traditional and post-modern values (Ingelhardt, 2005) and the globalised production system (Castells, 2005). These are elements that have brought about changes in mentalities, future expectations, intergenerational and gender relations, and the role of women in society, as well as interrelations with the rest of the world; elements that will affect lifestyles and consequently the evolution of food and consumer habits.

Change in values and impact of globalisation

For the Mediterranean region, the transition to modernity and, subsequently, to post-modernity will involve the introduction of a change of values that will put modernity and tradition in opposition within Mediterranean societies. This is an ongoing clash, with effects on both the public and private sphere, complemented and often determined by globalisation. In fact, the globalisation of the economic field will introduce changes

1 - Chapter 1 "The Socio-demographic Context", in CIHEAM (2008).

in the distribution and availability of food products (imports, commercial innovation, transformation of retail sales) while changes in lifestyles and food habits are simultaneously being introduced as a result of this transition from tradition to modernity.

New Lifestyles

Although the northern Mediterranean has seen a gradual transition of traditional values to modernity introduced by industrialisation, and subsequently to the resulting post-industrial society and post-modern values, the southern Mediterranean is confronting these transitions in a much shorter period of time and, in some cases, simultaneously overlapping social spaces ruled by traditional, modern and post-modern values.

Economic development and social change in the Mediterranean

The failure of industrialisation

Owing to the interest of governments of southern and eastern Mediterranean countries in modernising the economic structure as a lever towards modernity, the industrial sector grew significantly in the 1960s and early 1980s. At the end of the 1980s and early 1990s industrial development was hindered by economic recession in industrialised European countries and the Gulf War. The capacity to manoeuvre and adapt production is limited; therefore, many of the branches of industry become obsolete and are not competitive in the international market.

Debt funded by the UE

The failure in the industrialisation of southern and eastern Mediterranean countries has two consequences, one negative and another positive. On the one hand, the economic failure means that countries built up huge debts. Given the proximity with the EU, European countries play a predominant role in financing development aid funds. They partially finance the deficit to prevent an apparent and feared invasion of people from the other side of the Mediterranean Sea.

Lifestyle improvement

The positive consequence will be the transfer of workers directly from the primary to tertiary sector, a phenomenon that involves improvements in the quality of life of the people who, in this way, avoid working in sectors that potentially offer minimum salaries associated with unstable working conditions. This improvement, although it does not entail a large growth from the economic point of view, opens the door to greater and better consumption. In particular, there will be a social evolution seen in increased and improved food consumption.

Source: Caïs Fontanella (2001).

In post-industrial society, living conditions are very different from those of industrial society. Instead of working in production-line factories, people work with their minds and their imagination, standardisation, centralisation, bureaucratisation, hierarchisation, and everything that is characteristic of industrial society is increasingly less valid for post-industrial society.

It is a change that means leaving behind a world in which survival is uncertain, and completely transforms our way of confronting life, values and lifestyle in general. This is something that until now few people in history have been guaranteed, and that completely changes the approach to life (Ingelhart, 2005).

The main characteristic of wealthy post-industrial societies is that survival is taken for granted and guaranteed, as a consequence of the great economic progress that has led to the welfare state. Most people who live in these societies assume their survival as a given, although they also do so unconsciously as they were born and grew up in them, and the approach to life changes notably. What we are seeing is the emergence of a fundamentally different vision of the world, something that both world and European values surveys have started to explore and have already given us a specific image of what is happening (Ingelhart, 2005).

Basically, we are facing two dimensions of change: first, a shift towards modernisation in culture from a traditional authority to a rational legal authority; second, from an economy based on stability to a society in which economic growth prevails. This is a change in direction and a cultural change, which could be called post-modernity and post-industrial society.

Consumption after the industrial era

Behind Baudrillard's approach to consumption, we find the notion of anomie, a social state in which confusion and mutual contradiction of the existing norms create a serious disorientation in the conduct of the individual. This dislocation can be understood, according to the author, from the process of industrialisation, where "the industrial monopolistic concentration will abolish the differences between men and will homogenise people and products." This process will lead to *personalisation*, i.e., faced with the fact of having become another number within a bureaucratic and productive apparatus, personalisation will mean treating people as people. Analogously to personalisation, we find *naturalisation*, which consists of restoring nature after having annihilated it as in the case of a property development called "Green City" where trees are replanted in the same place they had been uprooted, or rather *culturalisation*, which consists of simulacra resulting from the hyper-rationalisation of the industrial era, such as "wine culture", which appears precisely after having lost contact with wine.

Source: Baudrillard (1974).

Although industrialisation meant a change of mentality, from the traditional to the secular-rational, later there was a reassertion of values. Values understood as collective preferences that refer to ways of being, thinking or acting collectively and recognised as ideals (Tozy, 2010). Speaking of values means establishing preferences between practices and beliefs. We should start from the basis that values have the practical function of guiding, legitimating, rationalising, orienting or hierarchising individual or collective actions.

For the Euro-Mediterranean region we can, thanks to surveys (e.g., European Values Survey) monitor two notable values: the autonomy of the individual and the role of religion. Although it is true that religion continues to be a structuring factor of vital importance for most people in the region, we see how it can come to have a clear effect on the emancipation of the individual, given that it has been proven that traditional societies put great emphasis on teaching children obedience so that they follow traditional rules. However, in rational secular societies, they put greater emphasis on independence, on thinking for themselves and on determination (Ingelhart, 2005).

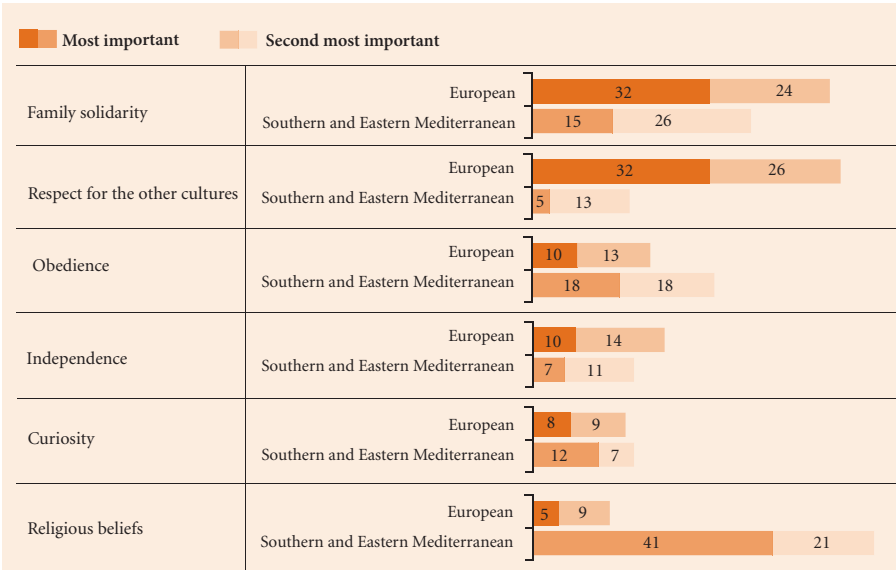
Table 1 - Values considered important for children education by respondents

	Value priorities of respondents in their home country			Perception about values in European countries			Perception about values in the southern and eastern Mediterranean countries		
	Family solidarity	Religion	Curiosity	Family solidarity	Religion	Curiosity	Family solidarity	Religion	Curiosity
Germany	44,4	2,6	8,5	32,4	10	5	33,1	34,4	2,5
Bosnia-Herz.	20,3	6,9	6	17,4	9,2	6,5	18,8	16	8,1
Egypt	3,1	50,6	16,4	4,5	12,8	39,8	6,9	38	17,4
Spain	29,9	6,5	4,6	26,2	5,9	3,6	18,4	29,8	2,9
France	28	5,9	7,6	22,7	4,9	9,7	25,7	23,3	5
Greece	35,1	6,9	2,4	27,2	8	3	19,9	34,2	2
Hungary	61,8	6,9	3,5	51,2	10,2	5,2	34,6	45,7	1,5
Lebanon	21,3	39,6	11,5	4,2	4,8	24,7	15,3	45	5,4
Morocco	7,8	46,4	13,8	1,8	10,2	28	8,1	46,6	8,3
Sweden	13	1,6	26,4	28,4	12,5	9,3	30,4	33,6	5,3
Syria	9,9	23,3	16,6	10,6	14,3	24,8	8	38,2	8,5
Turkey	35	40	2,5	17,5	21,2	6,9	15,2	49,7	4,2
United Kingdom	29,9	5,9	4,6	36,5	7,6	2,7	34,7	20,1	2,2

Base: All respondents, % Total. The Chart establishes a comparison among the 13 surveyed countries taking into account three values: family solidarity, curiosity and religious beliefs and presenting the perception that respondents have about people's priority values in other surveyed countries. Source: Chart developed by M. Tozy on the basis of the Anna Lindh / Gallup Poll 2010.

This indicator (children's education) can be useful for analysing discordances and convergences of values in the Euro-Mediterranean region. The report *EuroMed Intercultural Trends 2010* analyses the responses to the Euro-Mediterranean survey on intercultural trends (Anna-Lindh Foundation, 2010), which asks about the importance of values such as family solidarity and the role of religion. On the one hand, family solidarity, usually linked to traditional societies, receives heterogeneous responses and it is in societies in transition to modernity where this value is less appreciated (see table 1). The results related to religious values reflect a clear distinction between Europe and the southern and eastern Mediterranean, i.e., between the countries where religious socialisation stands out and still occupies a pre-eminent place in the regulatory system and in the definition of political legitimacies, and the countries that have experienced a process of secularisation involving the separation between the political and religious spheres. Nevertheless there is an ongoing process of secularisation in the South. The results for Egypt and Morocco (50% of responses consider religion is not the most important value to transmit) play down the role of religion as a solution for everything (Tozy, 2010). This secularisation process, more acute in the north and far more tenuous and complex in the south will also have its impact on food habits linked to the meeting between tradition and modernity (Charfi, 2008).

Chart 1 - Most important values to respondents when bringing up their children



Survey Question: In bringing up their children, parents in different societies may place different emphasis on different values. Assuming that we limit ourselves to six values only – let’s say: curiosity, obedience, religious beliefs, independence, respect for the other culture and family solidarity – I’d like to know which one of these six you would say are most important to you personally? And the second most important? Base: All respondents, % Total (© Anna Lindh / Gallup Poll 2010).

Source: *Fondation Anna-Lindh (2010)*.

Perception of similarities and shared values in the Mediterranean

“Among respondents from the southern and eastern Mediterranean, metropolitan residents and women also felt close to Europeans, while men and those living in a rural area and a small or middle-sized town and pensioners were more likely to stress the differences. Among European respondents, those aged 50-64, second-generation immigrants and those living in a small or medium-sized town thought that commonalities were bigger than differences, while first-generation immigrants, those aged 64 and older and respondents with “another” profession were more likely to feel that people from the southern and eastern Mediterranean were similar to them.

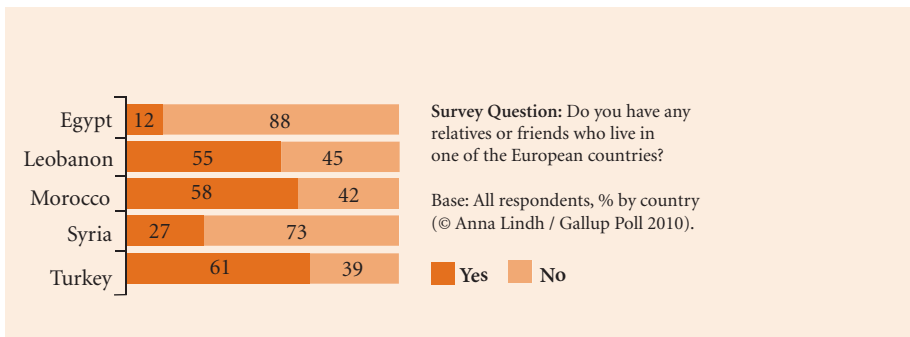
One of the aims of the Survey was also to find out whether values were shared or differed between respondents from European countries and those from the southern and eastern Mediterranean region. In order to find out more about respondents’ key values, Survey participants were read out a list and asked which of those values were the two most important to them in the upbringing of their children (respondents had to give their first priority and then the second). Results revealed clear differences in respondents’ key values between the southern and eastern Mediterranean and European countries. While religion was most important to respondents from the southern and eastern Mediterranean region, Europeans felt that “respect for other cultures” and “family solidarity” were the most important values they wanted to transmit to their children. Indeed, approximately six in ten respondents from the southern and eastern Mediterranean countries named religious beliefs as the first or second most important value in raising their children (62%), while less than one European respondent in six did so (14%).”

Source: *Manchin (2010)*.

Interactions in the Mediterranean: Tourism and Emigration

Contact between populations, between peoples from both sides of the Mediterranean, is also considered an important factor in introducing social changes and attitudes. As shown by the Chart 2, migration is one of these sources of interaction of people in the Mediterranean. For countries such as Turkey or Morocco, for which more than 80% of migrants live in EU countries, around 60% of respondents say they have relatives or friends living in one of the European countries (Anna-Lindh Foundation, 2010).

Chart 2 - Relatives or friends living in one European countries



Source : Fondation Anna-Lindh (2010).

As we will see later, the fact of having relatives or friends living in Europe does not mean that the communities of emigrated people definitively break with their origins. This phenomenon is identified based on the study of migration in post-industrial societies, taking into account the process of socially playing down the physical space, by which migrants adopt a migration behaviour of going away without completely leaving while maintaining fluid contact with other communities from the country of origin that are present in other states, thereby establishing cross-national relations (family, trade and cultural networks, etc.) with a great sociological impact both in the societies of origin and destination.

Another outstanding aspect is tourism, a mobility that eminently affects Europeans but with a great influence in all coastal countries and which basically affects contact between peoples and therefore cultures, despite not developing specific links between people from the two sides of the Mediterranean (Tozy, 2010).

A Globalised Production System

As previously noted, the change of values derived from the transition to modernity is being conditioned by the process of economic globalisation. Indeed, the globalised production of goods and services cannot escape this description of cross-over elements that must be present in the background of the subsequent analyses and descriptions. We are basically interested in their capacity to introduce changes, by bringing about important innovations in the distribution and availability of food products in the countries of the region.

It is important to bear in mind that globalisation is not an ideology but rather an objective process of structuring all economies, societies, institutions and cultures. Thus, it is worth recalling that “globalisation” does not mean that everything is an undifferentiated set of processes (Castells, 2005). We speak of globalisation, for example, in economics to refer to a type of economy that has the capacity to operate as a real time unit on a daily basis.

The economy at its core is global. It is interdependent and it is global in international trade, which occupies an increasingly more central and decisive place in worldwide economies; it is global in the production of goods and services, but not everything is global, only the heart of the economy is global. By way of illustration, most of the workforce is not global. Multinational companies and their auxiliary networks only employ around two hundred million workers. This seems a lot but, in fact, compared with a worldwide workforce of three thousand million, it is nothing. However, these two hundred million in these fifty-three thousand multinational companies represent 40% of the gross world product and two thirds of international trade. Therefore, what happens in this production system conditions all economies (Castells, 2005).

For the specific case of distribution and retail sales of foods, it has traditionally had distinct channels according to world regions. Shopping habits, income levels and lifestyles influence how retail sales are shaped in countries. Yet, the liberalisation of trade and the globalisation of financial markets and raw materials have initiated a process towards the convergence of the structure of distribution and sales in the food sector at a world level. This is clearly shown by the growing presence internationally of supermarkets and hypermarkets, often with multinational links operating through many countries.

Repercussions on lifestyles and food habits in Tunisia

The study *Food shopping transition: socio-economic characteristics and motivations associated with use of supermarkets in a North African urban environment*, published in 2010 and carried out in 2006 in the metropolitan area of the city of Tunis, aimed to identify the changes in the food distribution sector in a context of nutritional transition, based on observation of the socio-economic characteristics and changes in consumer's motivations in the use of different forms of distribution: large supermarkets (LSM), medium-sized supermarkets (MSM) and traditional outlets.

A third of homes surveyed shopped in LSMs, two thirds shopped in both LSMs and MSMs. Those who bought food in supermarkets (large or medium-sized) were of high socio-economic status while the users of LSMs have a higher income profile, often with stable incomes, and used credit cards to pay. For their part, users of traditional outlets were more urban and had higher levels of education. In general, most families preferred to shop in the neighbourhood grocery shops. Reasons given for shopping at different kinds of retail outlets were that the LSMs had a leisure basis, while arguments for shopping in the neighbourhood traditional outlet were proximity, loyalty and availability of credit (the latter even more for lower-income consumers).

The research results show a situation of transition in food shopping practices in a southern Mediterranean country, and should be considered in a context of growing inequal-

ities in health linked to the nutritional transition, as they differentiate use and motivation for the choice of supermarkets versus traditional food retailers according to socio-economic status.

Source: Tessier et al. (2010).

The current evolution of the global food industry is driven by the changes in consumers' preferences as well as the response of the food industry to these changes taking place at a local, national and global level (Regmi and Gehlhar, 2005).

The report *Mediterra 2008*² analysed in detail the evolution of consumption and food habits in the Mediterranean, the regional contrasts in the structure of food consumption, and the change in terms of food in northern Mediterranean countries, linked to economic development and urbanisation and the social changes that this process brings about. These changes are also influenced by the fact that the globalised economy means that traditional Mediterranean sectors have lost competitiveness to the benefit of agribusiness systems dominated by more prepared countries linked to the prevailing Anglo-Saxon model (Padilla, 2008). In the south, we have seen an increase in food imbalances, linked above all to the relative decrease of acquisitive power and the growth of social disparities (growth of rural poverty, emergence of underemployment, and so on). The purchasing power of families has been reduced with the rise in the price of basic agricultural foods, including cereals, which have a strategic scope in southern Mediterranean countries (Abis, 2011).

The centrality of the demographic transition in the Mediterranean

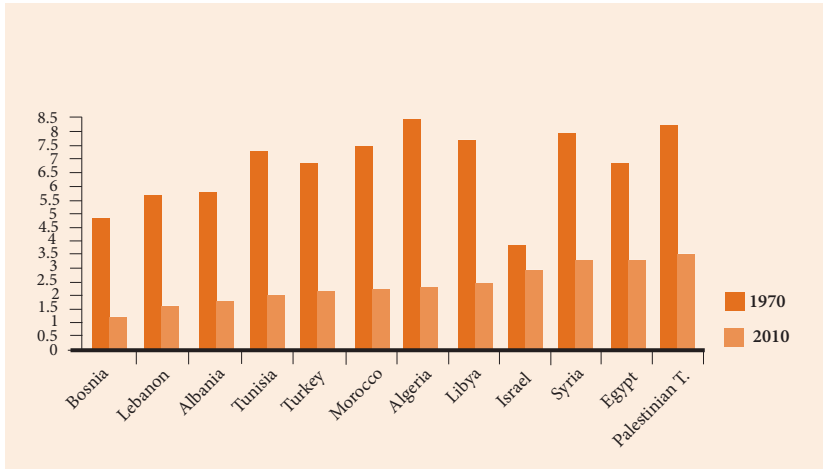
The demographic transition, one of the most important developments in the last 100 years, has brought about a profound transformation in the countries where it has taken place. Historically, the reduction of fertility rates resulted in profound social changes that later led to an acceleration of the rate of modernisation (Reher, 2009).

The extraordinary cultural revolution that started in Europe from the 18th century with the generalisation of birth control was the final result of the process of teaching men and then women to read, followed by the process of secularisation that had meant that procreation ceased to be linked to divine will to become the result of a rational calculation. Today, we are witnessing this process on the southern shore of the Mediterranean; a re-emergence of this cultural revolution but more compressed in time. In fact, the decrease in the birth rate (from eight children per woman to less than two), which in Europe took place gradually over two centuries, will take place in the southern Mediterranean in less than three decades (Courbage, 2009). Although we cannot see a homogeneous phenomenon for all regions, there is a common trend.

Thus, we can say that in the Mediterranean there is a broad consensus on the assertion that the demographic transition, despite having wide disparities and discontinuities

2 - Chapter 5, "Dietary Patterns and Trends in Consumption", in CIHEAM (2008).

Chart 3 - Demographic revolution in the Southern Mediterranean (1970-2010, fecundity index)



Source: Anna-Lindh Foundation (2010).

between different countries of the region, is converging towards a more or less similar scenario of moderate-low fertility and low mortality, with major gains in life expectancy (Courbage, 2009). The study of this development in the region must allow us to see the dimension of both the analogies and divergences between countries, and above all how far the demographic transition in the southern Mediterranean countries has produced and will produce the same social and economic change that emerged on the northern shore. Whatever the case, as Courbage (2009) indicates, understanding the demographic transition is a unavoidable phase for understanding society, as it reveals its doubts and certainties, the conflicts and dividing lines that cross it. The demographic transition can explain the relations between power and people, the advances and limits of national cohesion, and also the alienation or rapprochement of social groups.

Demographic transition and the role of women in society

The first and most fundamental of the changes that have taken place in the status of Arab women is the reproductive revolution. Although the demographic map of the Arab world continues to be heterogeneous in terms of the size and structure of its populations, in most Northern African and Middle Eastern countries there has been a marked decrease in fertility (number of children per woman). Throughout the last three or four decades, with diverse rhythms and intensities, from Morocco to Syria, fertility has been reduced to less than half, from average levels higher than six children in the 1970s to levels closer to two children per woman today. Literally, tens of millions of women have been able to decide on the number of children they desire, thereby exercising their reproductive rights and having access to a key liberty from which other rights and liberties emerge.

The reproductive revolution, eased by the access to better levels of health and education and the changes in mentalities deriving from the acceptance of new values in terms

of the role of women, inside and outside the family, are one of the two wings necessary for the emancipating flight of Arab women. The other wing, still in an incipient and minority phase, is access in equality of conditions and opportunities to full citizenship in economic, political, social and legal terms. The series of reports on Human Development in the Arab World, disseminated in the last decade despite the bold efforts at censorship and harassment of the authors by the prevailing autocratic governments in many Arab countries, have proved to be far-sighted and constitute an essential reference for the production of the roadmap of the pending reforms.

Source: Jiménez Araya (2009).

One of the most outstanding elements of the demographic transition and that will allow the development of the changes involved is the demographic dividend, which opens the door to the opportunity for economic development and transformed the societies that first experienced the demographic transition, and which in the case of the Mediterranean are the countries of northern Europe. This refers to the fact that the dynamics of transition lead to favourable age structures characterised by relatively low levels of dependent population and high levels of active population groups (Reher, 2009). However, the benefits of this “reproductive efficiency” that offers an optimum period for economic development are not unlimited and its duration depends on the historical and social context in which it begins.

Social factors that affect food consumption

In developed countries changes are not so linked to population or income growth. There are other important changes affecting food consumption patterns. Thus, for example, we can mention:

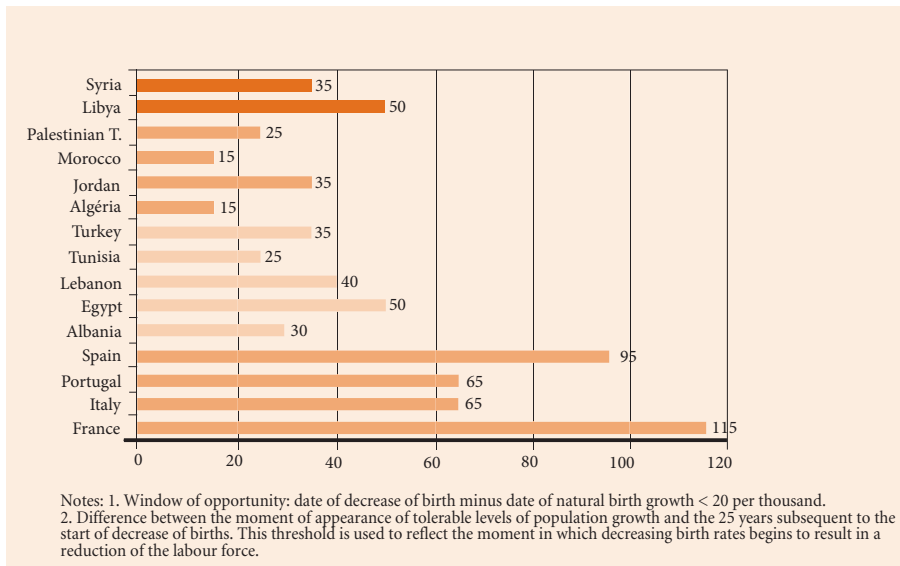
- *Ageing* in developed countries orients consumption towards products adapted to the needs of older people.
- The *incorporation of women in paid work* outside the home has modified the productive and social structure originating changes of diverse kinds. First, there is less time to shop and prepare food, which reduces the consumption of fresh products, fruit, vegetables, potatoes and other root vegetables and increases the demand for easy consumption products that contain more sugars, salt and fat.
- *Family sizes* have been reducing (1 or 2 children) and the number of single person homes have increased.
- *Working hours* also make it difficult for family members to eat together and increases food consumption outside the home. All these aspects result in an impoverished diet.
- *Concern over health*, both in terms of food safety and the effects of ingesting foods on the organism, also conditions the final choice of consumers.

Another factor of change is the arrival of *migrants from diverse origins*, cultures and religions who maintain the food customs of their countries. The rise in tourism, which facilitates familiarity with and acquisition of other culinary and gastronomic habits, has contributed to this factor.

Source: García Álvarez-Coque and López-García Usach (2009).

For the Mediterranean region, it is very important to bear in mind that the rapid rate of demographic transformation of the countries that started their own transformations more recently will not give them much margin for economic growth and social transformation. In fact, in these countries a rapid demographic growth coexists with a great predominance of a young population, which in the medium and long term can lead to abrupt ageing and the decline of the workforce. Therefore, we can affirm that for much of the region the period of opportunity that the demographic transition contributes to the process of social and economic modernisation in these countries will not be long-lasting (Reher, 2009).

Chart 4 - Window of opportunity¹ for a demographic dividend in the Mediterranean region (no. of years²)



Source: produced after Reher (2009).

Currently, we are seeing that the labour exclusion suffered by youths and women impedes taking advantage of the demographic dividend resulting from having the youngest and most numerous generation in history and is also impeding the historic incorporation of women in the public arena. This exclusion, which among youths and women reaches 80% of the population of Mediterranean Arab countries, runs the risk of intensifying their human development crisis in the near future, with consequences for social stability and emigration, given that nearly half of the young population expresses a desire to emigrate (Fergany, 2009).

The opportunity provided by the demographic transition can help overcome one of the main obstacles to development in the region deriving from the high demographic growth as continuing high fertility levels coincided with an anticipated decrease in mortality in general. This situation affected both the public decisions on the implementation of programmes and policies and individual and personal decisions as it limited the capacities of families, in what has been called “demographic tyranny” (Courbage, 2009).

The social changes linked to these processes also have a correlation with lifestyles, and the latter with food. Linked to this demographic transition, we must take into account the reduction in the size of homes. This reduction, accompanied by the transition to modernity, disseminates and changes the notion of coexistence in terms of meals, so that the availability of processed foods will be greater (Padilla, 2008).

Moreover, the rupture of intergenerational relations means that around a third of the population of the south (the under-20s) is exposed to the media and the effects of fashion, thereby being exposed to the ambiguity between modern diet and traditional diet, and changing consumer patterns to more modern practices (Padilla, 2008). This phenomenon is reproduced with the generalisation of the fact that youth tastes are increasingly formed outside the family nucleus “where food is simplified, industrialised and rarely reflects Mediterranean traditions” (Padilla, 2008). Thus, it has also been identified that the public presence of youth is territorialised; i.e., it is found in determined places such as the university, sports venues or McDonald’s, which contributes to the transformation of both youths and towns or neighbourhoods (Bennani-Chraïbi and Farag, 2007).

Migration flows in the Mediterranean region

At present, we must keep in mind that international migration is linked to the globalisation process. Current migration movements go beyond the migration models studied to date; i.e., permanent migration and temporary migration related to the search for work. When analysing migrants we must take into account new guidelines, such as their increasingly heterogeneous profile and the diversity of social and cultural backgrounds. Moreover, the development of transport widens temporary immigration and circular migration, which increasingly means that migrants are orienting their lives towards two or more societies, thereby developing cross-national communities. Consequently, we see how these trends are strengthening the informal organisation networks of migrants’ communities in different countries going beyond the logic of current borders.

Human Movements in a Complex Regional Framework

We might say that post-modernity has also reached international migration and, therefore, the study of its impact on both origin and destination societies is becoming increasingly complex. In this respect, it should be born in mind that in the 1980s the so-called world-systems theory was developed in which international migration is disassociated from the differences between labour markets in two countries or regions, arguing that the penetration of capitalist economic relations in peripheral and non-capitalist societies experienced since globalisation has created a mobile population that is prone to emigrate abroad. Moreover, this process will be accompanied by a series of links that ease these movements: either tangible links, such as the investment in peripheral economies accompanied by the creation of a transport and communications infrastructure that not only allows the movement of products, information and capital but also of people; or through intangible links, such as the cultural bonds established between developed countries and their areas of influence in developing countries, which often coincide with a colonial past.

We should examine whether in the destination and origin countries of the Euro-Mediterranean region migration movements are only related to a unidirectional physical displacement or to aspects linked to perpetuation, such as cross-nationalism (which brings us to the notion of simultaneous bonds) or social networks (which encourage the mobility of tangible and intangible assets).

Furthermore, the report of the Global Commission on International Migration pointed out a distinction at a global level between the north and the south with the aim of taking into account the regional differences and specificities taking place at the level of human movements. It also notes, faced with this geographic division, the existence of intermediate countries, such as Mexico, South Africa, Morocco and Egypt (GCIM, 2004). Finding two Mediterranean countries in this intermediate space between the north and the south poses the question of whether the Euro-Mediterranean area can be analysed as a migration system given that it is a point of intersection between the north and the south.

However, the complexity of migration flows in the region means that, beyond the analysis of North-South migration trends mainly from the Maghreb area and Turkey, we cannot ignore the diversity and complexity of the migration context in the Mediterranean: South-South flows (Algeria and Tunisia to Libya and the countries of the Persian Gulf or Egypt to the Persian Gulf); East-West flows (Balkans and Turkey to Western Europe). Direction and diversity of the migration are characterised by having elements common to migration movements at a world level: increasing feminisation, highly- and poorly-qualified labour immigration, new movements and networks, irregular trafficking of people, and the fact that the distinction between refugees, asylum seekers and illegal migrants is increasingly tenuous.

The Mediterranean has become a meeting point for this complexity, sharing emigration source areas, reception areas and transit areas of these flows, so some locations of the Mediterranean have become real exchange stations (Malta), waiting rooms (Tangier, Ceuta, Melilla), transit centres (Tamanrasset) or reception areas (coast of Almeria, Sicily, and so on.)³.

The current uprisings and political transitions underway have left an open scenario which suggests that, although in the short-term the main factor which can be altered is transit migration, whether because of the situation of irregular migrants in countries in full political transition or at war, in the long-term it will also be necessary to see whether democratic transitions in these countries have an effect on changes in their economies and whether this will decisively influence the decision to emigrate.

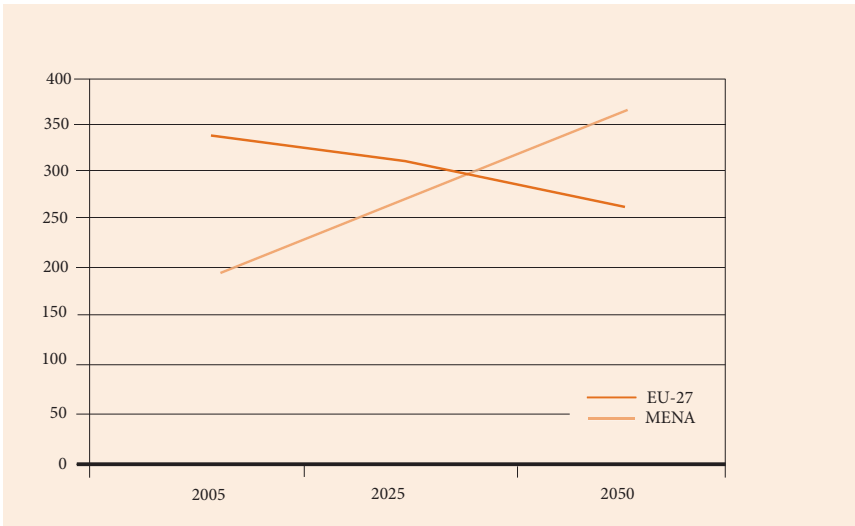
Labour Migration

The *unequal evolution of economic growth* experienced in recent decades currently shows an economically polarised region. Although in the past southern Mediterranean countries used to show great dispersion in terms of per capita income, there was a uniform gradation between the upper extreme (France) and lower extreme (Morocco) with a difference between per capita incomes, a scale with seven levels of countries with a differential between 25% and 45% from one level to the next (Esteban, 2002).

3 - Cf. map "Mediterranean Migration Routes", in Med 2006. Yearbook of the Mediterranean, Barcelona, IEMed-Fundació CIDOB, 2006 (<http://www.iemed.org/anuari/2006/mapes/aa19.pdf>).

In the late 1990s, northern and southern Mediterranean countries divided into two separate groups. The distance between extremes has widened: while the group of most developed countries has converged with its northern neighbours, the least developed southern Mediterranean countries have reduced their levels of per capita income. Thus, there are two groups of countries polarised in both extremes, very homogenous in themselves and highly heterogeneous with respect to the other group (Esteban, 2002). We can expect that such a trend will not provide a perspective of deceleration of migration in the short term given that, at present, socio-economic inequalities deriving from current economic globalisation (Castles, 2004) are one of the main driving forces of migration flows. Moreover, we should take into account the demographic complementarity between the two shores of the Mediterranean (Fargues, 2009). In this respect, while the northern shore has already overcome the demographic transition experiencing a fertility rate lower than the replacement rate, the southern shore, as we mentioned previously, still maintains an intermediate situation of demographic transition. At the same time, there will be a decrease in the labour force in the north (and general ageing) while in the south the labour force will surpass employment needs. This creates a situation of complementarity between the two shores, in which the south can provide the north with the labour force it will lack.

Chart 5 - Population age group 15-64: evolution in millions



Source: Eurostat (Europop 2004) EU-27 baseline scenario for the period 2005-2050 (Eurostat 2005). UN similar results: World Population Prospects (average variant), United Nation Population Division (2006), for the periode 2005-2050.

Despite the macro-economic data showing an economic growth in the region, this has not benefited all the segments of the labour market equally, with a high rate of precarious employment, increased informal work and emigration continuing as the first option for people who expect to find stable and formal work (Martín, 2009). Thus, both the salary differential and the informal character of the labour market result in emigration having become a structural factor of the labour markets in southern and eastern Mediterranean countries (Martín, 2009).

However, future migration models do not resemble those of the past or even the present. Always largely shaped by the labour market, demographic changes (see Chart 4) will alter the family profiles of young migrants in southern and eastern Mediterranean countries, which will experience very notable changes. We will pass from a model in which migrants left their families behind and went away with the aim of maintaining their family and educating their children and in which the sending of remittances became the key element of the migration project which, in its turn, envisaged a return. In future models, young migrants will leave without their wife and children and their objective will mainly focus on self-realisation (Fargues and Salinari, 2011), a new socioeconomic profile of migration that can also alter their relationship with the culture of origin and their potential to settle in host societies.

New Forms of Mobility in the Mediterranean: Circulatory Space and Cross-National Networks

It is clear that economic emigration to more industrialised and socio-economically advanced societies can finally, indirectly, become a factor of modernisation and economic development for the country, provided that salaried work undertaken by migrants abroad results in remittances, private investments and acquisition of higher personal skills levels for the society of origin.

This is why in the Mediterranean region today migrants must be seen as potential development agents who can contribute to strengthening the relations of cooperation between origin and host societies. Emigration can contribute to development through transfers of capital, investment and consumption and the introduction of new knowledge and entrepreneurial activities and can also contribute to democratisation and greater respect for human rights.

Diasporas: gateways for investment, entrepreneurship and innovation in the Mediterranean

Mobilisation of the highly-skilled diasporas is the new economic challenge for MED countries if they wish to accelerate their economic development in the context of globalisation. For most of the countries forming the MED region, it represents a “win-win” option, which could enable them to increase their sources of external revenues, to benefit from a multi-skilled human capital with a dual culture, and finally to attract more investment projects – initially modest but with a high added value and job prospects (ICT, renewable energy, agribusiness, etc.).

Source: Abdelkrim (2010).

Moreover, one of the characteristic features of Mediterranean migration is its immediate repercussions. A first repercussion is closely linked to the space, which we note as the first and most basic receiver of migration strategies. The migration project, related to a life project, involves leaving a territory to enter another; migrants develop their migration strategy in an environment, in a community, within a determined space to which they will adapt while, at the same time, helping to redefine it.

This redefinition of the space can be analysed based on what several authors (Martiniello, 2003) define as “intermediate spaces between the individual and the abstract nation

organised into a state” in the sense that the presence of different identities and cultures within the same state framework conceived for a homogenous reality reveals the challenge of producing a cultural diversity management model adapted to its population and history with the aim of being able to conciliate multiculturalism and social and political cohesion. However, we should add to this the phenomenon which has been identified as cross-nationalism (Bauböck, 2003), by which communities of immigrated people do not definitively break with their environments of origin. This phenomenon, identified based on the study of migration in post-industrial societies (Aparicio, 2002), looks at the social playing down of the physical space, by which immigrants incorporate a migration conduct of going away without completely leaving while keeping fluid contact with other communities from the source country present in other states, establishing cross-national relations (family, trade, cultural networks, among others) that go beyond the spheres of national sovereignty, mainly bearing in mind the production of immigration policies.

The study of this phenomenon leads us to talk of cross-national territories or circulatory spaces, which depend on the networks created by social groups from immigration based on continuing with habits and norms, with a specific social ethics and that finally establish their own delimitations, thereby creating what is known as “moral regions” of a supra-state dimension that coexist in host societies structured following a nation-state logic (Tarrus, 2003) .

In fact, these circulatory spaces interlink several cities throughout Europe. Cities, as analysed by Saskia Sassen (2002), have a new centrality in current globalisation. In parallel to the weakening of the state’s political space, the “policy of place” emerges at an urban level, by which citizens become political actors more notably than at a state level. The globalised city allows immigration to be present in new spaces that emerge based on the destabilisation of formal power structures, thereby becoming new active actors strengthening the relations of mutual influences established between source and host societies.

Immigration and evolution of food patterns

Migrants, of different backgrounds, have potentially had to adapt their diet, for diverse reasons, although on some occasions they try to continue with techniques used in their countries of origin – some Muslims bake bread in ovens specifically taken from Morocco –, do not change determined ingredients – there are increasingly more supply networks of food products of origin or migrants bring food from their countries – or even buy dishes from their countries in packets or pre-cooked, which are sold in specialist shops.

The increase of migrants is not only patent in the density of population but also results in an enrichment and mixing which is not only perceived at a social or cultural level: the presence of migrants leads to the introduction of new food habits, has an effect on the food habits of the host country and this is reflected in the Spanish market for ethnic products. Moreover, in gastronomy new flavours, smells and potential benefits for our diet, until now unknown, are emerging. Products that today we consider exotic are being gradually introduced into the national market and, within a few years, may be ingredients common to the Spanish diet, as has historically happened with many other products, such as the potato or the tomato, now a staple of our diet. It is increasingly easy to find on the market food from Central and South American gastronomy, such as the yucca or manioc, the plantain and tropical fruits such as the avocado, the mango,

papaya, and coconut. In relation to the Asian market, there is a large variety of fruits such as rambutan, litchi, pitahaya, mangosteen and kumquat, condiments such as curry, soya and its derivatives (tamari, miso, tofu). From the north of Africa, the use of cous-cous is increasingly common and, from Eastern Europe, kebabs, original from Turkey, which in Spain are a new form of fast food, as one of the aspects in which ethnic food is having a great influence in catering.

Source: *Ministerio de Medio Ambiente y Medio Rural y Marino (2009)*.

For instance, the consolidation of migrants' associations in host countries makes them new actors that carry out influential work at the level of settlement while being an example of the dynamism of these groups. Their role as interlocutors is notable, both because they are members of associations in the host country and the influence they can have in their source country and also because they are potential development actors at an economic level and in terms of introducing democratising dynamics.

Thus, current Maghrebian immigration in Europe has become a key to building "new spaces" between the source and host countries, developing new forms of exchange, cooperation and participation of the migrant population between them: migrants play a role as actors in the development of their source country while becoming a factor of change in the social, economic and cultural fields in the destination country.

This phenomenon applied to food habits shows us that in urban environments young people with an immigration background act as a link between the food culture of the country where they live and that of their families⁴. The influence of the source culture among teenagers is ambivalent; for instance, in the case of Muslim teenagers in France, they adopt, reject or reinterpret the food rules related to religious principles. The refusal to eat food other than *halal*, a rather recent phenomenon in expansion, would be an example of this. However, food habits are reinterpreted with the appearance of the *halal* burger as an adaptation to fast food, a reinterpretation of traditional food with a westernised format.

In Spain, which has a more recent migration model, the family environment still plays a fundamental role when observing food prohibitions. The non-observance of these types of rules is an unequivocal symptom of the members of a determined community suffering a gradual secularisation process. This fact is most acute with youths, among whom the consumption of alcohol in bars is increasingly common, almost always outside the family core. Faced with this, the community reacts by intensifying the task of counter-secularisation (mainly based on two mechanisms: control and proselytism) over its believers (Garreta Bochaca, 2000)⁵.

4 - "Alimentation des adolescents d'aujourd'hui", Alimentation, santé et petit budget, 47, October 2009 (review of Centre de Recherche et d'Information Nutritionnelles [CERIN]).

5 - Cf. map "Foreigners from the MEDA-10 countries resident in the EU (2000-2007)", in Med 2008. Yearbook of the Mediterranean, Barcelona, IEMed-Fundació CIDOB, 2008 (<http://www.iemed.org/anuari/2008/amapes/a15.pdf>).

Migration Faced with the Uprisings in the Southern Mediterranean

In relation to the impact of the uprisings on regional migration flows, in the mid-term it remains to be seen how the situation in Libya will end as it was the only southern country to receive immigration, mainly linked to the oil industry and the direction of the flows from southern Sahara heading to Libya or through Libya en route to Europe. A probable consequence is that these flows will move towards the West and that the Algeria-Morocco corridor and also the route to the Atlantic coast will re-emerge strongly; in both cases this may mean that precarious crossings will start again. Alternatively, the route towards the East heading to the border between Turkey and Greece may also experience a growth in the numbers of people. However, the Libyan regime's lack of transparency prevents us from knowing for certain the level of irregular Subsaharan migration to or through Libya.

Finally, we should not forget that, although in the short term the main factor that can be altered is transit migration, it will be necessary to see whether democratic transitions can have an effect on changes in the economies of the countries involved and whether the end of despotism and generalised corruption will allow the development of economies capable of generating future expectations that will influence the decision to emigrate.

The evolution of these aspects will determine for the time being the change of the migration system in the Maghreb and Egypt. However, there is still the risk that the uprisings are not capable of crystallising win-win changes and altering and transforming in the mid and long term the main reasons why people decide to emigrate, i.e., a labour market that offers real opportunities to integrate into the labour world and have a decent professional future. Otherwise, the migration flow to the north will continue and could even increase.

Remittances

The impact of money remittances that move between the two sides of the Mediterranean will also have an important role in the modernisation and change of consumption habits. Capital transfers made by migrants, which had been traditionally considered of little relevance and mainly aimed at personal consumption, can have a not insignificant impact on notable socioeconomic changes as well as contributing to the reduction of poverty.

From this point of view, migration largely influences family strategies as a whole as well as changes in the family structure itself. Mobility introduces changes and tensions between modernity and tradition in the family structure: whether because of the new role of women as head of the family when the husband migrates (remittance management) or because of the initiative of a growing number of women who opt to migrate alone in search of work abroad (sending of remittances)⁶.

FEMIP (Facility for Euro-Mediterranean Investment and Partnership) of the European Investment Bank emphasises the importance of the corridor between the EU and EMP third countries. Specifically, between 85% and 90% of the remittances sent by migrants to the three Maghreb countries and Turkey comes from the EU.

6 - Cf. map "Migrant Remittances", 2007 », in Med 2009. Yearbook of the Mediterranean, Barcelona, IEMed-Fundació CIDOB, 2009 (<http://www.iemed.org/anuari/2009/amapes/a303.pdf>).

Taking into account the relation between the number of migrants from a determined country and the volume of remittances sent, FEMIP has identified the main corridors of remittances between the EU and southern Mediterranean countries. The Spain-Morocco corridor is now added to the traditional corridors (France-Algeria, France-Morocco or Germany-Turkey) as the absolute number of remittances sent and their specific importance has notably increased.

Only with specific research on the countries in the region can we further explore their use and, consequently, the impact they can have at the level of socioeconomic changes.

In the case of Morocco, for instance, Moroccans' transfers have a notable impact at an economic level (agricultural development, reduction of poverty) and at a cultural level (changes in the family structure). At the level of the agricultural sector there is no unanimity when assessing the effect of transfers (Nyberg Sørensen, 2004). On the one hand, we see that the investment priorities of migrants have focused more on the creation of small-sized businesses rather than on agricultural investment. On the other, migrants' investments have modernised certain traditional crops. In this respect, it is necessary to examine in depth the interaction between emigration and agricultural transformation in Morocco.

Studies indicate that family income from remittances has helped reduce poverty from 23.2% of the population to 19%. This means that 1.2 million people have emerged from poverty thanks to the contributions sent by their migrant relatives (Khachani, 2006).

Conclusion

In order to briefly describe the mutations that have taken place in Euro-Mediterranean societies, we started from the analysis of the evolution of traditional values towards post-modern values as well as the globalised production system. These are elements explaining changes in mentalities (secularisation vs. religious values), future expectations (labour market, social breakdown), intergenerational relations (family solidarity) and gender relations (reproductive revolution), the role of women in society (emancipation) and interrelations with the rest of the world (tourism and migrations). In short, elements that will have an effect on lifestyles and, consequently, on the evolution of food and consumption habits (westernisation of the Mediterranean Diet and growing food imbalances).

One of the most outstanding elements is the ongoing clash between modernity and tradition, with its effects both on the public and private spheres and which will be visible in lifestyles and food habits. This process is complemented by globalisation, which often determines this confrontation. Globalisation of the economic field has introduced changes: specifically, a process of convergence of the distribution and retail sales structure of the food sector in parallel with the fact that globalised economy means that traditional Mediterranean sectors have lost competitiveness to the benefit of agribusiness systems dominated by better prepared countries linked to the prevailing Anglo-Saxon model. Thus, a new form of distribution and sales will be introduced, increasing the availability of determined food products leading to a loss of the Mediterranean food structure in northern countries and notable food imbalances in southern countries.

One of the intangibles that have an effect on this scenario of confrontation will be values, understood as collective preferences that make reference to ways of being, thinking or acting as a group. The autonomy of the individual and the role of religion in society undoubtedly have an influence on this scenario of mutation of lifestyles.

Demographic transition, a driving force of modernisation, secularisation and cultural change, also has a relevant role. In the case of the Mediterranean region, it must be taken into account that the rapid pace of demographic transformation of the southern countries that recently began their own transformations will not have the time margin for economic growth and social transformation as happened with their northern neighbours. In fact, in these countries, a rapid demographic growth coexists with a great predominance of young people, which can lead in the mid and long term to abrupt ageing and the reduction of the workforce provision. Thus, it is possible to affirm that, for a large part of the region, the period of opportunity provided by demographic transition to contribute to the process of social and economic modernisation in these countries will surely not be long-lasting.

These mutations also have exogenous reasons; specifically, the interrelations that human movements involve in the region, mainly tourism and migration. Both processes, led by people, will bring about mutual awareness, reciprocal contact and, in the case of migration, a capacity of interlocution between source and host countries. Moreover, the influence that they can have on the source country as they are potential actors of change, both at an economic level and at the level of the introduction of democratising, cultural and social dynamics is notable. The organisation of these migration spaces around cross-national communities and the economic potential of the monetary (and also intangible) flows are elements that should also be taken into consideration in the process of mutation of Mediterranean societies.

Finally, the scenario of structural change brought about by the wave of uprisings and revolutions still active in the southern Mediterranean remains open. Some of the key factors in this analysis are youth and the labour market, economic reactivation and overcoming social disparities, and aligning modern and traditional values adapted to the new protagonists of society such as women and youths.

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THE MEDITERRANEAN DIET: CONSUMPTION, CUISINE AND FOOD HABITS

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The nomination of the Mediterranean Diet as Intangible Cultural Heritage of Humanity is both a challenge and a great responsibility for the countries who have submitted the proposal. Promoting the Mediterranean Diet is an endeavour for administrations, but also for consumers. In the pages to come I will reflect upon its cultural values in connection with food consumption and within the context of a number of activities which shape the question of food. Special attention will be paid to the way food habits undergo changes in consumption patterns, taking into consideration how they are created and how they have developed over the course of history, as well as territorial, socio-economic, ethnical, religious and gender differences. The development of Mediterranean culinary typologies and cuisines is also of significance, as is the role played by trade routes and markets in changing consumption patterns.

However, such a rich and complex legacy is difficult to characterize and disseminate. Everybody talks about the Mediterranean Diet but, why does UNESCO consider it an Intangible Cultural Heritage of Urgent Safeguarding? and how should this heritage be preserved? What ideas and attitudes should be conveyed to consumers? This article is an attempt to make headway in this direction, facilitating the understanding of this message so that the bequest values of the Mediterranean Diet, in this case, can be better understood and promoted.

The Mediterranean Diet: reality and prospects of a worthy challenge

In 2010 the Mediterranean Diet was awarded Intangible Cultural Heritage of Humanity status by UNESCO. Long before this statement was made public, associations, administrators, technicians and researchers from Spain, Morocco, Italy and Greece, led by the Mediterranean Diet Foundation, had worked together to submit an efficacious and consistent nomination (González Turmo and Mataix Verdú, 2008). Nevertheless, we still have a long way to go. This nomination cannot stand as a mere brandname that can be attached to food products, events and publications. There is much more at stake.

Mankind has to reflect upon the future of its food. This must be done out of respect for biological and cultural diversity, and in defence of a culinary built forged over the centuries. The culinary nominations inscribed (Mediterranean Diet, the Gastronomic Meal of the French and the Traditional Mexican Cuisine) must rise to this future challenge.

The term Mediterranean Diet derives from the Greek *diáita*: way of life, connection between the spirit, the body and the surrounding environment¹. It is not only a nutritional model, but a phenomenon encompassing food production, marketing, consumption, conviviality, ritual and symbology of the Mediterranean, as well as Mediterranean cuisines and foods (González Turmo and Romero de Solís, 1993 and 1997; Medina, 1996; Cresta and Teti, 1998; Teti, 2002; Padilla, Aubaile-Sallenave and Oberti, 2004). Thus, tackling the issue of food consumption in the Mediterranean means considering it as a practice that cannot be regarded in isolation from the rest of the activities which constitute the food event. Consumption, as part of the Mediterranean Diet, cannot be separated from production, or social and cultural habits and styles which have been built historically around food and nutrition. Hence the dissemination of the Mediterranean Diet as a concept that embraces biodiversity, sustainability, quality, health and cultural heritage.

This is the message that consumers should receive. Their simple daily choice affects producers, distributors and the food legacy they have inherited and could preserve. Those responsible for disseminating the Mediterranean Diet as Intangible Cultural Heritage ought to tell the different administrations, media, producers and consumers about the active role they have to perform in preserving the Mediterranean Diet; a threatened heritage. Safeguarding food habits could and should be the driving force behind conscious and responsible consumption.

Mediterranean consumers: on shortages and the taste for diversity

With a view to reflecting upon recent changes in food consumption in the Mediterranean, the present section will first of all deal with the forging of food habits during the second half of the 20th century, which constitutes the origins of these changes². But writing about recent transformations in Mediterranean food customs is complex. First of all, because quantitative information is not available from all Mediterranean countries and it is thus impossible to conduct a comparative analysis. Secondly, because qualitative research does not offer sufficient consistency in theme, time and space. There are many more studies on rituals and festivities than on everyday food habits and these were part of the research work carried out during the first third of the 20th century. They were only revisited at the end of the century and focused on some specific territories of Morocco, Algeria, Lebanon, Italy and the Southeast of France and Spain (González Turmo, 2001). Nevertheless, there are indications that Mediterraneans have shared not

1 - Anthropologists have worked on Mediterranean Food and Diet, distinguishing both concepts. However, when the nomination was submitted to UNESCO, the second concept was selected, which was more commonly used by nutritionists up to that moment.

2 - It is not necessary to dwell on the fact that those changes are not taking place simultaneously or in the same way across the Mediterranean nor do they involve all groups of foods equally or food habits in general.

only foods but market networks, selling systems, eating patterns, cookery systems and types, and part of their food structure³. On the contrary, cuisines are diverse, as is the choice of specific foods brought to the table and, of course, the way the Mediterranean peoples have adapted to globalization-driven food changes. The trend is towards more varied diets and to a decrease in the biological and cultural diversity of the diet. In order to analyse how the existing habits are influenced by these changes, it is essential to make a brief introduction to the food history of Mediterraneans.

The shortage of resources has prompted communication amongst Mediterraneans and the construction of a food style that has adapted and transformed plants coming from remote places. Their food habits are excellent examples of the fertile combination of production and commercial activities that has shaped the history of mankind. Thus, few Mediterranean dishes can be imagined without such exchange. If we think about some of the most famous examples, it is evident that they have only existed thanks to the Mediterraneans' eagerness to broaden the horizons of their diet. This is the case of the Greek *moussaka* (aubergines and meat), the Maghrebi *harira* (tomato and vegetable soup), the *hummus*, a dish shared by Arabs and Jews (chickpea and sesame spread), the Egyptian *falafel* (bean fritters), the Turkish *dolmathakia* (rice-stuffed grape leaves), the Italian *pesto* (basil sauce), the French *bouillabaisse* (fish and tomato stew) or the Spanish *pisto* (vegetable *ratatouille*) and rice dishes. Their names recall the taste of Mediterranean cuisines; but this taste is the result of combining ingredients and spices that did not exist until they reached, at a given moment in history, the big larder of the Mediterranean and became part of its long history of adaptation (Abdelkader, 1998; Chomski, 2010).

The Mediterranean has been a permanent laboratory for mankind to show the ability to adapt and disseminate foods. However, despite a long list of shared foods, the Mediterranean is a plural and diverse world, and its food habits could not be otherwise. The inhabitants of the Mediterranean have built their food style through interaction, either by disseminating and accepting habits, or by defining their own habits as opposed to those coming from the other side of the basin. In a world that has experienced interculturality for thousands of years, defending one's own views has at times involved stigmatizing the others', and rivals have lived by the same sea, in the same region and even in the same village. Closeness and opposition are, thus, the two complementary sides of Mediterranean cultures, but also of their diets. Environment, history, foods, knowledge and significance are all shared. But the result on the palate, the meal which results from this culinary mediation, is set to represent the rich plurality of Mediterranean cultures.

The case of cereals

This diversity in food processing, manufacturing and consumption can be illustrated with the case of grains and fats (even when dealing with shared species, varieties and processed products). Up until recent decades the staple ingredients for most Mediterraneans were cereals, mainly wheat, but also barley, rye, millet and spelt; legumes – beans, chickpeas, broad beans and lentils – and nuts; and as secondary ingredients, few meats, mainly goat and lamb, fish on the coast and a wide range of vegetables, most of which were imported. The diet was mainly structured around two poles of unequal

3 - Meaning that food structure is constituted by the interaction of the seasonal cycle, distribution of daily meals, special occasions, daily distribution –breakfast, lunch, tea and supper– and the order in which dishes are served.

importance: on the one hand, cereals, legumes and nuts; and, on the other, what was called in the classical world an *opsa* and later, *companage* or *companático*: what accompanies and makes cereals palatable (meats, fish, dairy products, greens, vegetables and even aromatic herbs). Until the second half of the 20th century, the Neapolitan *companático* and the *companage* of some Spanish regions referred to the food that farmers and day labourers took with them to the fields: bacon, sardines, cheese, olives, onions, something to flavour bread with. The gradual increase in car use and, thus, the possibility for farm workers to return home from the fields on the same day, has ended this diet variant of Mediterranean populations.

In any event, most Mediterraneans have been eating cereals for thousands of years and they have devised many ways to consume them: from bread, either leavened or unleavened, brown or white, dry or freshly baked, soups, porridge and stews, made with the grain or with meal, to semolina, pearls, sheets and pastas. All in all, crushed, kneaded or bound, sometimes fermented, and dried, baked, cooked or fried cereals. This is the origin of a long-standing tradition of bread and meal-based cuisine which still survives in breads, semolinas, sheets, porridge and pastas. The Italian *polenta*, the Roman *mammaligha* and the Spanish *gachas*, which in the past were a poor man's food, are now desserts served at restaurants, reminiscent of porridges, stews and doughs made of water, cereal grains and salt which already existed in the classical world⁴. The Turkish *trachaná*s, the farmers' morning meal, and the Pontian *Tarhana*, toasted wheat grains, crushed and kneaded in oil, cheese or curd, in the form of semolina or larger balls, dried in the sun and consumed in soups or with dairy products, reminiscent of the Byzantine *tracta*. The Balkan *turkhana* and the Serbian *tar(h)ana* can also be considered part of the same family. They are all procedures that have made the preservation and transport of cereal products possible and frequently in areas where shepherding was a common practice. The same applies to the *burgul*, introduced in the Maghreb by the Turks, and semolina, so widely used in North Africa and already present in Cato's celebrated *placenta*, made of semolina, cheese and honey. The *tracta* by the Roman Apicius, which sometimes has been mistaken as the origin of the Italian pasta, is similar to the current Tunisian *brik* or the Atlas *brik*. The same type of pasta sheet is used in the case of the Greek *phyllo*, a spread which coincides exactly with that of the Ottoman Empire. And the Greek, Turkish or Yugoslavian *paklavas*, all of them eastern (rather than Roman) variants of pasta which have resulted in a Mediterranean culinary tradition strongly based on cereals (Blanc and Nercessian, 1994; Balca Hill and Bryer, 1995; García Sánchez, 1997; González Turmo, 2005).

Likewise, eating *hasu* or *haswa*, a soup made of flour and water, oil and salt, has been a common practice in North Africa since pre-colonization times; but also *hasid*, made with water, barley flour, and oil or milk, and *asida*, consumed by people at Dades. Bedouines have eaten *bziza*, based on flour, water and oil, spices and acorns, besides *askif*, *taruait* and *tagulla*, made with coarse flour or *agurn* and *taharit*, made with fine flour; lastly, *couscous* from the Berbers (so well-known in Europe), which was prepared with sorghum rather than with wheat and was not an everyday food up until the second half of the 20th century. Thus, cereals have been the staple food in the northern

⁴ - Cereals –wheat, barley, oats, rye and millet– were the nutritional base of the Middle East and Ancient Egypt, where the *Olyra*, a kind of tetraploid wheat, which survived Greek and Roman colonization, was consumed across the eastern Mediterranean for centuries. It was used for making bread and also a kind of porridge, stew or dough, with water, grain and salt.

Mediterranean until the past four decades and they are still so in a large area of the South and East. This is the case of Morocco, where many women still start their morning by kneading and cereals are part of all meals, either in the form of cakes, semolina, pasta or grains (González Turmo, El Ouardani and El Aallali, 2007).

All in all, cereal consumption, particularly wheat, has characterized the Mediterranean, but its distribution has been neither regular nor permanent. On the contrary, self-sufficiency and cereal trade have coexisted and alternated. In the Modern and Contemporary Ages the scope of the cereal trade increased with the growth of the cities, whose supply from the hinterland had become insufficient. Shipping enabled wheat consumption in large and well-connected cities (Anes Alvarez *et al.*, 1978). But we should not forget that it was not until around the middle of the 18th century in Europe, specifically in France, that a cereal market control model was set up, which later would be extended to other countries, including Spain. Until that moment there were some agro-food policies, but they were poorly coordinated and unable to correct the market. It was in the 19th century when conditions were appropriate for the movement of cereals within each State, and transportation was improved so that wheat could be brought from the United States at cheaper prices than locally. However, even so, until well into the 20th century, the Southern European countries obtained three times less wheat per hectare than those from the North. Prices were high and diets were deficient. This did not prevent cereals from being the staple food of the Mediterraneans up until the second half of the 20th century, when its consumption started to decrease as the world's surplus market consolidated (Simpson, 1997).

Fat consumption

Another case is that of fats. The recent popularity of the Mediterranean Diet nutritional model has contributed to identify the Mediterranean with a single fat: olive oil. According to some authors, it is true that the expansion of olive cultivation marks out the limits of the Mediterranean ecosystem (Braudel, 1988 and 1997). It is also true that its consumption dates back to ancient times and that the Classical World spread many of its uses. Oil has been used for cooking since Classical times to preserve, cook, marinate and fry, all of them procedures that have characterized a culinary tradition which still persists today. It is less obvious that this was the most commonly used fat (Flandrin, 1984; Flandrin and Montanari, 1996). Even though olive growing has had such a long-standing tradition and was established so early, neither olives nor vines have played such a constant role in the Mediterranean as cereals. Furthermore: olive oil has been a minority fat in many times and regions of the Mediterranean. Its presence or shortage originated different cuisines, diverse flavours and smells, but did not result in differentiated culinary systems⁵. Its role has been to complement cereals, to bind vegetables, legumes and meats; a fundamental role, if we consider to what extent fats add character to the cuisine, but, in any case they could be replaced and, in the worst of cases, avoided.

The importance of religions has frequently been claimed as the origin of the differences in fat consumption among Mediterraneans. The Jewish and Islamic precepts regarding

5 - Since the diet systems have been defined as a set of ingredients, species and procedures shared in a given historical and territorial context, the change in an element does not mean the existence of a differentiated system.

pork consumption have marked diet boundaries. Likewise, among Catholics, the increase in the number of fasting and abstinence days to one hundred and eighty, after Trent, meant the demarcation of the calendar into lean days, where only oil was authorized, and meat days, where lard and fat prevailed. But, without neglecting the importance of religion as a prescriber of food habits, precepts should be taken for what they are: proposed behaviours, which do not involve automatic compliance or homogeneous behaviour among the faithful of the same religion⁶.

Thus, oil and lard consumption in the Mediterranean has not been characterized by religious criteria alone. The production specialization in each county and region has played a fundamental role in shaping the taste of their inhabitants and the development of different traditional cuisines. Thus, the unmistakable production and commercial reality overlaps the precept. Likewise, this does not mean that there has been an evolution from oil consumption in classical times towards lard, oil and butter later, according to the religion and time of the year. Reality is much more complex: in the North Mediterranean cooking was done with butter, lard or oil, depending on the time and place and precepts yielded by the market and the land. Muslims alternated the use of different fats: since the time of the Prophet, butter was used in Arabia to cook the *asida*, and in pre-colonial times, inhabitants of the Western High Atlas used argan oil, or milk and donkey butter to make the *hasid* (Rosenberger, 1994). This indistinct use of fats was also common in the preparation of *couscous* and it is still prevalent in Lebanon, where peasant women cook both with olive oil and clarified butter (Kanafani-Zahar, 1993). On the other hand, both in the North and in the South, sunflower oil is the preferred fat among the low-income population (González Turmo, El Ouardani and El Aallali, 2007).

Dependency on fat consumption with respect to local production is tightly linked to the uneven and limited historical scope of the oil market. Although Rome was supplied with oil from the Hispania Baetica and during the Middle Ages its scope reached the Baltic, this does not mean that Swedes cooked with oil or even that most Mediterraneans did. In fact, the Catholic Church was aware of the difficulties faced by the inhabitants of non-producing regions to obtain olive oil and authorized them to use butter during the abstinence period. Olive oil was not systematically exported until the 19th century –towards England and the canning industry in Brittany– or even the 20th century. Suffice it to consider that during the 20th century Andalusia has produced 80% of the total Mediterranean production and 90% of the Spanish production, considering only the cultivated surface area; because volume-wise, the proportion would be greater. So, until well into the 20th century the only ports that had channelled exports were Seville and Malaga. On the one hand because Franco's dictatorship applied a restrictive policy and, on the other, because its dietary use was not appreciated in non-Mediterranean Europe, although the American market did absorb the surplus. It was not until well into the 20th century, with the spread of the nutritional model of the Mediterranean Diet, that olive oil has been valued. This appreciation has encouraged consumption within and beyond the Mediterranean, even though it is not the most commonly used fat at present, even in Andalusia, the main producer of olive oil (Mataix Verdú and Barbancho, 2008). Hence, even the consumption of the most characteristic food products

6 - The transgression of rules can be even as frequent as compliance; and not because of scepticism, but out of pure ignorance, especially when the rules were complex and changed throughout history, as is the case with Catholics.

of the Mediterranean has been subject to the constraints of the market radius and to the social and cultural complexity of a diverse world. This diversity and wealth can also be verified through the analysis of its cuisines.

Mediterranean cuisine

The analysis of cuisine is not unwarranted, especially in the Mediterranean where most of the food is cooked. Before consumption, food undergoes a culinary elaboration, which becomes a filter that enhances the acceptance of new foods as well as a mechanism by which a common heritage can be established. The analysis of cuisine enables us to understand the multidimensionality of food consumption. It is in the kitchen where the inertias of the other patrimonial aspects of the Mediterranean Diet converge. Different approaches to the study of cuisine make analysis difficult. It is hard to understand how and why some practices have developed and others have not. They are often disseminated as part of a collection of typical recipes: Italian cuisine is thus characterized by pastas and pizzas and Morocco is known for couscous, *Pastila* and *Tayin*, etc. This procedure, besides being arbitrary, both simplifies and impoverishes a reality that is neither simple nor poor. At the same time, it prevents us from taking an objective view of the features that have historically created each cuisine and from analysing their relationship with others. Cuisine can barely be understood beyond stereotypes if the relative roles of the ingredients, condiments and culinary procedures in the evolution and formation of this cuisine are not broken down and considered one by one⁷. The route we should take to examine and compare cuisines takes the opposite direction: we should begin by analysing the culinary system, then go on to look into the typologies and cuisines and, finally, consider their elaboration, which is, in fact, what we eat.

Culinary maps and the Mediterranean system

Culinary systems are combinations of ingredients, condiments and procedures that lie within a common historical and territorial context. They can be distinguished by two criteria: whether grain is a staple ingredient or not is a feature that differentiates a large part of the population that has eaten cereals and pulses for centuries, from a minority or elite (depending on each historical and territorial context), who have hardly tasted this cereal, except for minimum rations and in their richest and most refined varieties. Besides this horizontal dividing line, within this vast majority of cereal consumers, a second criterion distinguishes them according to the cereal or groups of cereals they consume and other accompanying ingredients, condiments and procedures. It is here where the differences of the Mediterranean culinary system lie (González Turmo, 2005).

The Mediterranean culinary system has been defined through the following group of ingredients, condiments and procedures: as a staple, the cereals, especially wheat, but also barley, rye, millet and spelt, and pulses: beans, chickpeas, broad beans and lentils; among the secondary ingredients, few meats, especially lamb and kid meat, fish on the coast and a wide range of vegetables and fruits mostly imported throughout history. As condiments, among the fats, olive oil, suet and lard –from the culinary and not the nutritional point of view as fats are a condiment– and a long list of aromatic herbs and

7 - We talk of procedures, not techniques or recipes, because we refer to methods, not fixed knowledge, that popular cuisines use following oral tradition, observation and improvisation.

spices, including thyme, oregano, rosemary, cumin, coriander, rue, basil, parsley, mint, nutmeg, pepper, saffron, clove and cinnamon. And to conclude, these procedures: baking, basting, battering, beating, boiling, browning, coating with breadcrumbs, condimenting, crushing, cutting, filling, frying, grating, grilling au gratin, kneading, light frying, macerating, marinating, mincing, misting, puff pastry, ripening, roasting, rolling out, rolling, seasoning, sieving, slicing, spreading, sprinkling, stewing and stuffing (Aubaile-Sallenave, 1996; González Turmo and Mataix Verdú, 2008).

Distribution has not been homogeneous throughout the history of such an extensive world. Not all inhabitants of the Mediterranean have eaten the same in every period of history, not even repeated combinations such as bread, garlic and oil. Countless mixtures can be made from elements that define the Mediterranean culinary system. This diversity arises through variables such as social structure, ethnic group, occupation, gender and religion. Mediterranean people belong to different social classes. They are emigrants or autochthonous peoples; Armenian, Arab, Berber, Turkish; peasants, craftsmen, seafarers, shepherds; men and women; and furthermore, Jews, Christians or Muslims. The food identities that each of these variables can generate seem clear. But these differences arise when, rather than different preferences, some people enjoy more and better food. Not everyone identifies with the same foods in the same way nor does everyone share the same religious customs. There are indeed differences, but they can still belong to a single culinary system, as they all share the same ingredients, condiments and procedures that ultimately characterize the Mediterranean culinary system.

The possible combinations of ingredients, condiments and procedures give rise to different cuisines. The culinary systems can be multiplied into many cuisines with numerous results. One system does not imply the existence of similar cuisines, as there are many possible combinations and selecting different proportions and combinations of ingredients and methods can give rise to different cuisines. Likewise, any elaboration of a given cuisine can generate many culinary results: if we simply select one fat instead of another, or add more of one condiment or ingredient or even just change the texture or the temperature, the same dish will have a different taste.

The step from culinary system to cuisine and from cuisine to elaboration is, in fact, a process of multiplication, and in extreme cases, of fragmentation. However this process does not happen by chance. In the case of popular cuisine, the object of analysis here, not *haut cuisine* or elite dishes, as already mentioned, other mechanisms would have taken place, a process arising from relationships that have been woven historically between variables such as social class, ethnicity, gender, religion and type of work, which have been a source of food differentiation; and, furthermore, territorial and/or political units that have affected the market networks and the progression of culinary identification, such as the historic region, the development of cities, the region, the nation, the state and, more recently, globalization of the agro-food market, which, among other things, enables the recreation of ethnically-distant dishes different from the original dishes that give it its name. The way in which these variables and units are articulated in a given historical and territorial context, has drawn culinary maps that can be irregular and complex and rarely adjust to the boundaries of the administrations that currently disseminate their cuisine. It is legitimate to spread terms or to edit recipes pertaining to Turkish, Tuscan, Andalusian, Moroccan or Lebanese cuisine through tourism. In fact ethnic restaurants have built

models responding to these designations and consequently have become a cuisine. However the dishes prepared in the territories of origin – Turkey, Tuscany, Andalusia, Morocco or the Lebanon– are not really portrayed as coherent and clearly differentiated units from those of their neighbours. However, there are inner dividing lines that respond to class and gender preferences, or that are irregularly distributed according to religious custom or work process. Likewise, elaborations that are identified with certain ethnicities coexist with others that have responded to market circuits with stable policies implemented in most of the Mediterranean since the nineteenth century. In fact, cuisine is a long-term phenomenon and its cultural construction has depended upon many factors that should be considered if we do not wish to distort such a rich and plural reality.

Culinary typologies, cuisines and dishes

In order to advance in the analysis proposed for the Mediterranean cuisine, once the culinary system has been established it is useful to pause and consider the typologies before going on to the cuisines. Typologies are culinary prototypes, combinations of ingredients, condiments and procedures repeated over the centuries. Before the arrival of the recipe, if it exists at all, as domestic cooks do so from sight rather than from paper, we should consider the typology, which is merely a reference: stewed pulses, roast meat, boiled and oiled semolina ... There are various types of semolina, many of which are used to make couscous but they are all part of this classification. In the case of the Mediterranean some types already existed in the classical world; others originated in mediaeval Jewish, Christian and Muslim kitchens; some come from the incorporation of American products in the Middle Ages or even in Modern Times; and others were created in the regional kitchens a little more than a century ago (Fournier, 1993; Hernández Bermejo and León, 1992; Hernández Bermejo, 1997; López Linaje, 1991). In any event, they are the great successes of the Mediterranean cuisine, forms of combining ingredients, condiments and procedures, that have been handed down from generation to generation and are recognizable in almost every Mediterranean cuisine.

The Mediterranean has been a network of millenary routes. Aromas, flavours and food customs have travelled from Asia to Gibraltar, crossing the North of Africa, the South of Europe or hopping from island to island. Return journeys, return dishes. The tastes that have kept the fire kindled for thousands of years are recreated in today's dishes, as though they were engrained at the bottom of the cooking pot. They are distant allusions but easy to identify: Roman, Arab, Andalusian, Jewish, Ottoman, French, Spanish ... Not all have the same relevance nor do they advance at the same pace, but each has deposited a food, a condiment, an exact proportion to be blended in a process that will become a dish.

In the Mediterranean this common legacy has melted into a series of core typologies, combinations of ingredients, condiments and culinary procedures, widely extended over territories and repeated in the history of its cuisines:

1. Cereals (flour, semolina, pearls, leaves, noodles, pastas, pancakes, bread), seasoned with fats, herbs, spices and nuts, sweetened (sugar, cinnamon, vanilla, dairy products) or savoury (meats, fish and vegetables) and in moulds, in dough, cooked, steamed, baked, fried or soaked.

2. Cold or warm soups or broths, made with bread, oil, garlic or other spicy or sharp condiments.
3. Thick soups or broths with vegetables and fish or meat and bread or pasta.
4. Oat or almond porridge and thick pulse, cereal or vegetable purées.
5. Pot rice or dry rice with vegetables, meats and/or fish.
6. Cooked legumes seasoned with fats, herbs, vegetables and sometimes meats or fish.
7. Tomato sauces with flour, rice, meats or fish, stews, fried or braised dishes.
8. Wild vegetables and plants seasoned and lightly fried, stewed or roasted.
9. Raw, boiled or roasted vegetables, dressed or accompanied by sauces for salads, optionally with fruit.
10. Vegetables stuffed with mince meat and seasoned.
11. Boiled, poached, fried eggs or in an omelette besides thickener for sauces, for bread-ing and in dressings.
12. Sausage meats.
13. Minced meats and fish, rounds of meat and fish, fried, stewed or boiled.
14. Kebabs or skewers of meat or fish with optional seasoning and vegetables.
15. Chopped or sliced meat and fish, seasoned with savouring, sweet or spicy mixtures, stewed, roasted or baked.
16. Stuffed meats and fish, stewed or baked.
17. Large joints of meat, seasoned, roasted or stewed.
18. Leaves or pastry, with a meat or fish filling and baked in savoury pies.
19. Fried and seasoned fish, meat and vegetables.
20. Seasoned, roasted, stewed or baked offal.
21. Stewed snails.
22. Game stew with aromatic herbs.
23. Meat preserves in fat, olives in brine, marinated or dressed, cooked vegetables, desiccated or pickled vegetables, fruit in syrup, puréed or in brine, to be used as a condiment.
24. Dairy products in sauces, soups, salads and au gratin.
25. Aromatised sauces and oils as condiments.
26. Fresh and dried fruit in savoury meat and vegetable stews.
27. Cakes and fried breads.
28. Baked cakes with nuts and honey or syrup.
29. Cooked or sweet-fried nuts.

Some of these typologies may be recognized in other culinary systems, but not in the group of ingredients, condiments and procedures with which the Mediterranean system has been characterized previously. It is those ingredients, condiments and procedures that, when combined, generate the typologies mentioned. There are many examples of dishes generated by such categorization: the second category, with cooked pulses, gives way to vegetable stews and soups; the thirteenth (minced meat and fish, in rounds and fried) meat balls and meatloaf; the twenty-fifth (aromatised sauces) to mustards, *almorí*, *Ddægmira*, romesco, tomato sauce, garlic mayonnaise, mayonnaise, *pesto*; the twenty-seventh (cakes and fried breads) to fritters, honey-coated pastry, pancakes, dough strips or *churros*, *Læbriwat*, *Lhalwa ssæbbakiya* and in the long list of fried cakes enjoyed in the Mediterranean. Each of these (vegetable stews, meat balls, sauces or cakes) is offered in many different recipes. In each recipe, every cook introduces variations and gives it a personal touch, hence the multiplication of results described previously. This diversity, difficult to quantify, is what is perceived by the senses and discovered when travelling throughout the Mediterranean or even visiting the markets.

In fact, in the culinary system the elements that have characterized the food customs of the inhabitants of the Mediterranean have been identified and listed; the prototypes that have grouped these elements together have been detailed in the typologies; in the cuisines and culinary results, and finally, their appeal to the senses: sight, smell, taste... what is normally perceived as what has come to be known as the Mediterranean Diet. Indeed, these typologies and the cuisines where they are developed give rise to preferences, tastes, habits and styles that act as a filter for the newly incorporated foods. The present change in the consumption of the Mediterranean people has taken place through the assimilation of new things in their cuisine. Hence it will be difficult to evaluate and even more difficult to predict the effects of such change.

Markets, cuisines, identities and consumers

The following pages will attempt to analyse the way in which the consumer filters the selection of foods, from their encounter with them in the marketplace to the table, and passing through the kitchen. The first step is, therefore, to address the markets and the relationship of the Mediterranean people with the food displayed in the street or in specialist outlets.

It can be said that food and urban space are woven together in the Mediterranean fabric. Its inhabitants are used to snacks between meals, to eating *al fresco*, to chatting with others over a meal. The foods, together with their aromas, shapes, shine and colours, all form part of the urban tapestry, in an incessant display inviting us to taste them and to share conversation and food. The market, as a place for exchange and communication, plays a fundamental role in sociability and food choice (López-Casero, 1989; Mavian, 1992; Vidal Castro, 1995; Contreras, 2004).

The Mediterranean market networks have historically been shaped around sales mechanisms and very diverse locations: at the home of the producer, with travelling traders, in villages and town squares, town gates, quaysides, fairs, souks, medinas, guilds, bazaars, auctions, daily or weekly markets, grocery stores, retail and wholesale markets, and

more recently superstores. Markets could be rural or urban, varied or specialized, periodical or fixed and have been supplied with local, county, regional, national and now international products. At present, the success of the latter is in fact threatening the survival of many Mediterranean markets. For the majority, globalization imposes difficult competition and market paces and circuits unknown until recent decades. This has led to the coexistence of diverse networks, very irregular and not always interconnected, with sales systems that respond to different situations and that at times are even conflicting. In this process, the trends imposed by globalization and by the superstores generate prices, agility, diversity and significance, which enhance consumer acceptance. On the other hand, the modifications imposed on the market by the administration lead to changes in the location, infrastructure and sales system and are not always readily accepted, even though they may be necessary. This is the case of the large cities, in particular in the North of Africa, where access to the souks and markets of the historic city centres has collapsed. When market infrastructures have not been modernized, this central location poses problems with hygiene, noise and hazards.

On the other hand, the markets of the Mediterranean respond in very different ways to the globalization of the sector. In the North, some disappear and others focus on tourism and offer fake craft products and distorted versions of local foods. However others have learnt to reconcile tradition and modernity. They have taken advantage of the freshness and quality of their food produce and even become gastronomic and tourist attractions, such as the market of *la Boquería* in Barcelona, *Porta Palazzo* in Turin and *San Miguel* in Madrid. In Spain, with the proliferation of superstores and the advent of internet sales and home delivery, many traditional markets have been restored, but have often lost vigour and vitality along the way. In the South, this process is slower and is based on a different situation. In recent decades, the markets have grown and multiplied at the same time as the cities. Meanwhile, in the Mediterranean changes have occurred in the market networks, in the degree of diversification and specialization, infrastructures and transport, regulation and organization and even sales systems. However, on occasions, the limited control of the markets, so complex and unpredictable on the other hand, ensures the survival of many sellers through the submerged economy. Such a widespread and varied network of markets and intermediaries, as in Morocco, can accommodate almost all, but the peripheral distribution channels have to improvise strategies continually. Furthermore, because of competition the sales outlets have to diversify and specialize. This is what happens in the shops, supermarkets and, of course, in the hypermarkets. When the sale of a single product, even on a small scale, supposes an improvement in prices, as happens with vegetables, this leads to a decrease in the number of varieties supplied. In fact, this trend shows a general decline in food biodiversity beginning with the production process and continuing with the distributors, where small sellers and of course the modern distribution chains opt for the varieties that give them the biggest profit margins.

In the market networks of the Mediterranean, diverse channels coexist. They have very different environments and prospects. Many depend on the survival of their old sales systems and traditional market circuits. Others force centralization and homogenization. The market networks amplify and overlay, the sales systems diversify and become consolidated, and customers are oriented according to their means, needs, sex, age and food culture. This heterogeneity in supply and demand permits the establishment of

distribution channels that work relatively independently. The direct relationships between producers and distributors on one hand and chefs and consumers on the other, despite being threatened, are sought after because of what they signify in terms of proximity and confidence in the products. The consumers accept modernization and welcome special offers but they also value the qualities of the traditional markets and identify (associate) them with their lifestyles. It is in this dual environment that the consumer moves: globalization places the superstores in the best position, but the traditional markets mean freedom and proximity, deep-rooted values of the consumers that are powerful enough to offer a certain amount of resistance to the trend towards the homologation of the sales systems⁸ (González Turmo, El Ouardani and El Aallali, 2007).

The transformation in dietary habits and the incorporation of new foods into the Mediterranean dishes are just as irregular as the transformations observed in the markets. The change is evident, but diverse intervening factors speed up or neutralize this change. To begin with, not all newly introduced foods find the same acceptance and become part of the local dishes. The way in which the consumer selects one food rather than another decides the proportion in which it is used and the way of mixing it depends on culinary tradition and food structure. In fact, a new food is not normally incorporated into the Mediterranean Diet until it finds its way into one of the daily dishes or becomes part of a food ritual. More so: it is completely assimilated once it forms part of the cuisine; it is not by chance that it is the cultural epicentre of the diet. On the other hand foods that are eaten cold or that require little preparation in the kitchen are more easily substituted and, moreover, are less likely to become part of a common heritage. Food, we must not forget, is nutrition, but at the same time it is to be enjoyed, to help relate with others and to feel identified with.

Indeed, the act of cooking continues to be fundamental in the Mediterranean and involves a process of making food a common heritage. When one dish is chosen in preference to another, we are selecting foods, condiments and culinary procedures that identify the consumer with a tradition. However the cuisines are represented all over the world, even those which are widespread as ethnicities tend to reinforce the ties of the original consumers with their flavours and textures (Tresserras and Medina, 2006). This is the case of the cuisines originally from Morocco that incorporate ingredients and condiments unknown until recently: maize, mushrooms, Chinese noodles, red peppers, sunflower oil, stock cubes, soy sauce, ketchup. They bring about changes in flavours, colours and even in the dishes themselves. For the discourse, taste is fundamental, but practice is dictated by other priorities. Fuels and many utensils are also new. The trend, therefore is for everyone to cook the same foods in the same recipients. However these changes undoubtedly involve important modifications: soups, creams and sauces are now smooth and offer similar textures and flavours; condiments are micronized; fries and roasts are different to the palate. All this supposes important modifications in dishes that were considered traditional but are still recognized as such (González Turmo, El Ouardani and El Aallali, 2007).

8 - In Morocco, for example, the sale from the producer to the consumer in small quantities and of local varieties coexists with sales from the producer to the small intermediary, the haulier that operates in a small market radius and to wholesalers that purchase his fruit before harvest; rural or urban souks to sellers of small towns; specialized wholesale markets to sellers from souks, cooperatives, travelling salesmen and private individuals; from souks and retail markets to consumers, from hauliers to consumers; from the mass distribution to wholesalers, cooperatives and sellers; and from superstores to consumers. There are as many combinations as business needs and possibilities.

In this journey from the point of sale to the stomach, food becomes a common heritage involving an imagery built by the superposition of different references of identity. The food produce from every corner of the Mediterranean withstands the change in adaptation to eating habits and to different cuisines and food cultures. These changes may take place in the ingredients, condiments or procedures, giving rise to different elaborations, dishes or rather, it is these, the dishes that alter their position in the food structure. The current change in food takes place, for the consumer, through two routes that contribute to minimizing repercussions or at least their perception of the change: the reinterpretation of the traditional elaborations by decontextualizing them on one hand and through culinary integration and hence cultural assimilation of new foods on the other. In the first case, that of the reinterpretation of traditional elaborations through their decontextualization, a change takes place in the structural position, that leads to a new significance. This is the case of many dishes that are no longer daily meals and have gone on to form part of rituals or have proliferated in bars and restaurants. Many depend on the employment situation. Some dishes used to be the poor man's meal and are now typical, enriched foods, as is the case of many sailor stews, crumbs or hummus.

In the second case, when a culinary assimilation of new foods occurs, the exact opposite happens, the novelty is assimilated because the dish that it belongs to does not alter its position in the food structure, that is, in the stationary cycle, in the distribution between daily foods and extraordinary foods, in the daily distribution of meals –breakfast, lunch, tea and supper– and in the order in which the dishes are served. This incorporation of new foods normally takes place without any perception of change. This is the case of stews and soups, that over recent years have been incorporating vegetables that were unknown until recently as well as abundant animal protein. However the consumer thinks he is eating the same as always; the change does not register. Why not? Well, because above and beyond the perception of taste, the strictly physiological, remains the significance and position of the food structure. The differences to the palate are minimized if the collective acceptance of the significance lasts. It is only necessary for the ingredients, condiments and procedures to be assimilated to a given culinary typology, such as a vegetable stew, roast meat or *gazpacho*. No cook would even think of frying any of the ingredients of *gazpacho*, a cold soup made from raw vegetables, nor would he blend the ingredients of moussaka, characterized by its layers of ingredients with different tastes and textures and risk crossing the limits of another typology and confuse the diners, at least whilst these historic limits are well defined.

Conclusion

Globalization affects the Mediterranean Diet as a food style head-on. Its heritage value is threatened. This is why UNESCO has declared it Intangible Cultural Heritage. The pressure from the agro-food market has forced the abandonment of crops, long-established livestock farming techniques and traditional crafts. It has imposed new networks and sales systems, and modified consumption habits. This impact entails loss in knowledge and practices that have contributed historically to the identity of the peoples and have configured a rich and complex food universe.

However, all is not lost: the Mediterranean people have woven a powerful cultural fabric that allows them to identify with their food style and adapt changes to their original

customs in a permanent recreation of their heritage. Food produce and cuisine of the Mediterranean are changing, not because of the triumph of fast food, but because new foods and flavours are incorporated to old meanings. What is important about this change is not that children demand new foods and their parents provide them, as food has always been a good argument for generational opposition. Nor is it because aperitifs and desserts unknown until now have been introduced. The changes become serious when they start to form part of the cuisine, which is the core of food, when they begin to form part of the daily meals and customary dishes. And these changes are indeed taking place.

The change in food consumption is not however something new in the Mediterranean. Until recent decades there has not been immobility, in fact, quite the contrary, food has been the result of constant interactions. This high degree of exchange and communication that has regularly affected food from production to consumption, and has created in consumers and their cuisines an important capacity to adapt change to the food customs and original culinary procedures. The Mediterranean people continue to measure their identity in their form of cooking and relate with one other around a table, and reproduce their customs by appropriating the new. Change is, therefore, just as evident as cultural resistance. In fact, the defence of foods and local varieties, of traditional cuisines and food rituals have been strengthened in recent years. The Mediterranean people accept the globalization of the agro-food market as something inevitable, but recover practices and significances so they do not feel lost before such a necessary, joyous and cohesive activity such as eating.

The cultural network is, essentially so powerful that it resists invasion from the agro-food market. Biodiversity is affected, tastes and textures change, the food structure is altered. They are important changes. So important that they have mobilized four countries to request it to be safeguarded by UNESCO and have achieved the declaration. But fortunately there are mechanisms that permit this heritage to be safeguarded, whenever they can work. The defence of the heritage values of the Mediterranean Diet should be the main driving force of policies and social actions in the countries that have proposed their declaration as Intangible Cultural Heritage. A great deal is at stake. Its future affects the biological and cultural diversity of food, besides the survival of many human beings. Peasants, shepherds, fishermen and craftsmen of the Mediterranean find it extremely difficult to earn a living from their profession. Their role has been devaluated, their economic capacity diminished, their survival is in the balance. The abandonment of their activities has tremendous consequences; loss of biodiversity, cultural impoverishment, rural exodus, migration, poverty, marginalization.

However several months have gone by since the declaration of UNESCO. After the announcement, the press spoke about olive oil for a few days. Nothing more. Neither politicians nor the press have acted or spoken, neither then nor now, about the objective of the candidature: Intangible Cultural Heritage. To waste the potential of the message in the first few months following the declaration is an irresponsibility. Not only is it a lost opportunity, but many others will be lost with it. We will lose the initial acceptance of the citizens, and worse still, of the people directly involved in the conservation and reproduction of this heritage; we will lose possible patrons and the will of coordination, and moreover, we will lose the moral authority to claim the food value of the Mediterraneans. Furthermore, there will not be another option with so much institutional value.

The budget cuts that have followed the economic crisis cannot and should not justify lack of action. On the contrary, they oblige us to find new ways to add value to a human fact as important as food. The heritage to be claimed is alive. It is due to society and acts upon it. It does not have to be projected, executed or rehabilitated. We only have to elaborate clear messages, publicize them creatively and effectively and, moreover, make a tremendous coordination effort to define strategies and promote actions, counting on their protagonists: producers, institutions and associations that act as protection structures, researchers and consumers. It is the task of the administrations that requested the declaration from the UNESCO to pose the urgent adaptation of the safeguard of the Mediterranean Diet to the present moment. They should lead the opportunity that they requested. It is their responsibility and it is urgent.

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THE “MEDITERRANEANISATION” OF FOOD FASHIONS IN THE WORLD

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Mention of Mediterranean food can be found in all kinds of information at international level. You only have to look at any of the almost 3,500 sites on Google to be convinced of this. If a commercial, political, or scientific language is built upon the many benefits of such food, is that really an opportunity for the Mediterranean Diet? There is a disturbing paradox here, given the explosion of food-related communicable diseases in the Mediterranean countries, yet this same diet is supposed to prevent obesity and safeguard health. The Mediterranean way is sold not only as “healthy living” but also as a way of “living well” and a promise of well-being, just at a time when the situation is deteriorating. Is this a major threat to the image trumpeted around the world and a threat to the producers who make their living from it?

The influence of this idea is so powerful that it is easy to talk of the phenomenon of identification or imitation or even “Mediterraneanisation” of food in other parts of the world. This article examines the reality of the diffusion of Mediterranean food within and beyond the Mediterranean, and who benefits from this: are the beneficiaries the Mediterranean producers or have those outside the region found ways of profiting from these market trends? The fact is that the agri-food multinationals have developed marketing strategies which capture the benefits of the capital represented by the “Mediterranean Diet”? And what, do they promote: products, nutrients, tradition, skills, nature, the environment...? In a nutshell, is the Mediterranean Diet an opportunity or a threat to the development of the region?

The “Mediterraneanisation” of food: what does it mean?

How can you define *Mediterraneanisation* when the Mediterranean Diet is characterised by such great diversity? You can pick out common elements in the different models which constitute their basic characteristics. In the main, this means the products: cereals (wheat and rice), fruit and vegetables and pulses, fish, fermented milk (yoghurt, cheeses) and olive oil. The meal is constructed around vegetables: many dishes are composed solely of food of vegetable origin (vegetables or pulses), form the heart of the meal. Meat (lamb, veal, cured pork products) and fish are used to add flavour. Salads seasoned

with olive oil and fruit are present at all the main meals, while cheeses are frequently mixed in dishes: feta, ricotta... These are preparations which consist essentially of skilled blends which bring out flavours rather than laborious cooking. They are acid flavours, with abundant use of vinegar, lemon or citrus fruit juices, enhanced and flavoured with garlic, onions, spices and aromatic herbs. Drinks, consisting of wine (often diluted with water) are consumed during the meal or aperitifs (pastis, raki, arak, anisette), accompanied by appetisers. Apart from the culinary aspects, the Mediterranean Diet can be described as structured (three main meals) and convivial: you sit down to a meal which follows a certain ritual, respecting, indeed paying homage to, a cult of food. That is how the diet is included in UNESCO's intangible heritage.

What evidence is there of the Mediterraneanisation of food habits? In the United States, where an unbalanced diet has long had consequences in terms of the spread of obesity and communicable diseases (diabetes, cardio-vascular conditions, etc.), the Mediterranean Diet is highly attractive, above all because of its health benefits. Initially promoted by Ancel Keys and his famous "Seven Countries Study", the Mediterranean Diet became a benchmark for a balanced diet when, in 1992, the United States Department of Agriculture (USDA) published the Food Guide Pyramid as an educational tool. In 1993, Oldways, a non-profit organisation which promotes health and healthy living, created the first Mediterranean food pyramid. Following the example of the United States, which adopted the health aspect, how did other countries in the Mediterranean and elsewhere take ownership of the Mediterranean Diet? Our study covers three levels: 1) trends in consumption, which are the immediately visible element, reflected in the convergence of diet with the benchmark model; 2) trends in local production and/or imports; and 3) the appropriation of certain characteristics of the Mediterranean model by professionals in the agri-food sector as a vector for marketing their products.

Is the convergence towards the Mediterranean Diet a fact?

The analysis that follows is based on the observation of 22 countries, of which 13 are Mediterranean and are part of CIHEAM, and the other 9 are outside the Mediterranean area. The latter were chosen for their representativeness of the various geographical zones and for their entry, either as producers or as consumers, into the market for typically Mediterranean products. Japan, Chile, South Africa, Argentina, Sweden, Canada, Australia, the United Kingdom and the United States were therefore selected. Four of these countries possess a Mediterranean type bio-climatic region, namely: the Californian coast, central Chile, the Cape region of South Africa and the coastal areas of Perth and Adelaide in Australia. A touch of the Mediterranean outside the Mediterranean, but with totally different human development, historical and cultural processes.

The first measure of imitation of the Mediterranean model involves overall quantities consumed. With a reputation for frugality, the typical ration would be around 2600 final kcalories and 6500 initial kcalories¹, the latter reflecting moderate consumption

1 - Initial kcalories represent final kcalories in vegetable equivalent, where 7 kcal of vegetables are necessary on average to obtain 1 animal kcalorie in the ration.

of animal products. In all the Mediterranean countries, with the exception of France and Cyprus, energy from vegetable sources is at least 50% of total energy. In the Maghreb countries, the proportion rises to around 80%, primarily due to the high consumption of cereals (FAOSTAT).

With regard to the quantitative evolution of the ration, the situation is becoming a possible cause for concern both in the North and the South. The evolution of available kcals in the Mediterranean countries between 1960 and 2007 shows a very marked increase in all the countries studied. In some of them, especially the countries of North Africa, such as Algeria (82%), Tunisia (58%), Egypt (51%) and Morocco (47%), the increase reached record levels which place them today at levels close to the countries of the North. Among the countries of the northern Mediterranean, Portugal also shows a significant increase in kcals (44%). This has been accompanied by a rise in kcalories of animal origin; while fairly low in the 60s, the percentage of energy of animal origin in the diet of the peoples of Mediterranean Europe almost doubled in 40 years in Italy, Greece and Spain, to make up 30% of the ration (Vareiro, 2009).

On the other hand, contrary to what might be expected, outside the Mediterranean, in the nine countries selected, there has been little change, except in the United States and Canada, where available kcals rose by 30% and 26% respectively, over the same period of time.

As regards the Mediterranean countries, a change in diet can be seen, reflecting a trend which is common to by several countries around the world. The causes may be identified primarily as growing urbanisation, globalisation in all its aspects, the feminisation of work and organisation of working time, which leads to an increase in consumption of food outside the home. All these factors translate into a decrease in the diversity of diet, a loss of local culinary traditions, and an increase in the consumption of industrialised, ready-cooked products, as well as fats, sugars and animal products.

Let us take a closer look at the changing patterns of food consumption. To measure the adherence of countries to the Mediterranean Diet, we have the “Mediterranean Adequacy Index” (MAI), proposed by Alberti-Fidanza and colleagues (Alberti-Fidanza *et al.*, 2004). This index calculates the ratio of kcalories provided by various so-called “Mediterranean” food groups to those provided by so-called “non-Mediterranean” foods. More recently, Da Silva and colleagues (Da Silva *et al.*, 2009) used the same index, slightly modifying the selected groups of foods. This study showed the evolution of diet in 41 countries in all the geographical area of the world between two time periods: 1951-1965 and 2000-2003. We propose here to update the results.

In these studies, “Mediterranean foods” are defined as olives, olive oil, cereals, roots and tubers, herbs and spices, fruit, vegetables, nuts, fish and shellfish, pulses, and wine. “Non-Mediterranean foods” include all oils other than olive oil, sugar and sweeteners, alcoholic beverages (other than wine), meat, offal, stimulants, and animal fats. Unlike the authors, we decided to exclude roots and tubers from the “Mediterranean foods”, as they are not emblematic of the *Mediterranean Diet*. This changes the results significantly. For example, Spain, Egypt, Morocco, Chile and, above all, Japan have a lower MAI if roots and tubers are excluded.

Da Silva's study showed that in the last 40 years, the countries of bordering the Mediterranean basin moved away from the typically Mediterranean Diet and progressively incorporated the food habits of other cultures. This phenomenon is particularly true of the younger generations, as underlined by the Baldini study (Baldini *et al.*, 2008) which analyses the eating habits of Spanish and Italian university students, who do not eat enough vegetables and eat too much fat. Even so, the Italian students kept up the Mediterranean culinary tradition more than the Spanish. It is interesting to see how certain Mediterranean foods, such as fish and leguminous vegetables, are more often found in the diet of the Spanish students while certain others, such as cereals, fruit and vegetables, are eaten more by the Italians.

On the other hand, according to da Silva and colleagues (Da Silva *et al.*, 2009), several countries seem to be moving closer to the typical diet: in order, these are Iran, the United Kingdom, Sweden, Denmark, Norway, Canada, Australia and the United States. These are exclusively non-Mediterranean countries, while the Mediterranean countries are moving away from their traditional diet. The study by Van Diepen and colleagues (Van Diepen *et al.*, 2011) confirms this, since it shows that Dutch university students ate more unrefined cereals, green vegetables and, surprisingly, more olive oil than Greek students. On the other hand, the latter consumed more pulses.

Indeed, if one considers the evolution of the dietary availability of certain food groups in Mediterranean Europe and northern Europe, since 1960, we find that the greatest changes have taken place in the Mediterranean countries. While olive oil, fish, fruit and green vegetables are still widely available, wine and pulses are less so, while non-Mediterranean products (animal fats, vegetable oils, sugar and meat) show a marked increase. On the other hand, the latter products are more available in the markets of the non-Mediterranean countries, while at the same time the availability of olive oil and fruit is increasing (Vareiro *et al.*, 2009).

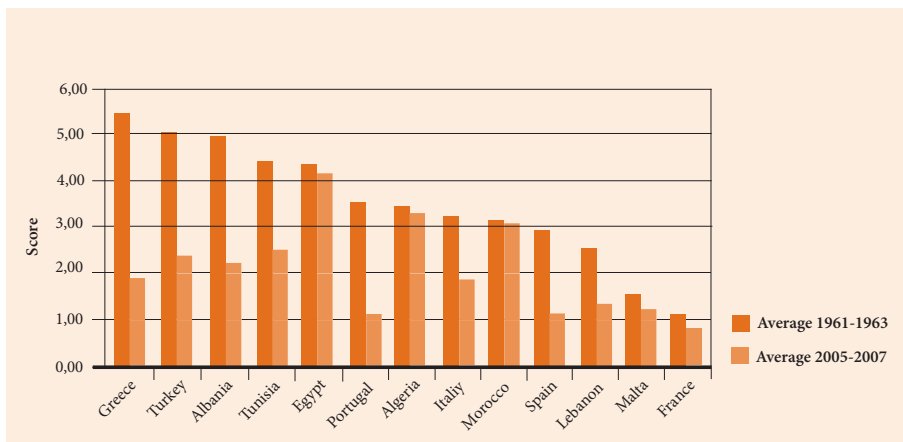
To ascertain the most recent trends, we recalculated the MAI for the years 2005-2007 (the latest years available in the FAOSTAT database) for the 22 countries. We point out that our calculations, like those for the two studies cited above, are based on Fao food availability data. To simplify the results, we grouped the various MAI values for each country into different levels: 0-0.99 *very low*, 1-1.99 *low*, 2-2.99 *average*, 3-3.99 *high*, 4-5 *very high*. A high MAI shows strong identification with the Mediterranean.

If we focus on the most recent years, we find highly contrasting situations. While Egypt has the highest MAI, France has the lowest. Is France still Mediterranean? Although it has two regions bordering the Mediterranean, the French diet as a whole is hardly Mediterranean. Moreover, it is revealing that France did not participate in the candidature of the Mediterranean Diet for registration in the UNESCO intangible heritage, but only campaigned for its culinary tradition. The European Mediterranean countries similarly distanced their emblematic diet: Spain, Portugal, Italy and Greece also have a *low* MAI. Has Europe unified its dietary patterns? This is highly likely, with the intensification of intra-European trade and the expansion of wholesale distribution. Two South Mediterranean countries (Malta and Lebanon) stand out for their scant adherence to the Mediterranean Diet. While this situation is understandable for Malta, where the Anglo-Saxon culture has long reigned, the situation in Lebanon is surprising, since it still has a strong

food culture. The other South Mediterranean countries (Tunisia, Turkey, Albania) have an average MAI, (Algeria and Morocco) high MAI and or (Egypt) very high MAI.

Of the non-Mediterranean countries, almost all (Canada, Australia, United States, Sweden, United Kingdom, Argentina) have a very low MAI, and three (Japan, South Africa and Chile) have a low MAI. Does this mean that the *Mediterraneanisation* of food habits can be ruled out in these countries? Not necessarily, since the average level does not always reflect trends which are still too marginal to be visible. We shall now look at the trends in the MAI from the early 1960s to the late 200s in the different countries, i.e. over 40 years.

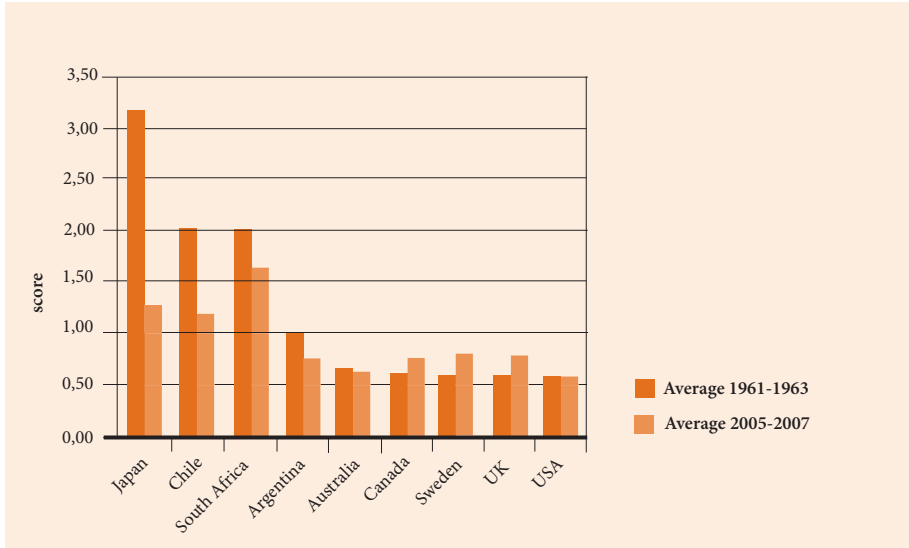
Chart 1 - Trends in the MAI in the Mediterranean over 50 years



Source: our calculations based on FAOSTAT.

In the Mediterranean, all the countries, with the exception of Morocco, are moving away from the Mediterranean Diet. This phenomenon is particularly marked in Greece, the country which symbolises the “ideal diet”. This symbolism is now history, which does not make it any easier to promote. “Dietary modernity”, first affecting the European Mediterranean countries (Spain, Portugal) is spreading to Albania, Turkey and Tunisia. France, albeit with a very low MAI, is holding up better, probably thanks to its strong culinary tradition. Egypt, Algeria, Morocco show the same resistance, but this is probably linked to the lack of availability of modern foods. However, if we look at the trends in the last decade (2000-2003 and 2005-2007), some positive signs can be seen, since in Egypt, Italy, Spain, France and, above all, in Algeria, the MAI is rising.

In the non-Mediterranean area, over the last 50 years, the MAI declined in five countries, especially in Japan, where the negative variation is very large. The reason is the strong increase in consumption of oil, sugars and meat (which in 1960 was almost non-existent) and alcoholic drinks. At the same time, the consumption of cereals and roots and tubers is less than what it was 50 years ago. Is another food myth about to be exploded? The MAI is also declining in Chile, South Africa and Argentina. In Australia and the United States, there has been no change and in Canada, Sweden and the United Kingdom, a slight improvement can be seen.

Chart 2 - Trends in the MAI in non-Mediterranean countries over 50 years

Source: our calculations based on FAOSTAT.

Overall, the Mediterraneanisation of the diet is declining everywhere and the decline is much more intense in the Mediterranean countries. If we rank the 22 countries by their level of Mediterraneanisation, the top countries on the list are all Mediterranean countries. As we indicated earlier, this chiefly affects Greece (-3.6) Albania and Turkey (-2.7), followed by Portugal (-2.4), Tunisia (-2.0) and Spain (-1.8). On the other hand, in the non-Mediterranean countries that we considered, the MAI is declining much more slowly, or even rising slightly in some countries: United Kingdom, Sweden and Canada, while Japan, which had an MAI similar to that of the Mediterranean countries is losing its characteristics which are regarded as equally beneficial as those of the Mediterranean Diet.

The MAI is certainly an interesting index in ascertaining the general trends in people's food consumption, but it has certain limitations, such as the fact that it assigns the same weighting to each food group and does not take into consideration the different proportions of the ration. That is why we have added another indicator, the food quality indicator (FQI), which allows us to evaluate not only the Mediterraneanisation but also the quality of the daily diet in terms of health recommendations

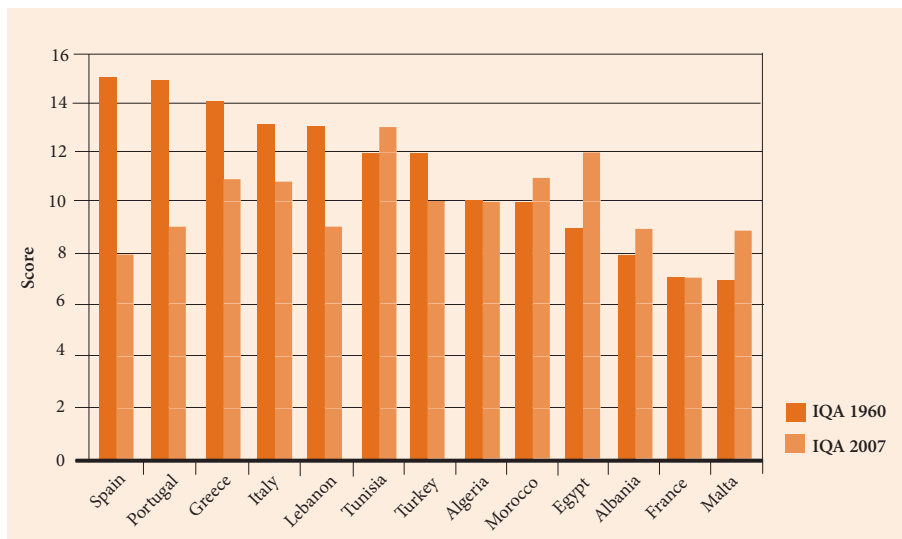
A marked decline in food quality, especially in the Mediterranean

The DQI (diet quality indicator) is a diet quality indicator calculated by adding scores attributed according to the level of consumption of certain foods, in relation to minimum or maximum recommended levels of consumption ceilings of recommended consumption. Based on WHO and USDA recommendations on amounts to be eaten for five major

products (meat, fish, olive oil, cereals, and fruit and vegetables) and proportions of four nutrients (lipids, saturated fats, complex sugars and proteins) in the daily ration, a score is attributed for each level of consumption. A high score is the sign of high diet quality.

An analysis of the evolution of the DQI between 1960 and 2000 (Padilla, 2008) had already shown a clearly worsening trend in the quality of the diet in the 13 CIHEAM member Mediterranean countries. We updated these data with 2007 data, and analysed trends over almost 50 years and compared them with the non-Mediterranean countries. The comparison of the scores obtained in 1960 and 2007 for the Mediterranean countries shows that only five countries (Albania, Egypt, Malta, Morocco and Tunisia) saw a slight improvement in their DQI. Among the other countries, six had a lower score in 2007 than in 1960 and two had not changed. In Greece, Spain, Lebanon, Italy, Portugal and Turkey, food quality has greatly declined. Finally, in France and Algeria, the situation has remained stable.

Chart 3 - Trends in the DQI in the Mediterranean countries (1960-2007)



Source: our calculations based on FAOSTAT.

We grouped the different scores by level of diet quality: 0-4 very low, 5-7 low, 8-10 average, 11-13 high, 14-18 very high. While in 1960, three countries (Spain, Portugal and Greece) had a very high score, in 2007, no country achieved this. Spain, which in 1960, together with Portugal, had the highest DQI (with a score of 15) among the 13 Mediterranean countries, was second to last in 2007, with an DQI of 8. This highly negative trend also applies to Portugal.

Finally, if we look at the latest trends, while in 2000 no country had a low DQI, one country, France, fell into that category in 2007. The recent general trend is downwards, since between 2000 and 2007, only one country out of the Mediterranean 13, Morocco, saw an improvement in its DQI. Although the situation is not yet catastrophic, it is equally true that the results give pause for thought.

If one analyses in a little more detail the results for each food group and for each country, we realise that the final score is the result of simultaneous positive and negative trends. For example, while in all the 13 countries, the score attributed to proteins in the ration is declining, several countries show improvements for other food groups, such as consumption of fruit and vegetables which is increasing, as well as fish in several countries (Egypt, France, Italy, Malta, Tunisia). On the other hand, however, there is increasingly excessive consumption of meat and lipids. Consumption of olive oil and, above all, complex sugars, is declining.

We can observe that the countries where the consumption of meat is increasing (Spain, Greece, Italy, Malta and Portugal) are, in general, also concerned by the increase in lipids and saturated fats in the ration, accompanied by a decline in complex sugars. The fact that these five countries are countries with a higher economic level than the others confirms that, in general, above a certain threshold, an increase in economic well-being is accompanied by a deterioration in diet quality.

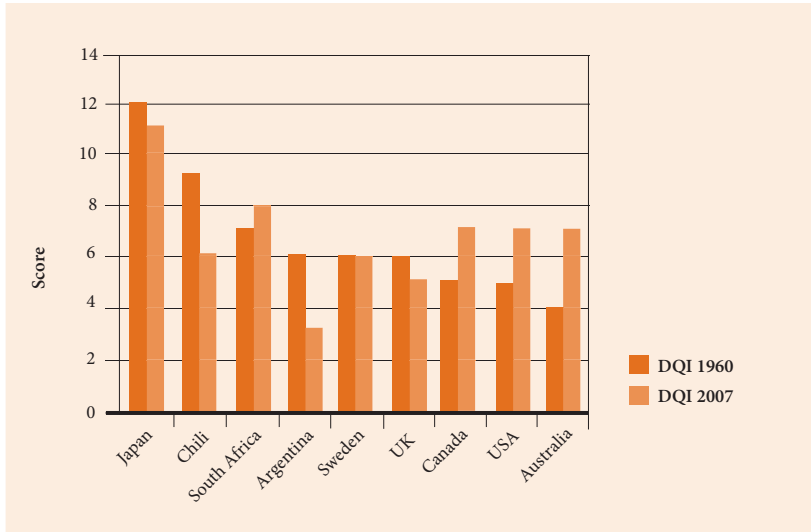
The decline in complex sugars is also visible in Albania and Lebanon, the latter experiencing concerned a simultaneous fall in olive oil consumption, as are Portugal, Tunisia and Turkey. However, positive signs can be seen in Albania, Egypt and Lebanon, where the fat content in the diet is falling.

These sadly pessimistic results are confirmed by a study recently carried out among children in Greece (Angelopoulos *et al.*, 2009). The DQI was used in that study to determine the quality of the diet of children aged 10-12 years. The great majority (84.5%) had a low quality diet, 12% a very mediocre diet and only 3.5% of the children had a good diet. An overall excessive consumption of total and saturated fats is the main cause.

Does the decline of diet quality only concern the Mediterranean, or is it rather a global phenomenon? If we go back to our nine non-Mediterranean countries, between 1960 and 2007, the DQI rose in four countries (South Africa, Canada, Australia and the United States), while in four others it fell (Japan, Chile, United Kingdom, Argentina) and remained unchanged in Sweden. While the direction of the trend is important, the level of the DQI is even more so. However, although going in the right direction, the quality of the ration in the Anglo-Saxon countries is still low (scoring around 6) while the Mediterranean countries, albeit with a strong decline in their DQI, are still at satisfactory levels (scoring close to 8).

We must, nevertheless, recognise the efforts which the Anglo-Saxon countries are making in the right direction. Consumption of fruit and vegetables is rising in Sweden, Canada, Japan and Australia. In the latter country, there is also increased consumption of olive oil and fish, as in the United States. Moreover, consumption of cereals is increasing in the USA and Canada. However, adverse trends can be seen in Sweden, the United Kingdom and Chile, where increasing quantities of meat are being consumed. Furthermore, in the two Latin American countries, Argentina and Chile, people were eating less fruit and vegetables in 2007 than in 1960. Chile has seen a considerable deterioration in its diet, because of the increased proportion of saturated fats in the diet and the decline in complex sugars. In Argentina, cereal consumption is falling, while that of lipids is rising (as in Japan).

Chart 4 - Trends in the DQI in the non-Mediterranean countries (1960 – 2007)



Source: our calculations based on FAOSTAT data.

To conclude, in almost 50 years, out of the total of 22 Mediterranean and non-Mediterranean countries, diet quality has been deteriorating in 10 countries, has remained unchanged in 3 and is improving in 9 countries (Morocco, Malta, Egypt, Albania, Tunisia, South Africa, Canada, Australia and the United States).

It must be said that although the Mediterranean countries are still, in general terms, the countries with the highest DQI, apart from Japan which is ranked among the Mediterranean countries, and France which is identified more with the non-Mediterranean countries, the situation seems to be deteriorating more rapidly in the Mediterranean zone than in the countries in other parts of the world analysed here. In addition, we find that in certain non-Mediterranean countries, the consumption of products emblematic of the Mediterranean Diet is increasing, for example, fruit and vegetables, fish, cereals and olive oil. Even if that merely reflects the analysis of current trends, we can say that we are witnessing a change in the eating habits of the non-Mediterranean countries which is in an indication of their *Mediterraneanisation*.

Australia and the “Mediterraneanisation” of the diet

Long known for a cuisine which in every respect resembled that of the English and Irish, Australia in the last decade has developed its own original and specific cuisine, namely what is known as “modern Australian cuisine”. This cuisine is the result of the merging of culinary influences, of the various population groups which live in the country today, both in cooking methods and ingredients used. Since the occupation by the British in 1788, Australia has always been a land of immigrants, so that now it includes among its inhabitants people from some 200 different countries and in 2009,

a quarter of its population had been born outside Australia (Australian Government, Department of Immigration and Citizenship). While a large part of today's immigrants come from Asia (China, India, Thailand, Vietnam, Malaysia, the Philippines), after the Second World War, Italians, Greeks, Turks and Yugoslavs flocked to Australia. "Modern Australian cuisine" is thus a mixture of Asiatic and Mediterranean culinary influences (Italian, Greek, Turkish and Yugoslav, and also French). In urban areas, it is common in the supermarkets to find *ricotta*, *feta* and *humus*.

It is indisputable, then, that immigration and the diasporas have had an influence on the spread of the Mediterranean Diet in the world thanks to restaurant catering and marketing of typical products. You only have to look at Italian and Greek immigration in the United States of America and Australia, as well as the Jewish, Palestinian and Lebanese diaspora. This last, the first wave of which occurred during the First World War, continued because of the civil war (1975-90) and continues today, disseminated among five and eight million Lebanese around the world, especially in North America, South America and Australia (Lebanese Emigration Research Centre). Another example is represented by the Italian immigrants in the United States, who took with them their culinary tradition, which has now become American's favourite (Mariani, 2011). From the end of the 19th century, and throughout the next 60 years, the United States took in a large number of Italians, who began by managing grocery stores, then *pizzerias* and finally restaurants. If, initially, Italian cuisine was regarded as cheap cuisine, almost like "fast food", with little variety and poverty of ingredients, in the 80s, it attained the status of quality and fashionable cuisine (Mariani, 2011).

The beneficiaries of "Mediterraneanisation"

If the international diffusion of Mediterranean Diet is confirmed, several scenarios are possible:

- Consumers are particularly sensitive to the territory of the production zone and demand products of Mediterranean origin. A formidable market would then open up, but the temptation to generate wealth by intensification at the expense of depleting local land and water resources would be great. Moreover, it is well known that excessive intensification alters the intrinsic quality of products.
- Consumers are attached to the structure of the Mediterranean Diet, the great diversity of foods and their combination. The origin of production is then of little importance and some may start producing in new areas to satisfy demand. That is how crops previously regarded as exclusively Mediterranean such as the olive, can appear in suitable areas in other continents (United States, Argentina, Chile). Cultivation of fruit and legumes is possible, and vegetables can be grown under glass, and fish farms proliferate. The rest of the world can rapidly become a serious competitor of the Mediterranean region.
- Consumers are sensitive to the authenticity of products and their specific nature. Mediterranean industries and artisans must then organise rapidly to protect their recipes and specific products by patents and labels. Multinationals on the lookout for any market niche to increase their turnover can use the Mediterranean image to

create a market and copy the typical recipes of these regions. Thus, for example, you can find so-called Greek feta manufactured in Aveyron in France. In that case, should we protect the origin of the raw ingredients or the origin of the know-how? Should it be done by geographical indications (GI)? The GI does have a number of advantages: it does not create anything, it recognises, it is an important driver of rural development with the integration of agro-tourism which encourages rural SME. Promoting a product means promoting a territory. GI is not without dangers, and the choice of protecting the primary product or the know-how is not without consequences. This question will be discussed in chapter 13.

To try and shed a little light on this debate, let us look at which actors profit the most from this enthusiasm for the Mediterranean Diet: Mediterranean producers through exports? The new producers in the non-Mediterranean countries? Multinational companies?

The evolution of production and exports in the Mediterranean

With regard to trends over the last decade, exports of two typically Mediterranean products, olive oil and fruit and vegetables have increased considerably. Olive oil is a good illustration, with exports rising between 1998 and 2008 by 631% in Lebanon, 60% in Spain and Italy, 50% in Portugal and 36% in Tunisia.

It is significant that exports have increased proportionally more than production: in Lebanon, olive oil production rose by 71%, in Spain by 23%, in Italy by 20%, in Portugal by 31%, and actually declined slightly in Tunisia. Thus, exports are growing faster than production. This means that the Mediterranean is highly attractive outside the region and Mediterranean peoples do not benefit from the increased local production, which is mainly exported. They can benefit indirectly in economic terms, provided that local farmers are also the exporters. Nothing is less certain, given that we are seeing more and more foreign investors setting up in business the Mediterranean (Spanish investors in Morocco).

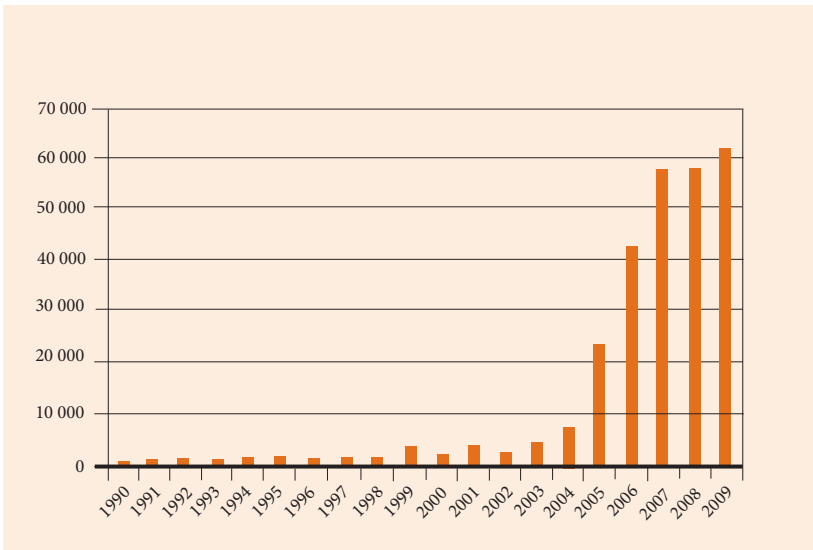
As regards fruit and vegetables, the same phenomenon can be observed: in Algeria and Egypt, exports doubled between 1998 and 2008 (105% and 100% respectively), while at the same time production rose by only 63% and 52% respectively. The same observation applies in Tunisia where production rose by 43% while exports increased fourfold (216%). And again in Turkey, 18% against 59%, Morocco, 28% against over 40% of exports. Lebanon has the most extreme situation, since, while production declined, exports, for their part, rose by 84%. In conclusion, we can say that we are witnessing a contradictory phenomenon, whereby the peoples of the southern Mediterranean are “deprived” of their production to the benefit of the importing countries.

The production and imports of Mediterranean products outside the Mediterranean

To ascertain whether a change of this kind has taken place outside the Mediterranean, it is worth seeing whether the increase in consumption is reflected either in increased production of the same products in the non-Mediterranean countries, or by an increase in imports of these products.

We therefore analysed the evolution of production and imports of certain emblematic products such as olive oil, olives, wine and grapes between 1990 and 2009 in seven countries: Argentina, Australia, Chile, South Africa, Japan, China and the United States. The most significant results relate to olive oil and olives in general. In almost all the countries, a clear trend can be seen towards an increase in production and/or imports, with striking situations such as in Australia. Nil in the 90s, almost non-existent until 2002, olive production in Australia rose by 45 times between 2000 and 2009. This olive production is almost entirely destined for the production of oil and not table olives. Olive oil production reached 6000 tonnes in 2009. Of course, it represents only one per cent of local oil production, but it is rising rapidly and it is a sign in favour of Mediterranean products. Among the various factors, the “Mediterranean” climate of the country’s southern coast (around Adelaide and Perth) has undoubtedly been favourable to the development of this industry.

Chart 5 - Olive production in Australia (1990-2009, in tonnes)



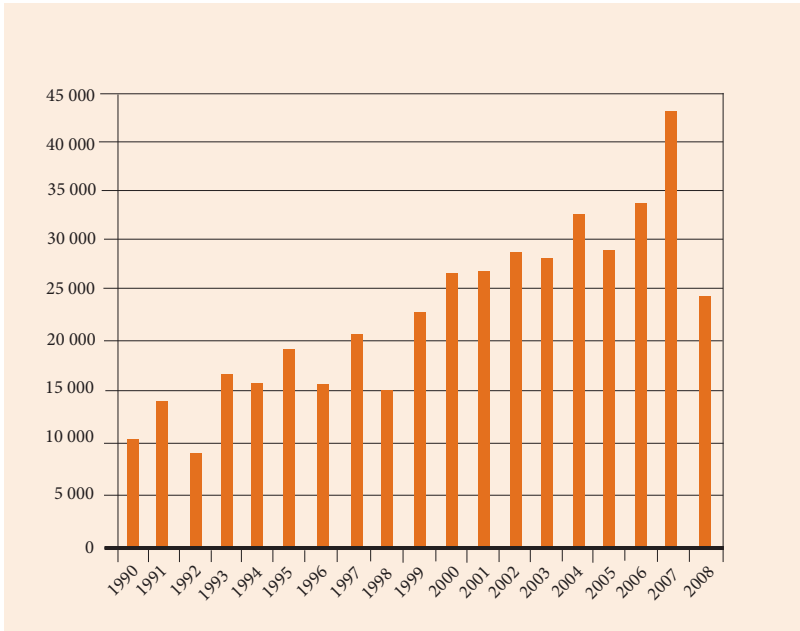
Source: FAOSTAT.

As the local market is far from being satisfied by local production, Australia imports olive oil on a massive and ever-increasing scale from the European Union (Italy, Spain), importing up to 45,000 tonnes per year. In the other non-Mediterranean countries, the trend is just as dramatic: imports of olive oil increased enormously in South Africa (700%) over the period 1990-2008, in the United States (152%), Japan (700%) and above all in China, where imports were 162 times higher in 2008 than in 1990.

Furthermore, in the olive oil producing countries, such as Argentina and Chile, production more than doubled between 2000 and 2009 in the former and rose by 50% in the latter.

As olive oil is chiefly consumed in the production zones, in other words, the countries of the Mediterranean region, foreign trade averages less than 20% of global production.

Chart 6 - Trends in olive oil imports in Australia (1990-2008, in tonnes)



Source: FAOSTAT.

The United States, with consumption of over 220,000 tonnes (almost all imported) have become the second largest world market for olive oil. There has also been a notable increase in olive oil consumption in Australia, as we have seen, and in Japan, Canada and Brazil, with consumption ranging from 25,000 to 45,000 tonnes per year in each of these countries (UNCTAD). Demand is for quality products, since it is extra virgin olive oil which is most sought after in these new markets. Italy and Spain are the principal suppliers.

Olive oil, a Chinese Mediterranean product?

To get a clear understanding of the interest in this product, it is enough to note that since 2004, a Salon dedicated to olive oil is held each year in Shanghai.

Although olive oil represents only a marginal part of the oil consumed in China (soya and palm oil are predominant), it is increasingly appreciated by the Chinese, especially the urban middle class. Thanks to the improvement in living standards, the recent opening to international markets, and the demographic importance of the country, we can regard the olive oil market as growing strongly. Sales of olive oil increased steadily between 2004 and 2008, with an average annual increase of 35% (Lazzeri, 2011). Moreover, imports are rising strongly, as between 2000 and 2008, volumes of imported olive oil almost doubled.

Domestic production is still very modest and it can be expected that olive oil consumption will long remain dependent on imports, with Spain, Italy and Greece as the main suppliers, with 40%, 30% and 20% respectively of imports (COI, 2010). Turkey,

Tunisia and France share the remainder of the market. Even though the Mediterranean countries remain the chief suppliers, it is noteworthy that new countries, which were not producers until recently, are becoming serious trading competitors. Such is the case of Australia, which is increasingly positioning itself in the top-of-the-range olive oil market and is beginning to compete with the Mediterranean countries, especially as Chinese consumption tends to be oriented towards quality branded products.



As far as wine is concerned, between 2000 and 2009, imports increased clearly in the United States (85%) and above all in Australia and China, where, in 2009, they were four times higher than in 2000. In the latter two countries, between 2000 and 2009, production also rose considerably: by 50% in China and 38% in Australia.

In the light of these few examples, we can see that international consumers have no soul: they demand more and more emblematic Mediterranean products but do not particularly care about their origins. Local production and imports increase at the same time. Driven by such powerful international demand, quality products are exported and become expensive on the local Mediterranean market. This has consequences for Mediterranean consumers who find themselves dispossessed of their traditional products.

Exploitation of the Mediterranean image by multinational companies

Companies use the Mediterranean image by identifying and using the elements which make Mediterranean food attractive to consumers. The more these elements elicit powerful motivational forces, the more effective they are. These elements can be classified in four themes related to identity, whence the power of the promises that Mediterranean food can convey:

The Mediterranean tuna to the benefit of Japan?

One example is the export of Bluefin tuna to Japan. While formerly the principal fishing area was the Atlantic, since the 1970s, this tuna has been fished primarily in the Mediterranean. Japan is almost the sole importer of this product, as it is the destination of 80% of production (Basurco, 2010). Like other fish, numbers of bluefin tuna have declined drastically since the 1970s, by two-thirds in the Mediterranean and 80% in the Atlantic. The EU sets fish quotas each year, but the restriction is not sufficient, especially as it does not allow for illegal catches. Imports of bluefin tuna by the Japanese result in over-exploitation of the Mediterranean’s natural resources and deprives Mediterranean consumers of a product which has become inaccessible because of the price. However, it should be emphasised that this phenomenon is not a *Mediterraneanisation* of the eating habits of the Japanese, at least as far as this product is concerned, since they are traditionally great fish eaters.

Source: FAOSTAT.

- Linking pleasure and health: renewing contact with nourishing food, doing away with the “hygienism” of the American food culture, promoting sensory sensitivity, overcoming the dichotomy between what is good and what is good for you. The revisiting of the Mediterranean Diet for its health benefits is helping to create something new out of the old and enshrines the Mediterranean Diet, a reconciliation due to the recognition by the elite of an ancestral folk knowledge.
- Promoting the southern European culture, with its diversity of flavours, colours, and establishing a Mediterranean identity.
- Mobilising a desire for rebirth and “reassurance” by a return to the roots. This trend can be explained by the gap between the production chain and the consumption chain, which gives rise to anxiety among consumers who are no longer able to clearly identify their food. It brings a demand for authentic, regional products, old-fashioned recipes, and local products.
- Raising awareness of environmental problems, conditions of production and manufacture of products, and companies which are “politically correct”.

Do non-Mediterranean agri-food companies profit from this trend in order to take advantage, perhaps to the detriment of the true character of Mediterranean food? We seem to be seeing an appropriation by multinational companies of the image of the Mediterranean Diet, which they exploit to add a certain appeal to their products.

To verify this hypothesis, we first analysed the websites of the top one hundred multinational companies in the world (in terms of turnover) to see whether and how they talk about *Mediterranean Diet* in relation to their specific products. The results do not match the preconceptions, since of the 100 companies, only seven offer, among their products, foods which have a connection with the Mediterranean Diet and actually refer to it in their marketing strategy. Even where health is the leading factor in their product promotion policy, it is not by the Mediterranean reference that their value is directly marked.

We therefore then decided to undertake a free web search to find companies in the world which mentioned the Mediterranean Diet, Mediterranean products, etc. on their website.

Finally, in total, we found and selected 34 companies in various countries²: 21 in the United States, 2 in Canada, 1 in Chile, 1 in Mexico, 1 in South Africa, 1 in the United Kingdom, 1 in the Netherlands, 1 in Belgium. In addition, we decided to include in the analysis, websites of companies in Lebanon (1), Greece (3) and Turkey (1) because, although belonging to the Mediterranean zone, these companies export worldwide and their websites seem rather to target potential customers outside the Mediterranean.

The questions to which we sought answers are the following:

- What products are offered?
- What do the messages highlight?
- What countries are associated with the Mediterranean?
- What images are used?

With regard to products marketed as Mediterranean, these are mostly transformed products, such as *tzatziki*, *baba ghanoush* (an aubergine puree from the Middle East), humus (chick pea paste), grilled vegetables in oil/vinegar, *tapenade* (olive and caper paste), dried tomatoes, *falafel* (chick pea or fava bean patties) or *dolmas* (stuffed vine leaves). These are *antipasti*, *meze*, *mezzeliks*, *tapas*, from various Mediterranean countries: Italy, Lebanon, Greece, Spain and especially the countries of the Mashrek.

Another important group of foods concerns, as might be expected, olives, especially olive oil. Among other products offered, we find pastas and tomato sauces, yoghurt, spices, rice and couscous, as well as nuts, avocados, and also anchovies and squid.

With regard to the messages which are conveyed and the arguments put forward, analysis shows that they are many but can be regarded as part of broader general themes. In analysing the websites, we retained five recurring features of the concept of *Mediterranean Diet*: The “health” argument; “good cuisine”, “good eating”; culture; nature and the natural environment; lifestyle. Very often these messages are multi-dimensional and touch on the different aspects of the Mediterranean Diet at the same time.

It is hardly surprising that “health” is one of the arguments most commonly advanced by producers and manufacturers. We know how consumers are more and more careful about their health and their food, especially in response to the latest events concerning food safety, and that they are aware of the benefits of eating certain foods. Moreover, in scientific terms, the evidence of the health benefits of the Mediterranean Diet has been confirmed for a very long time (chapter 3). The number of studies on this subject is more than abundant. Furthermore, the fact that the media have widely disseminated these “discoveries” has built up a close association between the Mediterranean Diet and health. This link is now well known by the majority of consumers.

2 - Companies analysed: Olives for you, Manischewits, California Avocado Commission, California Walnuts, Peanut Institute, Pompeian Oil, Oikos, Cedar's, Foodmatch, Lindsay Olives, Mooney farms, Mediterranean meals, McCormick, Sabra, Betty Crocker, Marrakesh express Mediterranean products, Peloponnese Greek Foods, Carbonell, Koipe, Sasso, Barilla Usa, Barilla Mex, Happy Camel, Mediterranean Flavours, Père Olive, Al Wadi Al Ahkdar, Olive to live, Gaea, Nestos, Mastihashop, 7 Cumbres, Bertolli, Spice land, Mediterranean delicacies.

In talking about the Mediterranean Diet, a considerable number of companies cite the famous “Seven Countries Study” by Ancel Keys, as well as the Mediterranean food pyramid suggested more recently by Oldways, which is derived from it. The focus here is primarily on the link between a specific type of consumption and the low rate of occurrence of cardio-vascular diseases and diabetes.

But they also talk about the Mediterranean Diet as a an aid to “keeping your figure”, as well as a source of nourishing products, or else a varied and balanced diet.

Another frequently used message is that of “eating well”: an excellent, creative cuisine, made from simple, quality ingredients, very fresh and homemade dishes, prepared with care, attractive in appearance, very tasty often with a strong, pronounced flavour. All this makes eating a “real pleasure”. At the same time, especially for countries with a younger civilisation, such as the United States, Australia and Canada, the Mediterranean immediately evokes the concept of history, culture, tradition, ancestral know how. Yet the Mediterranean is also a specific natural environment: it is the seaside, nature, the land, fertile, unpolluted, basking in sunshine, which yields natural products of very high quality. Finally, the Mediterranean Diet is not a way of eating, but a lifestyle in itself. It is conviviality, sharing a good meal and the pleasure of eating with friends and family, taking your time, slowing down, but it is also about an active life, involving exercise and vitality. It is happiness, enjoying life. The Mediterranean also evokes the hospitality and generosity which is expressed by sharing a good meal even with a stranger.

On several websites, the words are accompanied by pictures, which simultaneously convey several messages with great immediacy and effectiveness. One element which is always present in the pictures is, predictably, the sun, and also the sea, small seaside villages and ports. Pictures also evoke a specific natural environment, with olive trees, pines, cedars. We also find pictures of daily life, like shopping in the fruit and vegetable market, and the meticulous care taken in preparing a meal. Again, conviviality seems to be a central element which is found on several websites: a family around the table, friends sharing a meal in the garden, in the countryside, elderly friends laughing together. In the majority of cases, the countries most often associated with the Mediterranean are Greece and Italy. Other countries include Morocco, Spain, France and, occasionally, Lebanon, Syria, Egypt and Israel.

Inverted dynamics

We are witnessing a complex phenomenon of cross-cutting food trends which may lead to a genuine convergence in the long run. The countries of the Mediterranean area, while still retaining certain characteristics (olive oil, fish, fruit and vegetables) are now going through great changes in their traditional diet (less pulses and marked increase in animal products and sugar). Conversely, in the Anglo-Saxon and developed Asian countries, we can see signs of a partial Mediterraneanisation with the increase in consumption of olive oil, wine, fruit, while at the same time preserving their previous characteristics. This means that non-Mediterranean consumers are essentially attached to the structure of the Mediterranean Diet, its emblematic products and its great diversity of foods. The wide diffusion of the Mediterranean pyramid and the influence of international nutrition debates have no doubt contributed to this attraction, just at

a time when the Mediterranean countries are still adjusting to a northern diet. What creates problems is the pace and extent of this Mediterraneanisation of the non-Mediterranean world.

We asked the question, “Who benefits?”, the Mediterranean producers, the new non-Mediterranean producers, the multinational companies? As we suggested, the rest of the world is becoming a serious competitor of the Mediterranean region. If at present this favours production in the Mediterranean and its export (to the detriment of Mediterranean consumers) that can only be transitory, since production elsewhere is increasing rapidly.

In terms of multinationals, there is evidence of an appropriation of the image of the Mediterranean Diet by companies in the Mediterranean area, which they exploit to add a certain attractiveness to their products. They then link all the characteristics of the Mediterranean Diet to the lifestyle. Other multinationals, with a few exceptions, rather play on the general theme of health, nutrition, well-being, without specifically mentioning the Mediterranean.

Finally, the opening of global markets has contributed enormously to a fundamental change in the Mediterranean Diet. Somewhat paradoxically, it is through the northern countries that the Mediterranean model is seeking to recover lost ground. There is every reason to think that the Mediterranean Diet, a veritable social phenomenon, will most profit the non-Mediterraneans. Unless the recent recognition of the Mediterranean Diet by UNESCO as an intangible heritage upsets the apple cart once more.

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PART THREE

ENVIRONMENT
and biodiversity





CAN SUSTAINABLE CONSUMPTION PROTECT THE MEDITERRANEAN LANDSCAPE?

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The agrarian landscape, in its ecological, cultural, social and economic dimensions, is inextricably linked to our diets and to the food we eat. Food and landscapes share a multitude of attributes that confer them sustainability and contribute to human and natural well-being. Both are rooted in rurality, where most food is still produced. Both are profoundly cultural products. Both are produced traditionally and maintained by the same segment of society, the peasantry, which also happens to be among the most marginalised class of human society. Recently however, depeasantisation accompanied with an increasingly industrialised and globalised food production system has been delinking food from landscapes. Today, both landscape and food have become simplified and homogenised. Industrial farming is imposing new landscapes that are not connected with the lives of local people or the rhythm of the seasons, and this often results in an act of eating that is limited solely to rapid and over-calorific sustenance.

In the past two decades, a new concept of “sustainable foods” has emerged. The term refers to a category of products that are strongly linked to a positive, often romanticised, image of nature and farming. Sustainable foods are socially and ethically satisfying, and their consumption fulfils the needs of both mind and body. They include organic foods, local foods, fair-trade foods, natural foods, traditional foods, fine foods, specialty foods and other similar niche products. They can also be referred to as “alternative foods”, since their pattern of production, distribution and consumption differs from those of the predominant industrial food system. Sustainable foods are products of specific farming systems. These farming systems in turn, shape the agrarian landscape. The intuitive assumption is that, as sustainable foods, their impact on the landscape is positive at the ecological, economic, social and cultural levels. The aim of this paper is to review available evidence to verify the veracity of this assumption.

The main thesis is that the integration of sustainable food systems into the market-driven globalised economy cancels out any benefit accrued from adopting environmentally sound production methods. This is essentially due to the inherent incompatibility between market forces and sustainability. Any positive gain to landscape, environment, society and

culture is likely to be short-lived due to the nature of market forces and to the need to maximise return on investment. We deduce that the preservation of the Mediterranean landscape cannot be left to market forces, as is the case today in countries on the southern and eastern shores, and that State intervention is necessary in order to catalyse and enhance sustainability, as is the case today in countries on the northern shores.

The paper is divided into three sections. In the first two sections I give a brief overview of the evolution of the relationship between agrarian landscapes and the agro-food system, and in the last section I provide and discuss examples of sustainable consumption approaches and of their impact on the landscape and its components.

Agrarian landscapes

The term “agrarian landscapes” refers to the portion of the earth’s surface that is directly affected by the activity of farming and food production. This constitutes about two-thirds of the terrestrial surface of the planet, since about 31% is potential arable land and 33% is potential grassland (Penning de Vries *et al.*, 1995). In most cases, it is akin to the term “cultural landscapes” used by Farina (2000) to refer to “geographic areas in which the relationships between human activity and the environment have created ecological, socioeconomic and cultural patterns and feedback mechanisms that govern the presence, distribution and abundance of species assemblage.”

Capitalist agriculture and the new agrarian question

The global agro-food sector has witnessed dramatic changes over the past 20 years. In the supermarkets, where the food retail sector has become concentrated, new shelves and aisles have emerged creating a colourful globalised landscape. Shade coffee flown in from the rainforests of Latin America, organic products air-freighted from the banks of the Nile, fair-trade chocolate brought to us from Africa, local specialities delicately arranged in straw baskets, all of these “sustainable foods” are just a few examples of the choices available to the new, responsible consumer.

“Sustainable” is the new food

In the wealthier parts of the Mediterranean metropolises, new modes of gentrified food shopping have also appeared: stylish street markets, such as Beirut’s Souk el Tayyeb, have become tourist landmarks. The Eataly fine food complex in Turin enjoys Slow Food endorsement and operates like a sustainable foods superstore. To these one must add the wide network of street markets, speciality restaurants, fine food fairs and *Salones del Gusto*, all clear indications of the overwhelming success of sustainable foods. Even the Lebanese Islamic party Hezbollah participates in the movement; for the last 4 years, its social branch ‘Jihad al Bina’ has been organising an extremely popular one-week fair of traditional and local products, the “Ardi (My Land) exhibition”, which brings together hundreds of cooperatives and small producers from the four corners of the country.

In the upstream supply chain, sustainable procurement has become a new industry standard for the hospitality sector, where it is often blended with Corporate Social

Responsibility. Major companies such as Unilever, which often comes under severe criticism from green and social activists for its control of the food chain and for the environmental impact of some of its products, are today branching into “sustainable foods”. The certifying industry – Global Gap and others such as the Rainforest Alliance – offers its services in “greening” transnational corporations, which often have dismal environmental records.

Academia has also joined in: hardly a month goes by without a meeting, seminar, conference or workshop addressing one or other type of sustainable food on either side of the Mediterranean. There is little doubt that the sustainable food sector is here to stay. Although its percentage share of the global food trade is still in the single digit, it is steadily growing. Global organic sales alone were evaluated at \$50.9 billion in 2008, twice their value in 2003 (Willer et Kilcher, 2011). Between 2008 and 2009, the increase in the total organic land area in the Mediterranean region, including wild collections and organic farmland, exceeded 1.2 million hectares or 21 percent. About 150,000 farmers, most of whom are located in the EU Mediterranean countries, manage a total organic area that exceeds 6 million hectares.

Agriculture and environment: from subsistence to capitalism

The relationship between agriculture and environment is, to say the least, controversial. While ecologists and conservationists have traditionally regarded farming as a source of environmental damage, agriculture has also recently come to be recognised as a means of protecting and preserving the environment.

Indeed, one of the main goals of conventional agriculture is to reduce plant diversity in the farm plot to a single species environment. Closed nutrient cycles are replaced with open ones through the addition of synthetic fertilisers. This changes the nature of the ecological systems from cyclical to linear. Biodiversity is further reduced through the liberal use of biocides, which results in the simplification of ecosystems.

On the other hand, the concept of landscape multifunctionality, often used in the European Union’s Common Agricultural Policy to justify some of its subsidies, hinges on the notion that there is more to agrarian landscapes than food production. As the OECD puts it, “beyond its primary function of supplying food and fibre, agricultural activity can also shape the landscape, provide environmental benefits such as land conservation, the sustainable management of renewable natural resources and the preservation of biodiversity, and contribute to the viability of many rural areas” (OECD, 1998). Landscapes also have leisure functions, aesthetic functions, social functions, cultural functions and environmental functions. Biodiversity conservation is an important part of the latter.

To unravel this apparent contradiction, one must understand the evolution of farming through time, or rather the co-evolution of farming, landscapes and society.

The history of food production can be classed in four ages (Malassis, 1988). After a long period identified as “pre-agricultural” and dominated by a “primitive economy”, the invention of agriculture in the Mediterranean Basin nearly 10,000 years ago gave birth

to new forms of economies, which, following the expansion of capitalism, eventually developed into the market model. In the 20th century, the intensification of global trade and the specialisation of production that has accompanied economic globalisation led to the development of the global agro-industrial food production model. Most of the contemporary agrarian landscapes in the countries of the Global North are the outcome of this intensive and speculative capitalist agriculture, the products of which are rarely intended for local consumption. This new era has led to paradoxical changes in food availability, especially in countries of the Global North, where greater availability of total calories per capita has meant that hunger has been significantly reduced, but malnutrition, obesity and overeating and associated chronic illnesses have rapidly spread. Capitalist agriculture is also credited with having led to the decline of family farming, to the demise of local food systems, to the degradation of the environment and to the dramatic collapse of rural livelihoods.

These changes have been felt even more strongly in the southern part of the world, where colonialism forced the shift to industrial farming from the late 15th century onwards. Ndiaye (2004) points out that imperialism continued on the same path, this time relying on a class of rich compradorial elites operating modernised latifundia or serving as proxies for transnational agribusiness companies. The difference in productivity between poor peasant farming and industrial farming, which was 40:1 in 1948 was estimated at 2000:1 at the beginning of the 21st century. These gains in productivity cannot take place without the injection of capital into the farming system. That capital is used for importing production technologies which are often abusive and extractive, and this has resulted in the depletion of water resources, the erosion of local crop diversity, land degradation and the transformation of farmers into farm workers. The outcome for the countries of the South has been a great agricultural debacle and seemingly irreversible damage to local food systems, food security and food sovereignty. As a result, a new agrarian question has arisen that is expressed in terms of farming systems, labour, environmental resources, landscapes and livelihoods. In India alone, which is hailed as one of the greatest successes of intensive industrialised agriculture, a quarter of a million small farmers have committed suicide since 1995 (Center for Human Rights and Global Justice, 2011). However, it must be noted here that it is integration into an international market (globalisation) rather than the modernisation of production per se that is defining this new agrarian question.

The new agrarian question

The Agrarian Question was first posed by Karl Kautsky in 1899, who was trying to understand why small holdings in Germany were surviving despite the earlier prediction that farmers would become proletarianised within an industrialised capitalist agricultural sector. The question can be summarised as follows: “What are the dynamics of capitalist agriculture?” Kautsky predicted the demise of small farms under capitalism.

Kautsky’s predictions have only partly come true. While the world has witnessed an overwhelming shift towards intensive, industrialised agriculture, the breakdown of family agriculture has not been total. In both North and South, peasant movements such as the Confédération Paysanne in France and La Via Campesina, which brings together thousands of small-farmer movements around a food sovereignty agenda,

continue to resist the global takeover. In the richer northern countries, governments also offer subsidies to small farmers (under the label of landscape multifunctionality in the EU or in the Agri-Environment Schemes in the UK), which contributes to their resilience. In a recent article Paul McLaughlin (1998) addresses the agrarian question in the light of the (limited) survival of the family farm and provides thought-provoking analysis. He attributes the resilience of smallholder agriculture, *inter alia*, to the specific nature of agriculture and the peculiarities of land as a factor of production and to State intervention.

Unlike the rich countries of the North, family farmers in the South do not benefit from any subsidies or State support. The sector is left completely in the hands of speculators, unscrupulous investors and Bretton Woods structural adjusters. Confronted with global capitalism, family farms stand a much smaller chance of survival, and rural society will prove to be much less persistent. The tremendous numbers of rural migrants that swell the ranks of the urban poor in the Southern megapoles are just one expression of this disaster. In the words of Samir Amin (Amin, 2004; quoted in Ndiyaye, 2004) “Capitalism, because it cannot be dissociated from imperialism, [...] has created a new agrarian question in its peripheries, one of gigantic amplitude and which it is incapable of resolving without a genocide that will have as its victims half of humanity.”

It is widely accepted that the family farming model generally provides positive contributions to the landscape (Potter and Burney, 2002; Farina, 2000). In the context of this paper, the question can be reformulated as follows: can the “responsible” consumption of sustainable foods contribute to a humane solution to the new agrarian question? Can it contribute to the survival of small farms and to the positive social, cultural, economic and environmental benefits associated with family agriculture?

The spatial projection of the agrarian question

The agrarian question is reflected in the landscape, where its projection can be readily perceived. The study of landscapes, as the product of the interaction of human activity and the natural environment (Bürge *et al.*, 2004; Kizos *et al.*, 2010), offers a variety of advantages over the more traditional study of their isolated components. They can be readily apprehended through the five senses. Their layered nature reflects the state of their bio-physical as well as their socio-economic determinants.

The landscape as a palimpsest

Landscapes provide analytical frameworks appropriate to the study of holistic and complex systems, since they make it possible to synthesise information from fields as diverse as society, culture, politics and economics as well as on geology, pedology and ecology among many others (Riebsame *et al.*, 1996; Tress and Tress, 2001; De Klerk, 2007). Their multiscalar nature allows observations to be made at both field and territory level. Their systemic nature permits an understanding of the flow of material, ideas and actions underlying their appearance. Their dynamism in terms of both function and form allows a better grasp of the fundamental temporality of human and natural activity. Landscapes have been variously described as a “medium for the analysis of social perspective” (Makhzoumi, 2009), a tool for understanding political systems (Nassauer, 1995), and a

tool for evaluating changes in farming systems (Kizos *et al.* 2010). Their crucial importance lies in the fact that they provide an intuitive understanding that human activity is intimately linked with biophysical realities. In their tangible and intangible aspects, landscapes capture the realities of life in both its transient and its lasting dimensions. To take the landscape as a medium of analysis and as a research object is to oppose the specialisation movement that is affecting both economics and the sciences (Antrop, 2003).

People, landscapes and food

Landscape and food are closely linked, and represent two facets of a heritage, between which a mutual preservation relationship can be established. As the product of the people-environment interaction, they constitute the spatial expression of the agro-food system. It is in the surrounding landscapes that human societies obtain the resources necessary for their needs, especially their food. De Klerk (2007) astutely notes that the landscape is a product of innumerable daily chores that have ensured the subsistence of a population; landscape morphology can be associated with a certain type of livelihood that has evolved through time. Effectively, a local table is the reflection of the surrounding landscape. This is where one could find products that mirror the surroundings, the pulses and cereals fields and the presence of rangelands and of flocks tell of the origin of the dairy products. In industrialised landscapes, the establishment of a specialised form of agriculture on a territory will generally be accompanied with the appearance of new types of foods in households, foods that are often processed, imported and packaged.

Landscapes evolve with human history. They change in sync with diets and are affected by our eating habits; as Muchnik and Sainte Marie put it, “The power of the mouth is such that it can modify markets or reshape landscapes.” (Muchnik and Sainte Marie, 2010) For example, urbanisation and the development of new dietary practices in the past two decades have led to a rising demand for animal proteins. This has resulted in the spread of feed crops (mainly corn and soy) and the intensification of animal production into industrial battery farms. These new technological systems are highly vulnerable because they are extraordinarily simplified. They are the antithesis of natural, economic and cultural diversity and therefore of sustainability, and impose landscapes that are uniform and in which ecosystem function is much reduced (Farina, 2000). In China in the 1990’s, a strong demographic increase accompanied with the evolution of modes of consumption has been found to have profoundly affected the Chinese landscape (Liu *et al.*, 2005).

Landscape and food have become unlinked in many modern societies. What has remained is a mental image carefully manipulated by representations aimed at enhancing the consumption of industrial products, but which have only the most tenuous links with reality. The food advertising industry offers romantic images to accompany the consumption of packaged, factory-produced foods. These images effectively falsify the reality of industrial agro-food production, and build on the stylised and romanticised vision of a consumer who is seeking to purchase authenticity in a plastic wrapping from a supermarket shelf.

Researchers who have analysed people’s alienation from the landscape point out that alienation increases as farming becomes mechanised and less labour-intensive and rural society becomes atomised, and when the collective feeling of belonging to peasant society

disappears, along with the moral economy binding farmers to one another, farmers to landowners and farmers to the landscape (Vos and Meeke, 1999). As the limits of private property define the limits of social interaction, culture and society and habits become eroded. The landscape, as the litmus paper of local culture, is quick to show the signs of this decline in human-human relationships and in human-nature linkages. Farmers become agro-food workers, and the landscape management function is taken over by nature lovers, NGOs and conservationists. This segregation of function is detrimental to the sustainable management of the traditional cultural landscape, especially since it is oriented towards external markets (Vos and Meeke, 1999). There have been reactions to this situation, sometimes in romanticised form, including the back-to-nature movement that has prevailed since the mid 1990's and has included the infatuation with organic, "natural" foods, exotic foods, fair trade and other similar products and production methods.

Two shores, two stories

Landscapes and food can be mutually reinforcing or mutually degrading. For example, traditional "terroir" or local speciality foods acquire a value added through their link with the landscape. They are themselves sometimes associated with ecological and gastronomic tourism, which provides further opportunities to sustain livelihoods, and, theoretically, to conserve cultural landscapes. Other types of products, such as organics, can have a similar impact as their production systems are essentially designed to replicate the functioning of natural systems. A number of authors (Brunori and Rossi, 2000; Murdoch, 2000; Ventura and Milone, 2000; Hinricks, 2003; Sage, 2003) have referred to the mutually reinforcing links between "sustainable" production systems and landscape, but these links have not been unequivocally demonstrated through evidence-based research. Yet policymakers often act on the basis that these positive linkages are established facts.

Through appropriate policies, governments in Northern countries attempt to establish positive feedback loops between livelihood enhancement and landscape multifunctionality. An example of such policies is the UK Countryside Agency's "Eat the View" programme, which encourages people to buy their food locally and to visit, share and participate in country life (Matthews and Selman, 2006). Other State-subsidised programmes with direct positive influence on the landscape include the EU agro-environmental measure specifically directed towards organic farmers in Greece, which has helped with terraced land maintenance, along with the CAP policy for olive oil subsidies (Kizos *et al.*, 2010).

On the southern and eastern shores of the Mediterranean, the picture appears to be much bleaker. The family farming system is ailing, and State support is curtailed by structural adjustment policies and promises of bilateral free trade agreements and accession to the World Trade Organisation. But some aspects of capitalist agriculture are flourishing. Where the biophysical endowment permits, intensive export-oriented farms that draw heavily on non-renewable resources produce perishable goods destined for Northern palates. These include winter tomatoes, out-of-season strawberries and cut flowers, but also foods that are marketed under the "sustainability" heading such as organics, even when the latter are produced on industrially sized, capital-intensive sites. Competing on international markets requires injecting capital and reducing production

costs. This is most commonly achieved by increasing labour efficiency and reducing the quantity and type of labour involved, a process which inevitably leads to depeasantisation.

The operation of these industrial production sites relies today on farm workers who were previously small farmers. They are often migrant workers and receive a minimal, if any, compensation package and social security. While they toil during the day to produce quality foods for elite niche markets, they themselves survive on a diet essentially based on imported processed foods, originating from the subsidised northern surpluses. This exposes them to the vagaries of global food prices and increases their vulnerability. We have reported recently on the condition of Syrian female farm workers in the potato fields of Lebanon (Garçon and Zurayk, 2010). Morocco has witnessed a similar transition, and the plight of Moroccan women farmers-turned-farm-workers in the tomato fields and orange orchards destined for export to Europe has been amply documented in a recent article by Raimbeau (2009). One can rightly ask whether production systems that rely on the exploitation of humans truly deserve the appellation “sustainable” even if they satisfy several “green” criteria. At all events, reports point to the dramatic changes in the nature and morphology of the landscapes that accompany these globalised farming systems.

Intensive production systems often using heavy machinery and advanced technological inputs can destroy the secular palimpsest of rural landscapes in a few weeks. Around the Mediterranean Basin, for example, terraced lands are the main form of agricultural land suffering the brunt of modernisation. Difficult to access and with generally lower profitability, they are either abandoned or bulldozed and remodelled in order to install protected fruit cultures destined for export (Potter and Burney, 2002, and for a full recent review of the situation of terraced lands in the Mediterranean basin see Kizos *et al.*, 2010, and references therein). This is apparent in Lebanon, where the south of the country, the Jabal ‘Amel region, is being transformed as we write: the finely terraced hills are being covered with plastic hot houses, while villages expand into temporary housing for migrant farm workers providing low-cost labour; and the traditional cereal-producing hilltop fields, the terraced olive orchards, as well as the garrigue rangelands used for harvesting wild edible plants and for grazing sheep and goats are being bulldozed and flattened to provide locations for villas and urban developments.

Apart from the cultural heritage, it is also the natural heritage that is being shattered. Biodiversity is being seriously damaged by the need for profitability of modern agricultural systems. Landscapes are becoming more uniform in function and more fragmented in form, dealing a major blow to the original functionality of natural systems. The disappearance of ecological corridors and the homogenisation of the natural mosaics are threatening the survival and the reproduction of numerous wild species, many of direct economic importance. A recent study (spring 2010) by the American University of Beirut showed a significant decline in *Origanum syriacum* stands in rangelands and newly reclaimed land destined for export production. This plant is of high economic importance for local populations, since it forms the basis for the production of *zaatar*, a mixture of dried thyme and sumac and sesame seeds, widely consumed by the entire Lebanese population in one of the most traditional street and home foods: the ubiquitous *man’oucheh*.

The model of export-led farming divorces the producers from the food they produce. Food from somewhere becomes food from nowhere (McMichael, 2000). Depeasantisation deepens what Marx, in “*Capital*”, termed the “metabolic rift”. Articulated as a side effect of modernisation, and, by extension, of colonialism and development, the metabolic rift is the physical and psychological divide between people and the ecological consequences of their actions. This fissure has continued to grow and spread through the globalised food system leading to instances of ecological destruction and human negligence within food and its factors of production.

The social impacts of this rift can be very far-reaching. In their own minds as well as in those of consumers, the *fellahin*¹ (turned farm workers) are no longer associated with the essential service they provide to society. This separation from the historical food-producing landscapes has a strong negative impact on the image of the *fellahin* both in their own eyes and in the eyes of society. Intensive, capitalist export-led farming also changes the rural people’s and urban dwellers’ perception of the landscape. Instead of being a source of sustenance, the landscape is now valued on a purely monetary basis. It becomes a commodity subject to real estate speculation or a stylised image perceived through a lens often unrelated to local culture, and at times burdened with imported values. The Arabian steppe, the Badia, for example, was once a source of food and livelihood for nomadic pastoralists. The demise of the mobile small-ruminant production system and its replacement with intensive animal production units has turned the badia, which accounts for 80% of the area of the Arab world, into vast expanses of “useless” land. The repercussions on the value and perception of one’s own nation can be tremendous, since it implies that the Arab lands are worthless infertile wastelands rather than productive, life-sustaining landscapes. This paves the way for their exploitation in environmentally destructive mining or for speculation or even for their abandonment to foreign occupation.

In the remainder of this article, I will focus more on the relationship that links food consumption to landscapes and ask whether the act of consumption can contribute to changing one or more of the landscape components. I will focus specifically on biodiversity as one of the critical components of agrarian landscapes and of ecosystem function.

Can the invisible hand of the market preserve agrarian landscapes?

State-subsidised programmes such as the ones used in Northern countries are not the only tool available for preserving traditional modes of production and sustaining agrarian landscapes. Market-based approaches have been put forward as win-win approaches. The logic is simple (Boisvert and Caron, 2010): if there is a demand for sustainable foods, and a need to preserve landscape sustainability, one should be able to combine these two endeavours in a mutually beneficial relationship. Thus, developing trade in sustainable foods would, by extension, preserve agrarian landscapes. It is interesting to note that this approach is strongly promoted by NGOs and development organisations as well as charities dedicated to offering support to farmers and the rural poor in the countries of the South.

¹ - Arabic for peasants, usually refers to poor farmers.

A cursory review of the literature shows a multitude of reports linking the production, marketing and consumption of sustainable foods with the preservation of traditional modes of production any with the conservation of agrarian landscapes and of ecosystem function. There are, however, very few – if any – detailed, quantitative studies on the subject. Nor are there any reports indicating the spatial (region, field or plot) and temporal scale of the impacts. However, there are sufficient favourable reports indicating that the impact is positive in general and that the intuitive, but rational, inference that consuming more sustainable foods contributes to the enhancement of agrarian landscapes appears to hold in many cases. Some of these reports are presented in the next section.

Consuming fashion: sustainable foods and landscape conservation

There are many success stories on the union of consumption and landscape conservation goals. For instance, a plan to protect upland ecologies in the Abruzzo national park in Italy through an “adopt a sheep” network allows individuals to adopt a sheep in one of the flocks of one of the farms and receive in exchange food products from that farm (Holloway *et al.*, 2006). The programme, which also includes an agro-tourism component, is built around a cooperative business venture and aims to conserve the cultural landscape, specialty food products, animal breeds and the livelihood and traditions of small producers. One key reason for the success of the programme, according to the authors, is the support it receives from the wider “economy of care” practised in the European region in the form of donations, voluntarism and subsidies. The availability of infrastructure in remote areas, such as access to transport and communication technologies, has also been crucial to its success.

Further along the Mediterranean shores, studies were conducted to elucidate the reasons underlying landscape changes in the olive terraces of Lesvos, Greece (Kizos *et al.*, 2010). The authors’ conclusions indicate that one of the main reasons for which the terraced olive plantations and vineyards were maintained in some parts of the island was the local consumers’ demand for the high-value fruits and oil produced there. They also point out the critical role of the EU environmental subsidies programme in supporting smallholder terrace farmers.

Tress and Tress (2001) have reported on their study of 650 Danish farmers, which addressed the relationship between landscape and organic and conventional farmers. They found, expectedly, that the expansion of organic farming changed the nature of the landscape, and they predicted that further increase in the demand for organic products would strengthen this trend. This, they proposed, should guide agricultural policies and subsidy principles.

Boisvert and Caron (2010) reviewed the potential impacts of Geographical Indications (GIs), Fair Trade and Organic Products on biodiversity conservation. They rightly point out that of these three sustainable food approaches, the link with in-situ, plot-level biodiversity conservation is only evident in the case of organic production. While fair trade aims at improving the distribution of profits from traded goods produced by small community groups, GIs are primarily a tool for territorial development. According to the authors, the capacity of GIs to protect landscapes and biodiversity is not inherent,

and depends strongly on the content of the legislation defining them. One of their strongest nature-protecting attributes is their ability to protect traditional varieties and land races.

The potential role of the French GIs in the preservation of biodiversity and of landscape integrity was recently addressed by Bérard and Marchenay (Bérard and Marchenay, 2006). They provide a comprehensive list of French GI success stories including Ardeche chestnuts, which contribute to the preservation of the local forests, cider, calvados and perry from Normandy, where the GI is associated with specific traditional varieties and with orchard landscapes, Charolais beef, which requires special management and preservation of the grasslands, and Dombes carp, the production of which allows the conservation of the ponds landscape specific to the area, among many others.

While the GI approach appears to have resulted in definite successes in landscape and biodiversity conservation in France, reports from the South do not appear to show the same degree of optimism.

In a recent comparative analysis of the potential biodiversity conservation gains of four GIs from the South, the authors imply that the commercial aspects of the production of Pico Duarte coffee in the Dominican Republic, South African Rooibos, Mexican Tequila and Brazilian Pampa beef still take precedence over the environmental dimensions (Chapados and Sautier, 2009). In other words, if the market for these products does not justify their protection, then their landscape conservation dimension will not be pursued. The authors are optimistic, however, that biodiversity and landscape conservation is increasingly becoming part of the specifications of these products. The authors' findings are echoed by others (Greissing *et al.*, 2009), who evaluated the potential role of GIs in the preservation of biodiversity in the case of the Iratapuru Brazil nut and the babaçu nuts of the Ciriaco reserve in Brazil.

In both cases, the producers focused more on the socio-economic aspects of the GI rather than on its environmental dimension. The authors find that “the preservation of wild and domestic biodiversity is not yet guaranteed”. In their analysis, they point to the aberrations caused by overemphasis on market forces, which drives producers to abandon traditional crop varieties in favour of the more productive cultivars released by research centres. Reports from India (Garcia *et al.*, 2009) investigate the use of market tools associated with GIs to conserve agroforestry landscapes in the Kodagu district of Karnataka State, where up to 30% of the forest cover has been lost due to the intensification of coffee production. The authors find that while GIs may have prevented the disappearance of local varieties, their impact on landscape and biodiversity in general remain insignificant. They attribute this shortcoming mainly to structural and legislative factors.

The power of the market and the lure of larger profits can have detrimental effects on the conservation of landscape and biodiversity, even in the case of traditional food production. Our recent, as yet unpublished, research shows that while the demand for *qamareddine*, the traditional apricot paste made in Damascus, is still on the rise, the process is changing in a way that does not capture any of the environmental benefits theoretically associated with traditional foods. *Qamareddine* used to be made from the local “*kleibi*” variety of sour apricots grown exclusively in the Ghouta area of Damascus. Today, it is manufactured

from fruits harvested from modern high-yielding varieties grown in any location in Syria or elsewhere. Moreover, the sugar content of the paste is today increased by addition of imported corn fructose syrup. Thus, in the absence of strict regulations endorsed by producers, the success of a traditional, apparently “sustainable” food can spell the demise of its positive externalities on biodiversity, landscape and environment.

However, there are other indications of success from the same region. A recent (still unpublished) survey (Mourad, 2011) of 10 Lebanese women’s cooperatives specialising in the manufacture of traditional foods showed that more than 75% of their raw materials originate from the immediate surroundings. These include vegetables for pickling, almonds, carob molasses, olive oil, wheat, goat’s milk and many other items. The sale of these products through local and urban networks such as the Beirut farmers’ markets or the Ardi fair ensures that rural livelihoods are sustained and that some patches of traditional landscape remain preserved.

Sustainable landscape in the invisible hand of the market: an inherent contradiction?

It appears from the available documentation, very little of which originates from the Mediterranean region, that the successes of the market-driven approach to landscape conservation are more prominent in the North, where it is coupled with strong agricultural policies and State subsidies, than in the South, where structural support is unavailable to producers of sustainable foods. This North-South dichotomy has been addressed in the context of the transfer of the GI model to Mauritania (Boulay *et al.*, 2009). The authors point to the paradox that the GI system in the South is geared mainly to enhancing the exportability of typical products, and that it results in few, if any, benefits for local consumers. Incidentally, our work on the GI project with the Ministry of Economy and Trade in Lebanon, in which I served as a senior expert, suffered from the same shortcomings. Other issues need to be resolved if sustainable foods are to play an effective role in landscape preservation. These include the folklorisation of traditional know-how and the paternalistic approach of northern NGOs exhorting rural people from the developing nations to conserve their heritage, which can stifle sustainable modernisation. Other issues, including efforts to seek endorsement and recognition from international organisations such as Slow Food for the sake of improving positioning on the export market, may contribute to deepening inequalities, since only a limited number of producers can meet Slow Food standards. Similar issues have been raised by authors who lament the commoditisation of sustainable foods and find in it a major obstacle to agrobiodiversity conservation and who argue that differences in the social capitals of producers or producer collectives rather than the intrinsic qualities of their products enable them to succeed in capturing a larger share of the sustainable food market, thereby deepening social inequalities (Lotti, 2010).

The danger of sustainable foods enhancing existing inequalities is not limited to the countries of the South. The “ecologisation” of farming in France and the perplexity of farmers divided between their traditional function of technical and economic producers and their new function of environmental stewards, which many feel is imposed upon them as a condition for survival, has also been addressed (Deuffic and Candau, 2006).

The authors contend that the ecologisation of agriculture does not benefit all farmers equally, due to the variation in subsidies, which are proportional to land ownership, and to the potential marginalisation of some farmers.

Is “local” always sustainable?

The global-local binary and the idea that these two notions are essentially incompatible have come under challenge (Lotti, 2010; Lockie, 2009; Alkon, 2008). These authors contend that localism can readily be absorbed within neoliberal logic and that local food systems do not pose a serious threat to capitalist, industrial agriculture. They rightly point to the large number of mega-corporations which are investing in sustainable foods as a sideline from their involvement in the globalised agro-food system. These include Danone, for example, which owns an organic brand – Stonyfield – that is marketed as “local” in New Hampshire (USA). Similar comments can be made regarding major supermarket chains such as Carrefour or Walmart which offer organic and fair trade products and products specific to local areas. In this context, organic foods will soon be similar to conventionally produced foods, but with organic inputs replacing synthetic ones, irrespective of the environmental or the social and cultural equity dimensions. Sustainable foods are liable to lose their soul and their positive landscape impacts if they become mere marketing tools that are positioned to capture price premiums for discerning consumers.

Conclusion

This cursory review can but offer a limited insight into the relationship between the “responsible” production and the consumption of sustainable foods and landscape conservation. However, it can serve to outline the situation. The true challenge to the effectiveness of sustainable consumption in contributing to the sustainability of landscape may well be in the total reliance on the market as a driver of positive environmental change. Markets, especially when operating in the absence of any control, as is the case in countries of the South, function according to a profit maximisation logic premised on individualism and self-interest, while environmental integrity is a social goal that needs to be framed within collective action. In the absence of a legislative structure of public good overseen by local or central government it is doubtful that individual market decisions can be successful in conserving agrarian landscapes.

An essential recommendation emerging from this document must be to integrate State support into sustainable production and into the conservation of agrarian landscape in both South and North. While this approach may be anathema to those who preach the Bretton Woods gospel, it is essentially the only available option, as the Northern countries know very well. International support must be rallied with this in view, as many of the southern agrarian landscapes are part of a global human cultural and natural heritage, a true “heritage of humanity”. These include, but are not limited to, the rolling hills of Al Jaleel in Palestine and the olive orchards on the stone-walled terraces of the Mediterranean mountains.

This review has also shed light on the dearth of evidence connecting sustainable consumption with landscape and environmental conservation. Research centres and academic institutions must engage in such analysis and provide reliable information

and analysis in order to guide policy-making. Here, the role of the CIHEAM network with its facilities and its commitment cannot be overstated.

Finally, this document must also be seen as an invitation to collective action by the multitude of actors that operate in the rural-agrarian sphere. Farmers and farming communities are only one link in the complex chain that unites humans with nature, their only source of sustenance. Citizen engagement, in its various forms, is the most essential prerequisite for durable and sustainable harmony between people and their environments. It is citizens who pressure governments into change, and citizens who are the first to bear the brunt of destructive economic systems. It is interesting to note that in Tunisia, as in Syria and to a large extent in Egypt, the wave of protests originated in rural towns and was led by rural people or migrants from rural areas, whose farming systems, livelihoods, and agrarian landscapes had been damaged and destroyed by neo-liberal policies. As political events in the Mediterranean Basin continue to unfold, we must remind ourselves that collective people power can be a progressive force of change that can move mountains and reshape political as well as agrarian landscapes.

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NATURAL RESOURCES AND FOOD IN THE MEDITERRANEAN

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When one considers the exhaustion of fossil energy reserves, limited soil capacities, the degradation of ecosystems, climate change and global warming, unbalanced diets, and population increase, the current food system cannot be regarded as sustainable. Action to implement a strategy that promotes the concept of sustainable diets is thus a matter of urgency. Diets are a significant factor in a number of critical sustainability issues such as climate change, public health, social inequalities, biodiversity, the use of energy, land and water, and so on (Reddy *et al.*, 2009).

The FAO (2010) defines a sustainable diet as one that ensures food for future generations, while generating minimum negative impact on the environment. It consists of food that is produced locally and is thus available, accessible and affordable for all as well as being safe and nutritious; it furthermore protects the incomes of farmers and other workers as well as the cultures of consumers and communities. A sustainable diet places nutrition, food and biodiversity at the core of sustainable development and people's right to food. In order to be considered sustainable, Mediterranean Diets should thus, *inter alia*, have low environmental impact, protect and respect biodiversity and ecosystems, and optimise the use of natural resources.

Diets affect various factors – agricultural, nutritional, environmental, social, cultural, economic – which interact with one another. From this point of view, the Mediterranean is a region where many issues (biodiversity loss, soil erosion, water scarcity, etc.) that are directly or indirectly related to Mediterranean food consumption patterns should be addressed as priorities (Lacirignola and Capone, 2010).

The aim of this paper is to provide an overview of natural resources in the Mediterranean region and to analyse the main environmental impacts of Mediterranean food consumption patterns on land and water resources and biodiversity.

Water and land resources in Mediterranean countries

In the Mediterranean region, water resources are limited, fragile and unevenly distributed over space and time. Southern-rim countries are endowed with only 13% of the total

resources (Blue Plan, 2006). Irrigation accounts for almost 65% of anthropogenic abstraction and can even exceed 80% in the southern and eastern Mediterranean countries (Thivet and Blinda, 2007). The seasonal nature of rainfall plays a crucial role in water stress, since the water demand of certain Mediterranean crops coincides with the periods of lowest rainfall and water availability (Fernandez and Mouli rac, 2010).

According to the projections of the Blue Plan, which takes the year 2000 as the base year, water demands could increase by a further 15% by 2025, especially in the southern and eastern countries, where an increase of 25% is expected. Furthermore, Mariotti *et al.* (2008) have predicted an average decrease of 20% in surface water availability by 2070-2099, with a decrease in soil moisture and river runoff, and a 24% increase in the loss of fresh water over the Mediterranean region due to precipitation reduction and warming-enhanced evaporation. In fact, the impact of climate change on the Mediterranean environment is already noticeable (Blue Plan, 2008). Measures to improve water demand management, water saving and the rational use of water, especially in agriculture, are thus of paramount importance in the region. In fact, the estimated overall water use efficiency for the Mediterranean countries ranges from 50% to 85% (Thivet and Blinda, 2007). Water demand management measures can free up significant amounts of water. They are economically worthwhile if they provide a means of maintaining the water supply where it is a limiting factor. Although the market can create a preference for crops that consume smaller amounts of water, incentives and regulatory measures must also be explored (Fernandez and Mouli rac, 2010).

The various forms of land degradation, particularly erosion, are as old as the region (Blue Plan, 2003), and new threats have appeared in modern times in connection with the social and economic upheavals of recent years, poor farming intensification in certain sectors, encroachment on space by urbanisation and infrastructures, urban and industrial waste pollution, and so on.

Diversity of plants, crops and farming systems in the Mediterranean

The current era is one of unprecedented threats to biodiversity. Fifteen out of 24 ecosystem services are assessed as being in decline (Steinfeld *et al.*, 2006). The genetic diversification of food crops and animal breeds is diminishing rapidly. In fact, at the beginning of the 21st century it is estimated that only 10% of the variety of crops that have been cultivated in the past are still being farmed, many local varieties being replaced by a small number of improved non-native varieties (Millstone and Lang, 2008). Only some 30 crop species provide 95% of food energy in the world, whereas 7000 partly or fully domesticated species are known to have been used for food; these include many of the so-called underutilised, neglected or minor crops (Williams and Haq, 2002).

Biodiversity in the Mediterranean hotspot

The Mediterranean basin Biodiversity Hotspot (MBH) is the second largest hotspot in the world. It covers more than 2 million square kilometres and stretches west to east from Portugal to Jordan and north to south from northern Italy to Cape Verde. It is one

of the greatest areas for endemic plants on earth and includes several epicentres of plant diversity. Three main circumstances have contributed to the high diversity of the MBH: (i) its location at the intersection of two major landmasses (Eurasia and Africa) and (ii) tremendous topographical diversity and huge differences in altitude. Its climate is unique, but rainfall ranges from 100 mm to 3,000 mm, resulting in high vegetation diversity within the region.

These combined factors make the MBH the third richest hotspot in the world in terms of plant biodiversity (Mittermeier *et al.*, 2004). Approximately 30,000 plant species occur there, and more than 13,000 species are endemic to the hotspot; yet many more are being discovered every year (Radford *et al.*, 2011). The MBH is a centre of plant endemism, with 10% of the world's plants found in about 1.6% of the earth's surface. The hotspot, a surface area one-fourth the size of sub-Saharan Africa, has roughly the same plant diversity as the entire area of tropical Africa (CEPF, 2010).

The forests of the Mediterranean are diverse, harbouring up to 100 different tree species. Moreover, it is estimated that the Mediterranean Sea contains 8% to 9% of all marine species in the world (Sundseth, 2009). In the Mediterranean basin, there is tremendous topographic, climatic and geographic variability resulting in an astounding array of species and habitat diversity. The World-Wide Fund for Nature (WWF) has listed 32 eco-regions occurring in the Mediterranean hotspot. There are three broad types of vegetation: maquis, forests, and garrigue (CEPF, 2010), the maquis being nowadays the most widespread. Many of the endemic and restricted-range plant species depend on this habitat, and several are thus threatened (Tucker and Evans, 1997).

Changes in diet, especially an increase in meat consumption, have generated an increase in diet-related diseases but are also having an impact on biodiversity. The livestock sector is considered to be one of the major players in the reduction of biodiversity since it is one of the primary drivers of, *inter alia*, deforestation, land degradation, pollution, climate change, the erosion and sedimentation of coastal areas and the facilitation of alien species invasion (Steinfeld *et al.*, 2006). Some 306 of the 825 terrestrial eco-regions identified by the WWF reported livestock as one of the current threats; 23 of 35 global hotspots for biodiversity identified by Conservation International are reported to be affected by livestock production. And an analysis of the Red List of Threatened Species issued by the IUCN (International Union for Conservation of Nature – formerly World Conservation Union) shows that most of the world's threatened species are suffering habitat loss where livestock is a factor (Baillie *et al.*, 2004).

Diversity of crops and farming systems in the Mediterranean

The importance of the Mediterranean in terms of crop diversity, is illustrated by the fact that about one-third of the foodstuffs used by humankind comes from the Mediterranean climatic region, if not strictly from the topographic basin proper (Harlan, 1995). Barley, wheat, oats, olives, grapes, almonds, figs, dates, peas and other innumerable fruits and vegetables as well as medicinal or aromatic herbs are derived from wild plants found in the Mediterranean region (Sundseth, 2009).

The Mediterranean basin was one of the eight centres of cultivated plant origin and diversity identified by Vavilov (1951), who listed over 80 crops, the most important,

however, being cereals, pulses, fruit trees and vegetables. There were also many herbs, spice-producing plants, horticultural crops, and ornamentals (Heywood, 1998). Several socio-political, agro-climatic, ecological and genetic factors have contributed to this remarkable crop diversity in the Mediterranean (Jana, 1995).

Agricultural lands and grasslands occupy 40% of the Mediterranean region, ranging from large intensive olive or citrus groves to more mixed farming systems. With some 17 million farms, the Mediterranean region has an agricultural labour force of millions of people (Elloumi and Jouve, 2010). The low intensity and localised nature of thousands of years of subsistence farming has had a profound effect on the landscape, creating a complex mosaic of alternating semi-natural habitats rich in wildlife. Vineyards and ancient olive groves are also still a characteristic feature of the Mediterranean landscape. On flatter land and in the plains various forms of sustainable agro-sylvo-pastoral farming systems have evolved that make best use of natural resources (Sundseth, 2009).

However, whilst small-scale farming is still practised in many parts of the region, the last 50 years have seen a massive change in agricultural practices. Ancient vineyards, orchards and olive groves have been ripped out to make way for industrial-scale fruit or olive plantations, and mixed rotational farming has been replaced by intensive monocultures. This has caused the loss of wildlife-rich habitats (Sundseth, 2009).

Due to their high demand for pesticides, fertilisers and irrigation water, modern farming practices put excessive pressure on the environment. More than 26 million hectares (ha) of farmland are now under irrigation in the Mediterranean basin and in some areas up to 80% of the available water is used for irrigation. The rapid growth in tourism and urban development in coastal areas combined with the abandonment of small-scale farming practices is putting tremendous pressure on the Mediterranean region's rich biodiversity (Sundseth, 2009).

Analysis of Mediterranean farm structures reveals that there are a large number of small farms (less than 5 ha) on both the southern and the northern shores, especially in Greece (76% of farms on 27% of the agricultural area), Italy (77% of farms on 17% of farmland), Morocco (71% of farms on 24% of farmland) and Turkey (67% of farms on 22% of farmland) (Elloumi and Jouve, 2010).

Diversity of plants consumed in the Mediterranean

Mediterranean food consumption cultures use different types of cultivated and spontaneous plants, thus promoting the use and conservation of biodiversity. Mediterranean Diets are far from homogeneous; they involve a wealth of typical products and are extremely varied. It is that diversity which provides a certain level of nutritional and social well-being for the various populations (Padilla, 2008). The general term "*Mediterranean diet*" inevitably implies a common dietary pattern in Mediterranean countries. This is not the case, however, since there are obvious differences in the dietary patterns of the Mediterranean populations (Trichopoulou and Lagiou, 1997). This "*dietary polymorphism*" partially reflects religious and cultural differences (Manios *et al.*, 2006). It is interesting to note that significant dietary differences can be observed even within the same country. In Italy, for instance, the consumption of cereals, fruit and vegetables is higher in the southern part of the country (Lupo, 1997).

In many rural regions, especially in southern and eastern Europe, non-cultivated food plants are still gathered (Heinrich *et al.*, 2005). Local foods represent a type of mutual interaction between the availability of edible plants that grow locally and the nutritional requirements and needs of populations. In general, wild varieties tend to be richer in micronutrients and bioactive secondary metabolites than those which are cultivated. These secondary plant metabolites are produced in adaptation to local environmental conditions (Heinrich *et al.*, 2006). The diversity of local Mediterranean food elements is not well known. Edible wild plants and weeds are interesting local elements in Mediterranean food cultures. Ethnobotanical research has identified about 2,300 different plant and fungi taxa that are gathered and consumed in the Mediterranean. The percentage of local Gathered Food Plant (GFP) taxa is higher in the main diversity centres on the periphery of the Mediterranean (Sahara, Alps, Caucasus, Canary Islands, the Levant) and islands (Sicily, Sardinia, Crete, Cyprus). In an ethnobotanical survey carried out in the Montseny mountain range (in Catalonia, Spain), Bonet and Vallès (2002) recorded the consumption of 132 GFP taxa. As for North Africa, Gast (2000) reported exhaustively on 80 species of wild vegetables and grain food plants used by Berber groups during the famine season (December to March) in the Ahaggar region (Algeria). Wild and spontaneous food plants are also widely used and consumed in Italy.

Use of wild food plants in Italy, especially in Apulia and Sardinia

A flora of 11,000 plant species

Although Italy covers only one-thirtieth of the European continent, it has a flora of 11,000 plant species, that is to say, half of those that exist in Europe. There are areas in southern Italy which could be considered the geographical origin of 542 taxa (Hammer *et al.*, 1992). There are 880 food plants that are gathered and consumed in Italy (Bianco *et al.*, 2009). Sardinia has the highest proportion of GFPs – 257 taxa out of some 2,100 in the vascular plant flora category (Atzei, 2003).

The domestication of wild species

A recent research study showed that 532 plant species are currently consumed in the Apulia region (south-eastern Italy) out of 2,500 representing the flora of the region. Of these 532 species, 104 belong to the *Asteraceae* family and there are 44 *Lamiaceae*, 40 *Brassicaceae*, 38 *Fabaceae*, and 29 *Amaranthaceae* and *Apiaceae*. There are 304 genera, the most important being *Allium* (12), *Chenopodium* (10), *Vicia* and *Rumex* (9), *Amaranthus*, *Plantago* and *Crepis* (7), and *Salvia* and *Valerianella* (6).

The domestication of wild species has never stopped in Italy. In fact, for 122 that have been identified in the Apulia region there have been attempts to grow species of wild edible plants in open fields and/or in greenhouses. One of the most successful examples of domestication that can be mentioned is that of *Diplotaxis tenuifolia*: domestication started 20 years ago and the plant is now grown on more than 1000 ha of greenhouses in Italy (Bianco *et al.*, 2009).

The main environmental impacts of food consumption in the Mediterranean

Diets vary widely around the world and have co-evolved over thousands of years due mainly to the influence of environmental, social and economic conditions (such as climate, ecology, biodiversity, etc.) (Millstone and Lang, 2008). There is growing evidence of the impact of diet on health, including a higher risk of obesity, cardiovascular disease and cancer, and also of its role as a social indicator (Reddy *et al.*, 2009; Hawkesworth *et al.*, 2010). The sustainability of the food system and of food consumption is not only a question of health concerns; it is also about environmental impact. According to one large-scale European study, food and drink accounts for an estimated 20% to 30% of the environmental impact of all consumption (Carlsson-Kanyama *et al.*, 2003).

The environmental food pyramid or double pyramid

Healthy eating habits

Healthy eating habits reduce the risk of diabetes and major coronary events. They also offer considerable health benefits to individuals and contribute to public health in general (Esposito and Giugliano, 2006; Brunner *et al.*, 2008). In particular, the food pyramid illustrating Mediterranean dietary traditions has been associated historically with good health (Willet *et al.*, 1995). Many other studies have provided strong evidence that higher conformity with the Mediterranean dietary pattern has a beneficial effect on the risk of death from all causes, including cardiovascular disease and cancer (Sofi *et al.*, 2008; Esposito and Giugliano, 2008).

Food that respects the environment

The recommended food pyramids, such as the Mediterranean pyramid, not only offer considerable health benefits but also respect the environment. In fact, the various food groups can be evaluated in terms of their environmental impact. Reclassifying foods on the basis of their negative effect on the environment rather than in terms of their positive impact on health produces an inverted pyramid where the foods with greater environmental impact are at the top and those with lower impact at the bottom. When this new Environmental Pyramid is brought alongside the Food Pyramid it creates an Environmental Food Pyramid known as the “Double Pyramid”. It shows that foods with higher recommended consumption levels are also those with lower environmental impact. This unified model shows that if the diet suggested in the traditional Food Pyramid is followed, not only do people live better (longer and in better health), but the impact – or better, footprint – left on the environment is also decidedly reduced (Barilla Center, 2010).

The environmental Pyramid illustrates the environmental impacts of diets. Its design is based on the precise evaluation of the impact of the various foods using the Life Cycle Assessment method. By eating responsibly, humans can definitely reconcile their personal well-being (personal ecology) with the environment (ecological context) (Barilla Center, 2010).

Taken as a whole, agriculture is the largest single source of greenhouse gas emissions in the food chain (Carlsson-Kanyama, 1998), meat and meat products being the largest contributor (Sinha *et al.*, 2009). In addition, food production has major implications for biodiversity at the global level, including habitat loss and pollution as well as an

impact on water and land use (Reddy *et al.*, 2009). Furthermore, disruptions of environmental integrity can affect patterns of human health and disease as well as nutritional status. However, acknowledging that the *loss of biodiversity and other environmental changes affect diet and health* is usually limited to general considerations of food security, and little attention is paid to the complexity of nutrition-health relationships (Johns & Eyzaguirre, 2002). The footprint concept is a method for addressing environmental impact; it comprises the Ecological Footprint (EF), the Carbon Footprint (CF) and the Water Footprint (WF).

The environmental impacts of diets

Environmental impacts include the Carbon Footprint (generation of greenhouse gas), the Water Footprint (use of water resources) and the Ecological Footprint (use of land resources).

The Ecological Footprint

According to Ewing *et al.* (2010a), the Ecological Footprint = Population × Consumption per person × Resource and waste intensity. The Ecological footprint is a method for answering the question of how much of the regenerative capacity of the biosphere is taken up by human activities (Schaefer *et al.*, 2006). Biocapacity refers to the capacity of ecosystems to produce useful biological materials and to absorb waste materials generated by humans, using current management schemes and extraction technologies (GFN, 2011). Biocapacity is a method for answering the question of how much of the renewable resources have been made by the biosphere's regenerative capacity (Schaefer *et al.*, 2006). According to Schaefer *et al.* (2006), the EF is a renewable resources accounting tool that is used to address the underlying issue of sustainable consumption. In fact, the EF has emerged as the world's foremost measure of humanity's demands on nature (GFN, 2011). It measures how much land and water area a human population requires in order to produce the resource it consumes and to absorb its carbon dioxide emissions, using the prevailing technology (Schaefer *et al.*, 2006).

The Carbon Footprint

The CF - which is a measure of the exclusive total amount of CO₂ emission that is directly and indirectly caused by an activity or is accumulated over the life stages of a product (Wiedmann and Minx, 2008) – represents 54% of humanity's overall EF and humanity's CF has increased more than 10-fold since 1961 (GFN, 2011).

The Water Footprint

The last dimension of the environmental impact is the WF, i.e. the demand of freshwater resources required to produce goods and services. The WF is a measure of man's appropriation of freshwater resources: freshwater appropriation is measured in terms of water volumes consumed (evaporated or incorporated into a product) or polluted per unit of time (Mekonnen and Hoekstra, 2011).

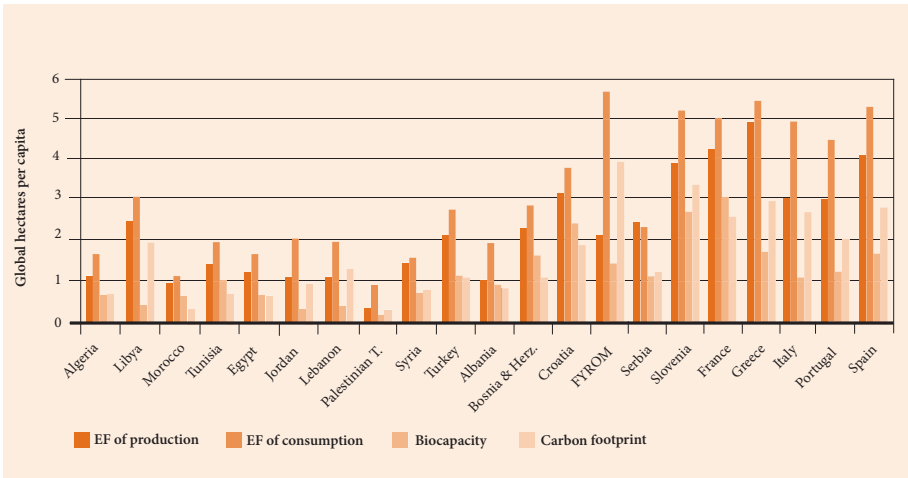
Assessment of the ecological and carbon footprints

The EF calculation methodology on the national scale has been explained in full by Ewing *et al.* (2010a, 2010b). The EF measures appropriated biocapacity, expressed in global average bioproductive hectares, across six major land use types (*i.e.* cropland, grazing land, fishing grounds, forestland, carbon footprint, and built-up land). With the exception of built-up land and forest for carbon dioxide uptake, the EF of each

major land use type is calculated by totalling the contributions of a variety of specific products. The EF of built-up land reflects its bioproductivity compromised by infrastructure and hydropower. And the EF for forestland for carbon dioxide uptake represents the waste absorption of a world-average hectare of forest needed to absorb human-induced carbon dioxide emissions, after having considered the sequestration capacity of the ocean.

In order to keep track of both the direct and indirect biocapacity needed to support people's consumption patterns, the EF methodology uses a consumer-based approach; for each land use type, the EF of consumption (EFC) is thus calculated as: $EFC = EFP + EFI - EFE$, where *EFP* is the EF of production and *EFI* and *EFE* are the footprints embodied in imported and exported commodity flows respectively. EF assessments aim to measure demand for biocapacity by final demand, but the EF is tallied at the point of primary harvest or carbon emission. Thus, tracking the embodied EF in derived products is central to the task of assigning the EF of production to the end uses it serves. Primary and derived goods are related by product-specific extraction rates.

Chart 1 - A comparative analysis of EF of production, EF of consumption, Biocapacity, and Carbon footprint in the Mediterranean region



Source: Ewing et al. (2010a).

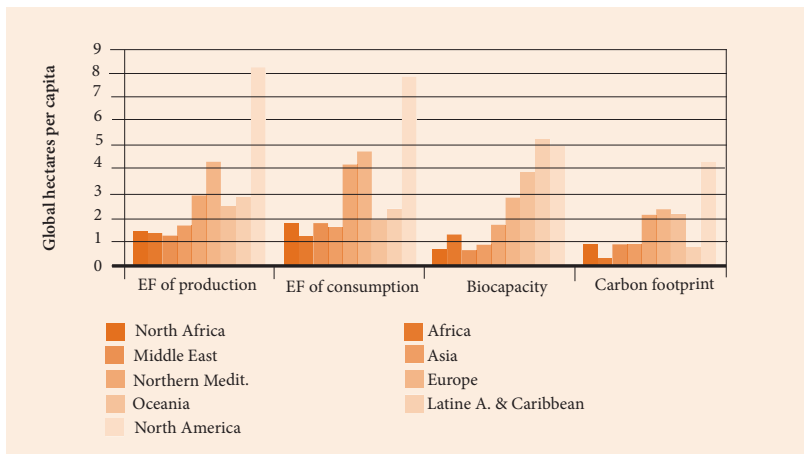
Data elaborated from the 2007 national footprint accounts statistics presented by Ewing et al. (2010a) show that the Mediterranean EF of consumption is always higher than the EF of production (Chart 1), except in the case of Serbia. Furthermore, the CF alone is generally higher than the biocapacity value, except in the case of Morocco, Tunisia, Albania, Turkey, Bosnia, Croatia and France. In general, the results show that the northern Mediterranean countries have a high EF, while the impact of countries in North Africa and the Middle East is the lowest.

With regard to the EF of production, the period needed to regenerate the resources used in 2007 by Mediterranean countries ranged from 5 years and 5 months to 1 year and 3

months in Libya and Albania respectively. As regards the EF of consumption, the period needed to regenerate the resources consumed ranged from 8 years and 6 months to 1 year and 6 months in Jordan and Croatia respectively. Thus, the Mediterranean countries have a net demand on the planet greater than their respective biocapacity: expressed in average values, 2 years and 3 months are needed to regenerate the resources used for production, while 3 years and 4 months are needed to regenerate the resources effectively consumed.

Chart 2 shows that North America has the highest EF, whilst Asia has an EF similar to North Africa and the Middle East. The European countries, including the Mediterranean States, have a higher EF compared to Asia, Oceania, and Latin America.

Chart 2 - The Mediterranean region in the world: a comparative analysis in terms of EF of production, EF of consumption, Biocapacity, and Carbon footprint



Source: Ewing et al. (2010a).

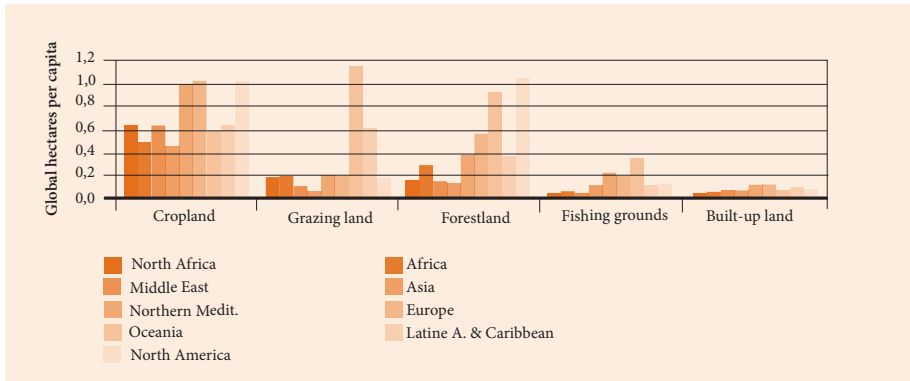
Taking land use types (i.e. cropland, grazing land, forestland, fishing grounds, and built-up land) into consideration, the results show that the EF of cropland is highest in Mediterranean countries, while the EF of grazing land and forestland is highest in Oceania (Chart 3). The average EF in the Balkans and northern Mediterranean countries is at least 1.5 times the EF of North Africa and the Middle East.

Chart 4 shows that the EF per capita in the Mediterranean region increased in the 1961-2007 period except in Morocco, Jordan and Albania, while the biocapacity decreased. The ecological deficit is therefore going to increase. The EF has increased on average by 47.4% whilst the biocapacity has decreased by 36.4%.

Meat production has a higher environmental impact than the production of fruit and vegetables. According to the Livestock, Environment and Development (LEAD) initiative, the livestock industry is one of the largest contributors to environmental degradation, on both the local and the global scale, contributing to deforestation, air and water pollution, land degradation, loss of topsoil, climate change, the overuse of resources including oil and water, and loss of biodiversity (Steinfeld et al., 2006). According to studies carried out in the EU's Environmental Impact of Products (EIPRO) project, the

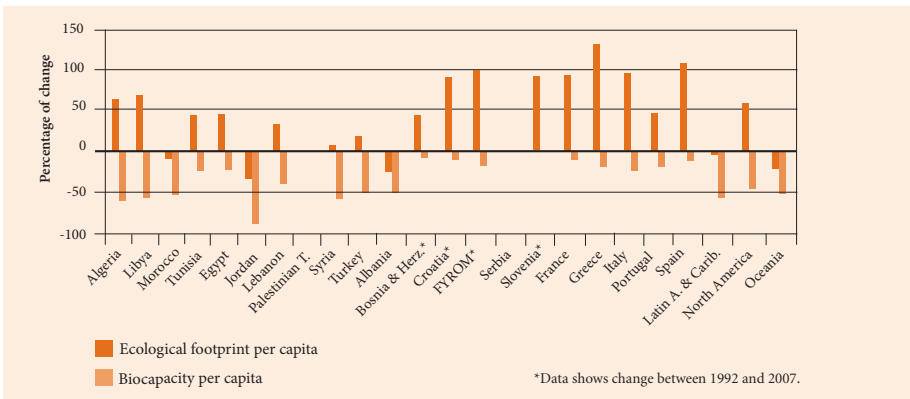
production and consumption of food accounts for 22% to 31% of the EU countries' total greenhouse gas (GHG) emissions, the so-called food carbon footprint. The consumption of meat and dairy products is estimated to be responsible for approximately 14% of Europe's overall impact on global warming (EC, 2006).

Chart 3 - The Mediterranean in the world: a comparative analysis in terms of EF by land use type



Source: Ewing et al. (2010a).

Chart 4 - Evolution of the EF and biocapacity in the Mediterranean countries from 1961 to 2007



*Data shows change between 1992 and 2007.

Source: Ewing et al. (2010a).

As matter of fact, EIPRO showed that food and drink are responsible for 20% to 30% of the various environmental impacts of total consumption (abiotic depletion, acidification, ecotoxicity, global warming, eutrophication, human toxicity, ozone layer depletion and photochemical oxidation), and in the case of eutrophication for even more than 50%. Within this area of consumption, meat and meat products (including meat, poultry, sausages, etc.) have the greatest environmental impact and their estimated contribution to global warming is in the range of 4% to 12% of all products. The second important product group in terms of environmental impact is that of dairy products

(EC, 2006). A recent analysis by Goodland and Anhang (2009) finds that livestock and their by-products actually account for at least 32.6 billion tons of carbon dioxide per year, or 51% of annual worldwide GHG emissions.

Assessment of the water footprint

The global freshwater resources are subject to increasing pressure in the form of consumptive water use and pollution (Postel, 2000; WWAP, 2009). Given the growing water scarcity and environmental problems, the increase in the volume of water needed to meet the demand for food is a major concern. Already 1.4 billion people live in places where water is physically scarce (Comprehensive Assessment of Water Management in Agriculture – CA 2007). The CA 2007 estimated that with the present production practices water demands could double by 2050. The kind of food in demand and the quantity required determine to a large extent how water for agriculture is allocated and used (Lundqvist *et al.*, 2008).

Food supply directly translates into consumptive water use, that is, the amount of water that is transpired and evaporates from the field during the production of a specific amount of food (*e.g.* Molden, 2007). Water requirements for plant and animal products vary widely. Higher-value crops (*e.g.* horticultural crops) typically require more water per calorie than staple cereal crops. Meat and dairy production is more water-intensive than crop production. In fact, 500-4,000 litres of water are evaporated in the production of one kilogram of wheat, depending on many factors (such as climate, agricultural practices, variety, length of growing season, yield), whereas it takes 5,000-20,000 litres to produce one kilogram of meat, mainly to grow animal feed. In terms of food energy content, approximately 0.5 m³ of water is needed to produce 1,000 kcal of plant-based food, while for animal-based food, some 4 m³ of water are required. Assuming a projected high level of average food supply of 3,000 kcal/capita/day, with 20% animal and 80% plant food, the consumptive water use will be over 3 m³/capita/day – 1,300 m³/capita/year (Falkenmark and Rockström, 2004).

The methodology of the global standard for water footprint assessment developed by the Water Footprint Network is set out by Hoekstra *et al.* (2011) in *The Water Footprint Assessment Manual*. The study quantifies and maps the water footprints of nations from both the production and the consumption perspective and also estimates international virtual water flows and national and global water savings resulting from trade. The estimate included a breakdown of water footprints, virtual water flows and water savings into their green, blue and grey components.

Water footprint, virtual water and embedded water

The water footprint concept is closely related to the virtual water concept (Hoekstra & Chapagain, 2007). The water footprint of a product is similar to what has been called alternatively the 'virtual-water content' of the product (Hoekstra and Chapagain, 2008).

The terms virtual-water content and embedded water, however, refer to the water volume embodied in the product alone (Allan, 1998), while the term 'water footprint' refers not only to the volume, but also to the sort of water that was used (green, blue, grey) and to when and where the water was used. The water footprint of a product is thus a

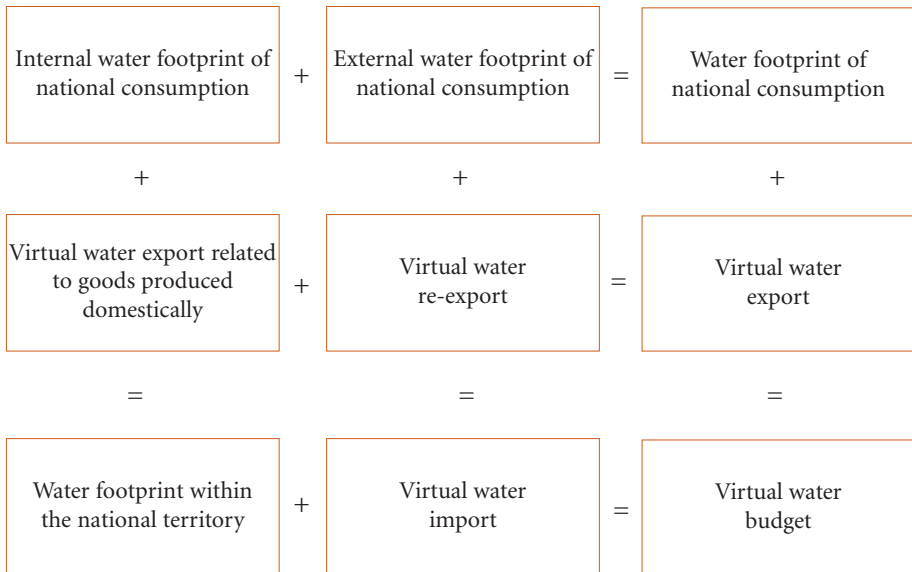
multidimensional indicator, whereas 'virtual-water content' or 'embedded water' refer to volume alone. The use of the term 'water footprint' is recommended because of its broader scope. Besides, the term 'water footprint' can also be used in a context where we speak about the water footprint of a consumer or a producer (Hoekstra *et al.*, 2011).

The term 'virtual water' is used in particular in the context of international (or inter-regional) virtual-water flows (Hoekstra *et al.*, 2011). If a nation (region) exports/imports a product, it exports/imports water in virtual form. The concept of virtual water is very important in the field of freshwater management. In fact, for water-scarce countries it could be attractive to achieve water security by importing water-intensive products instead of producing all water-demanding products domestically (WWC-CME, 1998).

The water footprint includes the use of blue water (ground and surface water), the use of green water (rain water or moisture stored in soil strata), and grey water. The grey water footprint refers to pollution and is defined as the volume of freshwater that is required to assimilate the load of pollutants given natural background concentrations and existing ambient water quality standards (Hoekstra *et al.*, 2011)

The water footprint is a geographically explicit indicator, showing not only volumes of water consumption and pollution, but also the locations. The framework for national water footprint accounting is shown in Figure 1.

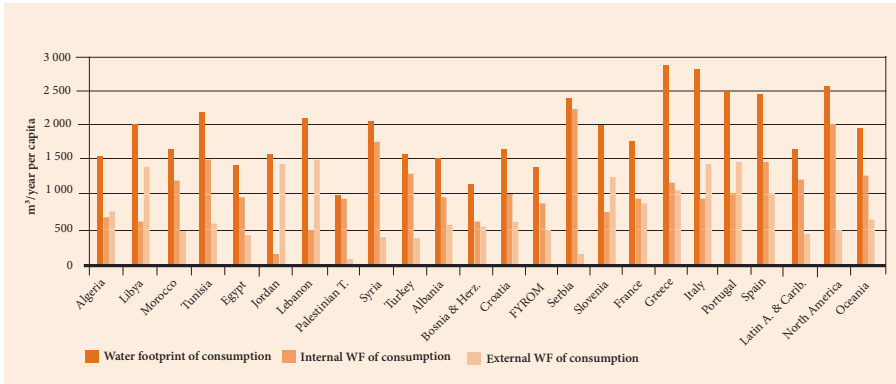
Figure 1 - The national water footprint accounting scheme



Source: Hoekstra *et al.* (2011).

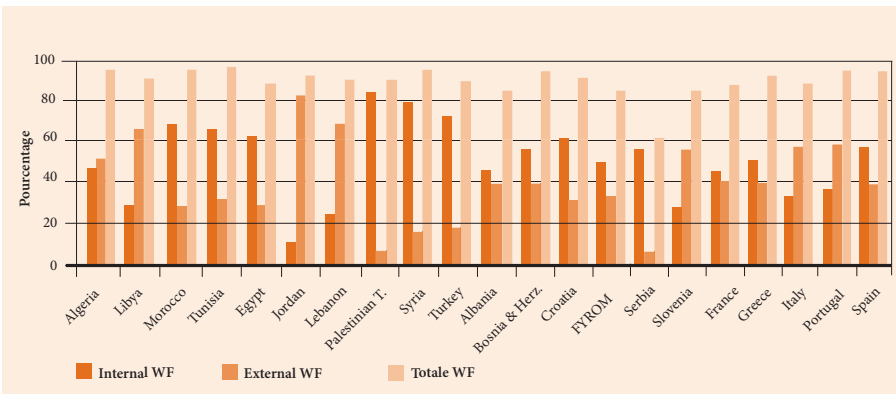
According to Mekonnen and Hoekstra (2011), the global water footprint was 9087 Gm³/yr (74% green, 11% blue, 15% grey) in the 1996-2005 period, and agricultural production contributed 92% to this total footprint. The total volume of international virtual water flows related to trade in agricultural and industrial products was 2320 Gm³/yr (68% green, 13% blue, 19% grey), 76% of which was related to trade in crop products (trade in animal products contributes 12%). Moreover, the water footprint of the global average consumer was 1385 m³/yr in the same period, 92% of which was related to the consumption of agricultural products.

Chart 5 - Water footprint of consumption



Source: Mekonnen and Hoekstra (2011).

Chart 6 - WF of agricultural products consumption



Source: Mekonnen and Hoekstra (2011).

Data from the 1996-2005 period show that the WF of consumption varied widely amongst Mediterranean countries (Chart 5), especially in terms of internal and external WF of consumption. In fact, the percentage of the external WF of consumption ranged from 7.3% to 85.8%, in Palestinian Territories and Jordan respectively. Northern Mediterranean countries had the highest water footprint of consumption per year and per capita (2279 m³) compared to North Africa (1892 m³), the Balkans (1708 m³) and the Middle East (1656 m³).

Table 1 - The virtual water balance by country (Mm³/year)

Countries	Green Water	Blue Water	Grey Water	Total (Green + Blue + Grey)
Algeria	14,269.8	1,458.5	1,582.6	17,311
Libya	6,846.5	1,553.1	1,159.8	9,559
Morocco	8,513.1	- 1,301.4	1,124.8	8,337
Tunisia	- 2,829.9	995.5	168.2	- 1,666
Egypt	14,661	- 5,445.9	- 164.3	9,051
Jordan	4,341.3	645.1	680.2	5,667
Lebanon	2,965.9	517	574.3	4,057
Palestinian T.	-	-	-	-
Syria	575.2	- 2,494.5	- 347.5	- 2 267
Turkey	8,577.2	- 4,658.1	1,866.8	5,786
Albania	835.1	174.7	154.8	1,165
Bosnia and Herzegovina	1,318.3	116.6	455.7	1,891
Croatia	1,203.6	199.5	570.3	1,973
FYROM	428.9	10.6	- 99.5	340
Serbia	167.1	87.8	- 2,034.6	- 1,780
Slovenia	1,308.7	202.1	- 95.8	12,822
France	6,658	3,029.4	3,134.9	6,903
Greece	5,458.7	- 870.2	2,314	62,157
Italy	49,388.4	6,278.3	6,490	62,157
Portugal	8,674.9	749.6	821.3	10,246
Spain	21,386.1	- 3,295.1	6,111.8	24,203
Canada	- 46,720	1,484.2	- 7,341.1	- 52,577
USA	- 80,701	- 8,805	9,926	- 79,580

Most of the WF of consumption is in fact due to the consumption of agricultural products, as shown in Chart 6. The average value observed is approx. 91% of the total WF of consumption: 96% in North Africa, 93% in the Middle East, 82% in the Balkans, and 91% in northern Mediterranean countries.

Mekonnen and Hoekstra's study (2011) also evaluated the virtual water balance in the period from 1995 to 2005 (Table 1) as an indicator of the water saved as a result of trade in agricultural products. Only Tunisia, Syria and Serbia present a negative virtual water

balance. The other Mediterranean countries show water savings ranging from 340 Mm³ to 62,157 Mm³, in FYROM and Italy respectively. Total water savings of 177,168 Mm³ (including the three forms of virtual water) are observed in the Mediterranean region.

Environmental implications of food loss and wastage

The distribution of food clearly poses a problem. Losses of food between the farmer's field and the dinner table are huge. Tremendous quantities of food are discarded in processing, transport, supermarkets and people's kitchens (Lundqvist *et al.*, 2008). An estimated 50% of the food produced is lost and wasted between field and fork with considerable variations from one country and season to another (Lundqvist, 2010). According to a recent study commissioned by the FAO from the Swedish Institute for Food and Biotechnology (SIK), roughly one-third of the food produced in the world for human consumption every year – circa 1.3 billion tonnes – gets lost or wasted. The amount of food lost or wasted every year is equivalent to more than half of the world's annual cereals crop (2.3 billion tonnes in 2009/10) (Gustavsson *et al.*, 2011). Food wastage and loss amount to loss of water and other natural resources. Reducing food loss and wastage reduces water needs in agriculture (Lundqvist *et al.*, 2008) as well as environmental impacts.

Food losses and food waste

According to Parfitt *et al.* (2010), the term “food losses” refers to the decrease in edible food mass throughout the part of the supply chain leading specifically to edible food for human consumption. Food losses take place at the production, post-harvest and processing stages in the food supply chain. Losses occurring at the end of the food chain – retail and consumption – are referred to as “food waste”. Food waste or loss is measured only for products that are intended for human consumption, i.e. feed and non-edible product parts are excluded. Food that was originally meant for human consumption but which is accidentally eliminated from the human food chain is regarded as food loss or waste even if it is then directed to a non-food use (feed, bioenergy, etc.) (Gustavsson *et al.*, 2011).

Food loss and waste vary, depending on type of food, country and season, inter alia. Inefficient harvesting, transport, storage and packaging make a considerable dent in food availability. Additional and significant losses and wastage occur in food processing, in the wholesale and retail trade, and where food is consumed. Food losses in rich countries are different to those in the developing world (Lundqvist *et al.*, 2008); they are greatest in developing countries due to poor infrastructure, low levels of technology and low investment in food production systems (Gustavsson *et al.*, 2011). Relatively speaking, losses in the first part of the food chain, which are due to poor harvesting techniques, lack of transport and poor storage in combination with climate conditions, are more important in developing countries (Lundqvist *et al.*, 2008), where 40% of food losses occur at the post-harvest and processing level while in industrialised countries more than 40% of the losses occur at the retail and consumer level (i.e. food is wasted).

Per capita waste by consumers is between 95 kg and 115 kg a year in Europe and North America, while consumers in sub-Saharan Africa throw away only 6 kg-11 kg a year (Gustavsson *et al.*, 2011). There are several differences in terms of food wastage even amongst industrialised countries and amongst households in the same country. In Italy,

some 20 million tonnes of food waste are formed every year throughout the supply chain. Every French citizen throws away 7 kg of food every year that is still in the original package (ADEME, 2010).

Trends in diet composition towards a higher proportion of animal food items, fruit and vegetables tend to shorten the durability of food and could increase the risk of losses and wastage (Lundqvist *et al.*, 2008). Fruit and vegetables as well as roots and tubers have the highest wastage rates of any food (Gustavsson *et al.*, 2011). According to Jones (2004), losses at farm level in the US probably amount to about 15%-35%, depending on the industry: 20%-25% for the fresh vegetable industry, 10%-40% for fruits such as apples and citrus, 26% for the retail industry; 1% in supermarkets. In the US, the average overall loss of fresh fruit and vegetables between production and consumption sites is around 12% (Kader, 2005). Distance to market, a more complex food chain and changes in composition and variety of food supply provide opportunities for more food and water wastage (Lundqvist *et al.*, 2008).

Food and drink wastage involve major global environmental consequences. Food loss and wastage amount to major squandering of resources, including water, land, energy, labour and capital, and needlessly produce greenhouse gas emissions (Gustavsson *et al.*, 2011). They account for more than one quarter of the total consumptive use of finite and vulnerable freshwater and more than 300 million barrels of oil per year (Hall *et al.*, 2009). Reducing not only the consumption of food, especially meat and animal products, and drink but also household waste can help to reduce the environmental impact of diets.

Conclusion

UNESCO's awarding of the Immaterial Human Heritage title to the Mediterranean diet gives it a strong geographical connotation and provides an opportunity to promote a variety of Mediterranean products, environments and cultures. From this point of view it is important to highlight their association with sustainable agro-food systems conserving biodiversity and using natural resources (such as water and soil) rationally. The Mediterranean diet should also be associated with food security, food sovereignty and dependence on local and indigenous traditions and knowledge as well as with the conservation of natural resources and reduction of the use of non-renewable external inputs.

Mediterranean food consumption patterns contribute to biodiversity conservation for at least two main reasons. First of all because they promote the use of a wide range of cereals, fruit and vegetables, not only cultivated products but also spontaneous and wild species, thus enabling them to be conserved along with the local, indigenous and traditional knowledge relating to these species. Moreover, by using less meat and fewer animal products, Mediterranean diets reduce the impacts of the livestock sector on biodiversity and natural resources. In fact, meat-based diets, such as those typical of northern countries, have higher environmental impacts (such as water footprint, ecological footprint, carbon footprint) than plant-based eating patterns such as the Mediterranean diets. Moreover, promoting the use of local and typical products can help to reduce environmental impacts (food miles and carbon footprint). However, further studies on

the environmental impacts and sustainability of Mediterranean food consumption patterns need to be conducted that take account of food origins and production and distribution systems and methods as well as the wastage of food and drink.

It is important furthermore to reduce the amount of food wasted throughout the food chain (i.e. from farm to fork). To do so, it is crucial to alert consumers to the environmental implications of their diets and of overeating and wasting food. Reducing losses and wastage will ease pressure on water and other resources and free up land and water for purposes other than food production.

Cereal imports and high prices are calling the socio-economic and environmental sustainability of the Mediterranean diet in question (in terms of purchasing power and food miles), particularly in certain southern and eastern Mediterranean countries. In fact, the FAO Food Price Index averaged 236 points in February 2011, which is the highest figure (in real and nominal terms) since 1990. The steepest rise was in cereal prices. In the countries of North Africa and the Middle East, per capita cereal consumption is also high (265 kg/year in Egypt, for example) and the ratio of imports to total cereal consumption is also high (87% in Libya, for instance). High prices of cereals, and especially of fruit and vegetables, are likely to transform the traditional Mediterranean diet into a diet for the rich. Moreover, population increase, especially in the southern and eastern Mediterranean countries, will increase pressure on the region's limited and scarce natural resources, particularly water. In fact, almost 65% of water resources in the Mediterranean are used in irrigation. This also calls in question the sustainability of a diet that is based, inter alia, on irrigated crops such as vegetables and fruit. The per capita EF in the region rose on the whole in the 1961-2007 period (+47.4%) while biocapacity dropped (-36.4%) resulting in an increase in the ecological deficit. Furthermore, the carbon footprint is generally higher than biocapacity, particularly in northern Mediterranean countries. Agriculture – particularly intensive irrigated agriculture – also has a negative impact on biodiversity.

What is more, not only food production but also the transport, distribution and consumption of foodstuffs and waste management are all issues that must be addressed appropriately if the sustainability of Mediterranean food consumption patterns is to be enhanced.

All in all, measures to promote Mediterranean diets can contribute to sustainable land and water resources management and to the conservation of biodiversity, but they will not suffice alone. Strategies and policies should be designed and implemented with the active involvement and participation of all relevant stakeholders, particularly smallholders, who are the main custodians of biodiversity, since it is they who manage natural resources directly and who possess the local knowledge pertaining to biodiversity and water and land resources.

Table 2 - Countries and geographical areas

Geographical areas	Countries
Balkans	Albania, Bosnia and Herzegovina, Croatia, FYROM
Middle East	Egypt, Jordan, Lebanon, Palestinian Territories, Syria, Turkey
North Africa	Algeria, Libya, Morocco, Tunisia
Northern Mediterranean	Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia, Spain
Asia	China, India, Japan
Australia	Australia
Central & Northern Europe	Austria, Belarus, Belgium, Denmark, Estonia, Finland, Germany, Iceland, Ireland, United Kingdom
Latin America	Argentina, Brazil
North America	Canada, United States of America

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4 PART FOUR

THE SOCIAL
responsibility
of the actors involved



SOCIAL RESPONSIBILITY IN AGRICULTURE

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In 2010, UNESCO proclaimed the Mediterranean Diet part of the intangible cultural heritage of humanity for its “set of skills, knowledge, practices and traditions ranging from the landscape to the table, including the crops, harvesting, fishing, conservation, processing, preparation and, particularly, consumption of food”, adding that it also “promotes social interaction.” Although the nutritional model is undisputed, the means used to produce its various components merit closer examination, for the question is being raised of whether the Mediterranean Diet is socially responsible – and it is justified.

The first part of this article will endeavour to analyse production conditions, highlighting in particular the hardship of producers and the precarious nature their labour. The second part will address seasonal migratory movements, which form the backbone of this agricultural sector, and will endeavour to identify their role, causes and consequences as well as the types of community concerned.

Precarious farming, the other side of the picture

Mediterranean crops are highly seasonal and very exposed to water stress. They are generally labour-intensive and have low capital intensity – table olives are still mainly harvested by hand, for example. What form does this labour take today, and what are the working conditions?

An employment-intensive sector with marked disparity between north and south

Agriculture is the second-largest employer in the Mediterranean region after the services sector. Horticultural and oil crops, the symbols of the Mediterranean Diet, are predominant. “Mediterranean farmers are leaders in the supply of fruit and vegetables, particularly early fruit and vegetables, to Europe. The extent of intensive protected cropping (greenhouses, foil cropping, plastic sheeting) is a good indicator of this trend: with its 400,000 hectares of protected crops it is the second-largest production area in the world

after Asia.” (Roux, 2006) And the region has an oil crop acreage of 8 million hectares, the bulk of which is devoted to olive oil production (Achabou *et al.*, 2010). Both types of crop are highly labour-intensive: they are unprofitable for the producer (Grittani, 1988) and provide in the main low-paid, insecure jobs and very difficult working conditions.

The features of rural employment in the Mediterranean region

- Self-employment in a context of small family farms and small secondary trades processing agricultural products.
- A high proportion of generally unpaid female labour and family helpers, who are not included in the national statistics.
- Seasonal agricultural production resulting in underemployment of the labour force available.
- Insecure and intermittent paid employment, which is promoted by the absence of, or by non-compliance with, labour legislation.
- Few vocational training opportunities, and lower levels of education than in urban areas.
- An underdeveloped economic fabric and lack of infrastructures making rural areas less attractive.

In the northern Mediterranean countries, the rural sector still employs 50% of the working population, although there is a sharp decline in rural employment, while the population is ageing, and agricultural work is often underrated. The effects of this erosion are offset, however, by incentive policies, a mechanism that is absent in the countries on the southern shores. More specifically, the Common Agricultural Policy of the European Union has revived rural economies to some extent by reducing development disparities within the EU. The development of ancillary activities (sale of agricultural produce and products that have been processed in short food chains) or other activities (tourism and leisure pursuits, industries that have been relocated to rural areas and associated services) is revitalising hitherto deserted rural areas. Minimising labour costs remains the main key to crop competitiveness; it has enabled certain agricultural sectors to emerge since the 1970s, such as early fruit and vegetables in Andalusia (vegetables from Almeria Province, strawberries from Huelva Province, and peaches from the area around Seville (Roux, 2006). But it is nevertheless a model that is currently raising a number of questions in terms of social and environmental responsibility.

In the southern Mediterranean countries, agriculture still provides the highest proportion of jobs and is a core sector in rural societies. The informal sector still plays an important role, acting as an economic stabiliser. Farming jobs account for an average of 80% of rural activities and a very significant share of the total working population in the North African countries (20% in Tunisia and 25% in Egypt compared to less than 5% in France, Italy and Spain), even though that share is lower than the world average. The high proportion of agricultural employment in rural areas is to be explained, however, by the fact that there is very little diversification of activities, since these areas fail to attract the industrial activities and services that could develop there. What is more, States do not always provide economic support for the sector, a factor that has been aggravated

by two decades of “structural adjustments” and foreign trade liberalisation: in Tunisia, for example, the share of public investments in agriculture has dropped by 40% since 2000 – from 14% to 8%.

For want of such support, the agricultural sector has benefited little from the modernisation brought by the industrial era: there is very little irrigation despite the arid and semi-arid climate; although mechanisation has developed, its impact is limited by a farm area of less than 10 ha. The land reforms that have been introduced in some countries of the Maghreb (abolition of the *habous*¹) have had little effect on the redistribution of the agricultural area and have not really made it possible to create new farms. Agricultural systems are thus struggling to reform, and this is having a direct impact on social conditions in rural areas: the ratio of the minimum farm wage to GDP has been shrinking (even though it is often higher than the wages actually paid), the unemployment rate is higher than in urban areas, farm operators are ageing (less than 15% of them are under 40) (Riadh, 2010), and poverty is rising.

Fishing, the cornerstone of the Cretan diet... and generator of poverty

Fish and shellfish are an integral part of the Mediterranean Diet. Yet the fisheries sector is still highly fragmented, except in the EU countries. While France, Greece, Spain, Italy and Portugal have increased the capacities of their fleets and fishing boundaries, the fishing industries in the other Mediterranean countries are often small-scale local craft industries (Basurco, 2010). The fishing sector provides a livelihood for 630,000 people, some 300,000 of whom are fishermen (Pere and Franquesa, 2005). This manna could shrink drastically as the result of water pollution and the depletion of fish reserves.

In the southern Mediterranean countries, coastal fishing accounts for a large share of production. It is a sector where wage costs are low since seasonal employment is widespread. What is more, the seasonal workers employed on the fishing boats are paid low, or no, wages and work in difficult conditions. In the Mediterranean region, Spain (which owns or manages the fourth largest number of “flag of convenience” vessels in the world), Morocco, Malta, Cyprus, France and Lebanon have been criticised by the FAO and/or the International Transport Workers Federation (ITF) for owning “flag of convenience” vessels.

Women, an essential component of agriculture that is often forgotten

One of the major phenomena that have occurred since the southern Mediterranean countries gained independence is the increase in women’s participation in the economy. Whereas in 1950 the proportion of women in the working population was around 5%, it has now reached over 20% in all of the countries except Palestinian Territories (Aïta, 2008). Many more younger-generation women are now entering the labour market than has been the case hitherto. However, although an improvement, the effect is as yet unlikely to narrow the gap between the region and other parts of the world. For in the Arab countries the gross economic activity rate for women (expressed as a proportion of the

1 - In Islamic law, the *habous* denote a form of legislation governing land ownership. There are three types of *habous*: public, private and mixed. (The term “*habous*” is used mainly in the Maghreb.)

female working-age population) is still 10 points below the average of the least developed countries.

Table 1 - Working population in 2010

Country	Total (in thousands)	Share of agriculture (as a percentage of the total)	Proportion of working women economically active in agriculture (%)	Proportion of women in the working farm population (%)
Algeria	14 950	21.2	32.9	52.7
Egypt	27 492	25.1	39.3	40.3
Libya	2 425	3.0	8.6	69.9
Morocco	11 963	25.5	49.1	47.7
Tunisia	3 886	20.5	24.6	32.8
Jordan	1 882	6.3	22.4	62.2
Lebanon	1 563	1.8	2.2	32.1
Syria	7 365	20.0	56	-
Turkey	25 942	32.3	66.3	60.7
France	28 232	46.9	1.4	52.3
Portugal	5 696	46.9	12.3	63.7
Italy	25 775	42.1	3.5	45.2
Spain	22 439	42.8	3.9	37.7
Greece	5 218	41.2	15.3	52.6
Malta	172	34.3	0	0.0
Albania	1 450	42.8	42.3	43.2
World	3 282 308	40.5	42	42.7

Source: FAO, *The State of Food and Agriculture 2010-2011. Women in Agriculture*.

In many countries the agricultural labour force consists essentially of women. But there are still many obstacles preventing women from taking part in the economy of rural areas: they are subject to discrimination at several levels (education, cultural pressure, access to credit, vocational training, and wage level). Gender pay inequalities are flagrant. In Tunisia, a woman can earn 5 dinars a day where a man will earn that amount for one hour's work. Lastly, women's access to land ownership is still very limited (CIHEAM, 2010).

The same trends are also found in the northern Mediterranean countries. Although there are only half as many women as men in the working population (3% compared to 5% on average), a great many women are employed in the informal sector and thus

are not covered by the statutory health and safety provisions, which causes problems in the event of accident or illness. Casual and/or seasonal work is a further widespread feature of female labour in Europe. Women are furthermore concentrated in elementary tasks and they have a lower level of agricultural training than men.

In a publication issued on 21 January 2011 (United Nations, 2011), the United Nations states that rural women benefit less than rural men for equal productivity and face new challenges in connection with the present economic and food crises. As the result of the widespread unemployment amongst women and the shrinking of social assistance infrastructures, the burden on households is growing and women are not being paid for their labour. Their contribution to household food security is shrinking accordingly, a particularly dire state of affairs when they are the head of the family.

In an article published at the end of 2010², the European Economic and Social Committee stressed that “it is essential to enhance the role of women and young people in farming and rural society. [...] New structural policies and incentives are needed that will give value to women’s work, enable them to move out of the informal economy, and foster the creation of community associations as a means of boosting entrepreneurship, which is also needed in the agricultural sphere.”

Has child labour become the rule?

The involvement of children in working life is a reality common to the southern and eastern Mediterranean countries, despite their international commitments. The International Labour Office (ILO) reports participation rates ranging from 2% to 11% (for the 5-14 age group) depending on the country. It is estimated that 250,000 to 300,000 children are working in Algeria; 28% of these children work a long way from home, 53% say that they are working to help their families, and 75% say that the money they earn is given to their parents.

According to the World Bank, the proportion of children in the labour force dropped from 12% to 8% in the period from 1990 to 2002, and there were still 1.6 million child workers in 2010. The vast majority of these children (68%) work in the fields in rural areas. In Lebanon, the labour-force participation rate for the 10-17 age group is also 8%, with a higher rate for girls (10%). Half of these children earn wages and 64% work full-time. The highest child labour rates are observed in rural areas, particularly in northern and southern Lebanon and the Bekaa Valley. An estimated 25,000 children work in tobacco plantations in that valley, a phenomenon that the ILO describes as one of the “worst forms of child labour” due to the harsh working conditions and the consequences for the children’s health (backache, allergies and respiratory problems). The youngest of these children learn to pick, spike, thread, cure and smooth tobacco from the age of 5.

As regards Morocco, a survey conducted in 2003 in the context of the *Understanding Children’s Work* programme counted over 600,000 working children. In fact, over a million school-age children do not go to school, and domestic work is generally not included in the survey. A recent study on Palestinian Territories showed a labour force participation

2 - European Economic and Social Committee, Plenary session on 17-18 February 2010.

rate of 4.6% for the 7-17 age group: 6.5% in the West Bank and 1.7% in Gaza. Two-thirds of these children are unpaid family workers. In Syria, an official labour force survey carried out in 2001 (Aïta, 2008) listed 180,000 working children between 10 and 14 years of age, which is a higher number than the figure quoted by the ILO, with a labour force participation rate of 1% to 2% for 10-year-olds and, for 14-year-olds, a rate of 25% for boys and 13% for girls. Tunisia states that “Although child labour is not widespread, there is still unacceptable exploitation of children to some extent, mainly in the informal economy, the domestic services sector and agriculture. The Tunisian government has certainly made appreciable efforts to address the problem, but it is essential to carry out further research and take other measures in this field.” Independent studies quote a labour market participation rate of 3.1% for the 10-14 age group. (Aïta, 2008).

Risk and opportunity of seasonal agricultural migration

Migration is a removal from one place to another. This removal can take the form of periodical migration, where people return regularly to their point of departure, or definitive migration, where they abandon their original place of settlement completely or for a very long time. Temporary migration, on the other hand, can be weekly, seasonal, daily or even twice-daily – commutes to and from the workplace, generally referred to as “commuting”.

Taking all categories of migrants together, there are thus 200 million people who migrate each year, i.e. 3% of the world population. Paradoxically, migration is the poor cousin of globalisation. Over 60% of migrants do not leave the southern hemisphere, and 90% live in 55 countries.

There are marked migratory movements in the Mediterranean region. Without the possibility of emigrating the unemployment situation would become intolerable. Migratory movements thus provide “a real ‘social buffer’ against poverty and an effective input for investments” (Doz, 2008, p. 8). In eight countries – Morocco, Algeria, Tunisia, Egypt, Jordan, Palestinian Territories, Lebanon and Syria – it transpires that “whereas there were between 7 and 12 million first-generation emigrants (only half of whom (...) emigrated to Europe), there are between 7 and 10 million immigrants and refugees in the southern Mediterranean countries” (Aïta, 2008). They come mainly from Iraq and Sudan, and most of them arrive in the Mashrek. Taken as a whole, the Arab countries of the Mediterranean have taken in many more immigrants and refugees than they have sent out. In 2009, 12.7 million emigrants left the southern and eastern Mediterranean countries (Fargues, 2009); 8.2 million (64.7%) of them emigrated to the European Union, 2.7 million (21.4%) to the Arab countries (Gulf, Libya and other southern and eastern Mediterranean countries), and 1.7 million (13.7%) to other regions of the world. The agricultural sector is a source of employment for many of these migrants, whether as a motive or as a result.

Migration, a precondition for the reduction of labour costs from which mainly the northern countries benefit

For employers, migrant populations are a godsend for minimising costs and having greater flexibility. Wages are lowered, working time is extended or shortened according to production needs, constant availability of labour is ensured through various channels, employment is concealed (and thus tax-free), and worker output is maximised (Potot, 2010). The northern countries are more attractive to migrants and benefit all the more, in more or less permissive regulatory frameworks.

The insecure employment of immigrants in the agricultural sectors of rich countries is not a new phenomenon. Almost 100% of the workers employed in strawberry production in the Huelva region in Spain are foreign seasonal agricultural labourers – and an increasing number of them are women. The setup is very similar in the Puglia region in southern Italy, where 12,000 migrants are recruited every year to pick tomatoes for the agro-food processing industry (Brovia, 2008). Some of these labourers are recruited on the basis of a quota system established at government level and involving a complex procedure that is open to numerous forms of abuse. The remainder of the workers are recruited informally and subject to the ‘caporalato’, a labour management system based on the delegation of recruitment and supervision to unscrupulous underlings.

In France, foreign workers can be brought into the country legally on temporary immigration contracts, known as “IOM (International Organisation for Migration) contracts”, which are fixed-term employment contracts running from 4 to 6 months and extendible to 8 months. “These contracts are used mainly in the agricultural sector (95% of the people brought into the country) and serve as residence permits: when they expire the workers have to return to their home countries (...).” (Darpeix and Bergeron, 2009) Some 15,000 IOM contracts were signed in 2009 compared to a total of 7,696 in 2000. In some regions such as the Bouches du Rhône they account for up to 50% of seasonal employment. What are the advantages of this type of contract? IOM workers are a loyal work force – 85% of them are brought back from one year to the next. Often from rural backgrounds, they are skilled at their work. And lastly, “their (...) loyalty is to be explained by the opportunity cost of losing their job. The fact that the right of abode is linked to the employment contract and that the contract is non-transferable means that farmers can exert pressure on these workers. In the event of litigation between employers and workers, it is difficult for the workers to stay in the country legally and enforce their rights.” (Darpeix and Bergeron, 2009)

The malpractices connected with these contracts include the failure to report health problems, accidents, illnesses or overtime. Furthermore, the fees paid by employers to the *Agence nationale d'accueil des étrangers et des migrations* (national agency for the hosting of foreigners and migration – Anaem, formerly the Omi) for “importing” workers is frequently deducted from the workers’ wages, which is absolutely illegal. These migrants – men and women – often come from Tunisia or Morocco on their own as commuters or regular immigrants. The six months they spend in France are their main, or even their only, spell of work. The employers control the duration of their stay through their employment contracts and by renewing the contracts from one year to

the next, the principle being to oblige the seasonal workers to return to their countries of origin in the intervening period between two “seasons” (Potot, 2010).

The workers thus develop strategies for adapting to stress, known as “coping strategies”. Workers who have no residence permit form the most flexible segment of the sector’s labour force, without which the system would lack flexibility. Since they are prepared to accept very low wages, which are sometimes even lower than the statutory minimum wage, and long working hours and they tolerate racist remarks and jokes, their colleagues are obliged to do likewise and feel threatened by this competition. A manna that is easy to employ and easier still to fire at any moment.

Who are rural migrants? Trends in a disparate population

Migrants rarely belong to the poorest fringe of the population, for it requires considerable financial means to leave the country as well as good networks, whether fees are charged, or not. Although this phenomenon is widely observed throughout the world, it is not the case in certain countries such as Egypt (Sabates-Wheeler *et al.*, 2005) and Syria, where it is in fact the poor who emigrate more than the other income groups. Emigration is thus still a way out of poverty and a means of coping with job shortages. Migrant farmers form a heterogeneous group. They sometimes even have a few hectares of land and may also work in urban areas or on other farms as agricultural labourers, this multiple job-holding – involving a wide range of activities – being essential to their survival strategies.

What is more, migrant women farmers are becoming an increasingly frequent phenomenon, and in most cases their migration is organised through service companies. They often migrate to closer destinations, working in seasonal jobs in the informal sector. Since it is becoming increasingly difficult to obtain family reunifications in the host countries, these women migrants accept very low-paid jobs, which in many cases are also devoid of any social entitlements.

When one addresses Mediterranean migration issues, the main difficulty is to obtain reliable statistics. There are two reasons for this. In the human mobility field, figures are highly political, both in migrants’ countries of origin and in host countries. Neither the Gulf countries nor Libya or Sub-Saharan Africa provide statistics – yet they are the destinations of many migrants. A further reason is that migration paths are becoming increasingly complex, and many migrants – particularly those who migrate on a temporary or irregular basis – slip through any “accounting” systems. Lastly, statistics never underline the differential between the desire to migrate and the achievement of that goal.

Increasingly irregular migration, also in the southern and eastern Mediterranean countries

Circular migration is becoming more and more frequently the lot of seasonal agricultural workers. The term means that migrants undertake to return to their countries of origin even before they set out from home or that the return journey is a compulsory stage of the migration process. These terms are often laid down in a contract, as is the case in Spain, where Moroccan women are recruited through agencies. The French-style IOM

contracts are another form of enforced circular or pendular migration, where insecurity is organised from the outset and seasonal workers are obliged either to return home or to stay on as illegal immigrants. This is in the interests of employers, since they only have to pay the workers during part of the year if they return to their countries of origin during the low farming season (Roux, 2006).

As in other economic sectors in the Mediterranean countries, it is the employers who manage agricultural migrants rather than the States themselves. Morocco concluded agreements with Spain and France in the early 2000s making provision for the joint selection and management of temporary migrant workers.

Although these circular or pendular migratory movements enable the host countries to generate economic benefits without paying the identity costs of permanent migration, and although they also spare migrants who leave their families and countries excessive emotional costs, they unfortunately only too often go hand in hand with the denial of the most fundamental human rights.

A prominent phenomenon since the beginning of the 21st century has been that illegal immigration has spread to the southern and eastern Mediterranean countries themselves. In Lebanon, Syrian workers, who are exempted from residence formalities, are employed as seasonal labourers in low or semi-skilled jobs in agriculture or the building industry. There are reportedly several hundred thousand or even half a million such workers who cross the border in northern Lebanon every day or every week. When the Syrian army withdrew from Lebanon in 2005, the resulting uneasiness prompted many of them also to leave the country, but by 2008 the volume of Syrian labour in Lebanon seemed to have returned to the pre-2005 level. This labour force remains fluid with frequent movements back and forth to Libya, generally for short stays.

“Wages are rarely higher than 8,000 Lebanese pounds (LBP), i.e. 4 euros, for a 10-hour day with a half-hour (unpaid) lunch break. And on the 10,000 LBP that Bekaa farmers pay per person – which is already lower than what is paid elsewhere (25,000 LBP in southern Lebanon) the *chawish* [middlemen between the migrants and their employers] actually charge a commission of 1,500 to 2,000 LBP.” (Garçon and Zurayk, 2010)

The causes of rural migration in Mediterranean countries

Why do people leave rural areas for the city or for a neighbouring or more distant country? The tendency of farming populations to migrate seems to depend to a large extent on the land factor, land tenure, and how agricultural production is organised. Long-distance and long-term migration often concerns families who hold land title and thus own land, whereas temporary and circular mobility is connected with the production system of farming families with precarious land tenure (day labourers, share croppers or leaseholders). There are two factors which promote migration: the “push factor”, which drives people away from a place, and the “pull factor” which draws them to another location (Barrett *et al.*, 2001) – where firms in the host countries have a high demand for immigrant labour. Migration is at a maximum when both effects are at work. The current debate in the European Union on illegal migration disregards the fact that the reasons behind migration are not to be found solely in the migrants’

countries of origin and that the pull effect – such as the increase in undeclared work or agricultural protectionism in Europe – can also have a strong impact on these movements.

Difficult farming conditions due inter alia to water shortage, price variations and climatic uncertainty, the steady drop in incomes, market shortcomings or lack of outlets are all factors that have a push effect on farmers (Cadilhon, 2005). In addition, these migratory movements raise the question of land resources and how they are used. Ancestral rights, inequalities in agrarian structures and the fragmentation of family properties are a powerful factor that drives people to emigrate to other countries.

Some migrants who have built up investment and networking capacities (family networks and/or social, political and economic networks) set up production structures with good market integration, use techniques and inputs with which they can sustain productivity, and recruit labour (the pull effect of migration). But migration does not act as a regulator of land pressure and inequalities in every country. As Geneviève Cortès points out, “Emigration abroad, which is the privilege of those better endowed with land, is more a catalyst of unequal access to resources; it simply reproduces, or even exacerbates, the same inequalities.” (Cortès, 2002) “Take Tunisia, for example: it was the granary of the Mediterranean in Roman times, but the State preferred to invest in tourism. As soon as one penetrates the interior, there’s absolutely nothing there any more. And, as a result, the peasant farmers who were driven from their land contributed to rural-urban migration: it is those peasant farmers who today are looking for jobs and housing and who stage violent demonstrations – or sacrifice themselves – when there is no response.” (Clarini, 2011) Why? In Tunisia, about 18% of the working population was working in the agricultural sector in 2010, a proportion that has been in marked decline since the 1960s. “What is more, in rural areas farming jobs now account for only 50% of total employment.” (Elloumi, 2006). The proportion varies, however, from one region to another (the Centre-West region, including the Sidi Bouzid governorate, is still mainly agricultural).

Rural-urban migration is continuing in agriculture in most of the Arab Mediterranean countries and people are losing interest in land-related occupations, but the other economic sectors are not sufficiently dynamic to meet the demand for jobs. It is clear from the uprisings in Tunisia, Egypt, Algeria and Morocco towards the end of 2010 and in the course of 2011 that food and endemic employment problems are the main issues at stake in the region.

The balance of migrant labour supply and demand affected by the political and economic crises

Crises and political repression stimulate “migrant labour supply” – this is a widespread phenomenon in the southern and eastern Mediterranean countries. Of the 15 million refugees registered in 2007 34% came from those countries and 39% had taken refuge there. And whereas the average number of refugees is dropping throughout the world, it is rising in the countries of the southern and eastern Mediterranean. The political crises in Iraq, Sudan, Tunisia, Algeria and Yemen and the growing number of Palestinian refugees are the main causes of this influx of people. It is an important factor in the rural landscape of the various countries. For together with all of the illegal migrants

these refugees constitute a reserve of underemployed labour with which wages can be kept low on labour markets where the unemployment rate is already high.

Although it is difficult to measure the impact of the 2008 economic crisis on migratory flows within the Mediterranean region and between Mediterranean countries and the rest of the world, it seems to have reduced the demand for labour on the whole and thus capacities for employing migrants. Job supply has diminished more or less throughout the region and in the countries of the European Union. In some countries, more migrants are returning home and/or the numbers of new emigrants are dropping. In countries such as Spain, for example, indigenous workers are tending to take jobs that were previously held by migrants – particularly migrants from Morocco, Algeria and Tunisia – in agriculture and the services sector. And it is a well-known fact that it will become harder and harder for the least-skilled migrants to find work. It has been observed furthermore that women's share of farming jobs has grown. In the Gulf countries, the collapse in oil prices – when the price per barrel dropped from 147 \$ in July 2008 to 62 \$ in October 2008 – and in world financial markets has resulted in a drop in the demand for migrant labour since 2008. Conversely, the economic crisis is keeping migratory pressure high in the southern and eastern Mediterranean countries. That crisis is thus upsetting the balance in migrant labour “supply and demand” and exacerbating tensions between migrant and indigenous populations, in turn promoting securitarian policies.

The consequences of migration: development or desertification

The loss of a labour force and land abandonment, or better distribution of arable land and intensification of production – the consequences of agricultural migration in the Mediterranean are many and varied, and not necessarily adverse.

Rural migration raises as many hopes as it does concerns. The incomes that migrants send back to their families by remittance can enhance food security, help to diversify livelihoods and incomes and reduce vulnerability to shocks. However, this exodus also reallocates household labour associated with productive and reproductive activities in the areas of origin, reduces labour for food production and increases the work load of the men and women who stay behind. By swelling the ranks of labour and enlarging the pool of consumers, migrant workers can boost economic growth in the host countries, even if the influx of migrants in urban centres is liable to considerably exacerbate food insecurity. However, ensuring that emigration does not jeopardise domestic development – by multiplying the number of households headed by a woman, the number of spectacular age and gender-based population changes and the number of variations in labour market dynamics – is a permanent challenge for the countries of origin, where the labour force is constantly evolving. (FAO, 2011)

The effects of migration vary widely depending on the types of migrants involved and the cultural gap between the home and the host countries. Migrating means different things to different people, depending on whether they have chosen or been forced to do so, whether they are rich or poor, or whether they migrate within the same community or go to live amongst a different nation which speaks a different language.

From the economic point of view, agricultural migration results in loss of labour for the least densely populated rural areas, thus contributing to the disintensification of agriculture, a decrease in cropland acreage and, eventually, a high rate of land abandonment, as is observed in Lebanon. Migration is thus one of the arguments put forward to explain the expected loss of 20 000 ha of arable land in the Bekaa plains by 2020. Yet in Latin America, Asia and Africa migrant farmers' or farm labourers' transfers of funds enable farmers and their families to invest in agriculture and modernise farming methods. When Moroccan farm managers who work in Europe on a seasonal basis return to Morocco, for example, they use their earnings to purchase a tractor, with which they work their own land, and then improve the return on their investment by renting it out to other farmers.

Agricultural migration also has identity-related and geopolitical consequences, both in the countries of origin and in the host countries. Almost 100% of the workers employed in strawberry production in the Huelva region in Spain – which ranks second on the world market – are foreign seasonal workers, for example. The 2008 economic crisis hit the Spanish economy very hard, and unemployment figures have been rising steadily – to over 21% in Andalusia. So national workers are beginning to “return to the fields” (Cambon, 2009), a trend that is causing quite some tension. In Spain, the fact that illegal migrant populations, who are paid less than 2€/hour, and new jobless workers are having to compete with each other has given rise to violent conflicts, as was also the case in Rosarno, Italy, in January 2010³.

Conclusion

Although the health advantages of the Mediterranean Diet are uncontested, is the production model associated with that diet responsible? Given the current production methods, this is open to question. Mediterranean crops are particularly exposed to natural and economic hazards and they maintain a form of poverty that affects primarily women and children. A further feature of the production systems associated with this diet is the use of migrant workers, who are often employed in appalling conditions. The world economic situation does not help this state of affairs, stimulating competition between the migrant source regions, which in turn makes these populations even poorer. This being so, it is not surprising that the Tunisian revolution was rural to begin with before spreading to the cities.⁴

How can these challenges be addressed? Social standards including the ISO 26000 reference system, which has been built up in line with the existing systems or ILO standards, would be an avenue if they could be imposed as imperative frames of reference in the fields of Corporate Social Responsibility and sustainable development. As is the case with many international standards, they are not as yet binding. Consumers must also play a role by promoting voluntary adoption of these standards. But being in a position to do so presupposes that they be given means of identifying and purchasing socially responsible products.

3 - http://www.rfi.fr/anglais/actu/articles/121/article_6461.asp

4 - Mohamed Bouazizi, a jobless young graduate, lived in Sidi Bouzid, a rural commune in central Tunisia where unemployment is rife, particularly amongst young people. Victim of a violent police attack while selling fruit and vegetables on a street stall to support his family, he set himself on fire in protest on 17 December 2010 and died 19 days later.

With regard to migration, is an intergovernmental policy feasible other than border controls? It is what the ILO would like to promote when it calls for more “solidarity” and “coordination” on the part of States in a context of economic crisis. State strategies that consist of closing borders by means of visa or immigration policies are counter-productive. Can one accept migrants for fruit-picking in the summer season and then ask the political leaders in the “supplier” countries to close their borders for the rest of the year? For the current forms of migration are much more a matter of mobility and co-presence (pendular migratory movements) than of settlement. But the more frequently the borders are closed, the more people tend to settle for fear of not being allowed to return home and come back again. Conversely, the more open the borders, the more migrants tend to circulate and the less they settle. Lastly, these policies will not resolve the problems of low-skilled labour needs for agriculture and are liable to swell the ranks of illegal workers.

More generally speaking, since it is not so much the types of crop that pose problems as the prevailing socio-political circumstances in the southern and eastern Mediterranean countries, the emergence of the rule of law and a new form of governance could help to reduce social marginalisation.

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SOCIAL RESPONSIBILITY IN FOOD DISTRIBUTION

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Distribution is becoming the key component of food supply chains from producers to consumers. Rapid changes are taking place in distribution patterns in order to adapt to consumers' needs, since distributors have closer contact with final consumers than any other food supplier. Traditional distribution, with a large number of small shops, is still the prevailing model in many developing countries. Modern distribution with a variety of self-service formats is organised in chains. In most economically developed countries, distribution chains are highly concentrated and have a large market share in all types of food, and, as a result, they exert tremendous power over the other food-supply stakeholders and take the lead in implementing changes. So it makes sense to differentiate between individual countries in the Mediterranean area according to their economic wealth in order to have a better understanding of food distribution systems, although wealth is not the only distinguishing feature. The pace and intensity of the trend from traditional to modern distribution varies, however, from one country to another (Kaynak and Çavuşgil, 1982).

In this changing environment public administrations and private businesses have to take decisions – the former to control the nature of the change, and the latter to seize the opportunity of new economic developments by introducing different forms of business but also by adapting to a society that is now scrutinising them more critically and demanding social responsibility. Any rapid change that involves risks must be accompanied with policies geared to positive goals. Policies are contingent on the kind of institutions that a country has and on many other aspects of social life including political settings. Social Corporate Responsibility is becoming an important factor in defining how a company behaves with a view to enhancing its business activities but also to complying with social, economic and environmental requirements with positive effects on society. Developed and developing countries should benefit from this approach.

The Mediterranean area brings together a diversity of countries, and it is impossible to generalise when it comes to food distribution patterns and their social consequences. The countries of the European Union stand out from the rest and similarities among them are evident with respect to both public and corporate social responsibilities. Other Mediterranean countries also have similarities, although their public administrations

sometimes act very differently. Rather than reviewing the situation country by country, the present article proposes to explain general situations affecting groups of countries, and the three largest countries (Morocco, Egypt and Turkey) are selected to provide examples. Those who wish to pursue issues further will find sources for further reading in the bibliographical references.

First, this chapter describes the characteristics of the food distribution system in the Mediterranean area. It then focuses on Corporate Social Responsibility and deals with the role the public sector should play in controlling adequate food distribution systems. And lastly, after summarising the approaches adopted by the European Union with regard to Corporate Social Responsibility, it endeavours to predict what might occur in the near future.

Food distribution in the Mediterranean area

Traditions and modernities

The traditional food distribution system is characterised by a myriad of retail outlets, usually small, and distributed over neighbourhoods according to residential density. However, there is a higher concentration of these traditional shops in old quarters. Lack of refrigeration facilities and personnel are also typical of traditional shops. A large proportion of the population in developing countries live in rural areas and frequent traditional shops. Short food chains between producers and consumers on local markets are not unusual, particularly in the case of fresh fruits and vegetables. Wholesale markets play an important role in bigger cities, although they can be quite disorganised, with poor infrastructures. Most activities have relied on private business with some public intervention to monitor standards relating to business locations, health requirements, etc., but the power of the middleman is strong throughout the region.

The modern food distribution systems are characterised by self-service stores, which can vary in size from small supermarkets to large hypermarkets. Another feature is that these retail outlets are generally clustered in groups known as distribution chains, which adopt a variety of business approaches ranging from very small local “corner shops” selling a limited number of products to big supermarkets and hypermarkets with a large number of references, which are usually located in the outskirts, and customers need cars to get there. In developing countries the use of a car implies a certain level of income and in some cases also social status.

Price is of general concern for all types of retailers, but modern distribution adds other services, which people are willing to accept and to pay for when they reach a certain income level. Since products and services vary widely, it is very difficult to compare prices directly in order to make competitive assessments. Even comparisons of fresh fruit and vegetables should take account of the size of the unit sold, the point of time in the commercial season and the packaging, amongst many other variables. Straight price comparisons between traditional outlets and modern distribution shops would not be very meaningful.

Certain countries have been making the transition from traditional setups to modern distribution systems. Some of the indicators used to measure the change are: the volume

of food that is distributed in modern and traditional retail systems, the degree of concentration measured by the amount of food distributed through the four or five most important chains, the number of different distribution formats consumers have in their surrounding areas, the percentage of the chain's own labels sold in each distribution chain, the diversity of distribution formats that citizens can find in their surrounding areas as a measure of competition, the kind of products offered, whether they are fresh or processed, etc.

Without going into too much detail, it can be said that the intensity of this transition is very closely related to the economic development of each country, although there are also national rules, which promote or interfere with these developments. One main difference is that modern distribution is predominant in economically developed countries, whereas the opposite is the case in developing countries, where traditional distribution is the main retail system. For example, it is estimated that in developing countries modern distribution usually accounts for less than 20% of the total food sold on the market. In the EU Mediterranean countries, on the other hand, this change from traditional to modern distribution systems has basically already been accomplished, although the situation differs from one country to another. There are countries, for instance, where a high percentage of fresh produce is still sold through traditional shops. Public policies also differ as regards the expansion of distribution chains, and they comprise more or less restrictive rules.

Examples of developing Mediterranean food distribution

Nowadays, in developing countries, there can be a large number of food distribution channels, but the number of people using some of them is still limited. That is what appears to emerge from analysis of situations in Morocco, Turkey and Egypt.

Morocco, a country with around 30 million people, opened its first supermarket almost twenty years ago, and in 2009 an on-line supermarket opened in Casablanca with a good stock of fresh fruit and vegetables. Customers, who are usually under 40, have high purchasing power and have lived abroad, have been availing themselves of this unique offer, the services offered and the quality of the produce sold being of paramount importance to them, as is the case in most developed countries. The opposite is the case for people living in rural areas, who have low incomes and buy from the typical traditional retail outlets (souks). They focus on low prices, although they also value fresh produce. Morocco has had distribution chains in the main cities such as Casablanca and Rabat since the early 1990s. Approximately 50% of the total number of modern supermarkets is located in these two cities (USDA, 2010). Large supermarkets have now opened in all major cities and branches are following suit in medium-sized cities. Besides Moroccan groups with well-established distribution chains and market leaders, there are also foreign investors from the EU and Turkey. Direct contracting from producers is still limited, and produce usually goes through middlemen. The Plan Rawaj, running from 2008 to 2012, has tried to incite changes in food distribution and in many other aspects concerning consumer preferences. There are also great expectations of major transformations in the distribution sector by 2020 through measures to treble large-scale retail capacities. The number of establishments in the modern distribution sector has doubled in the last 5 years. So far, local capital has played a predominant role; Marjane

is the leading company with its current 52 stores. Foreign investment is expanding its presence; the Turkish company BIM, for instance, plans to have opened 150 stores by the end of 2012 (CIHEAM, 2011).

Turkey, with its population of over 70 million people, is another reference which illustrates the development of food distribution in an emerging economy. Only around 25% of the population live in rural areas and close to 18% of the total population are in Istanbul. Turkey is regarded as one of the seven most powerful emerging markets in the world, along with Brazil, China, India, Indonesia, Mexico and Russia. The modern distribution sector presents a combination of local companies, which are the market leaders, and foreign investors. Some of the strongest local distribution companies are discount retailers, and the influence of German companies is very strong. The British chain Tesco is an important player, entering the market in 2003 and now running 48 hypermarkets and 75 express outlets called Tesco Kipa.

Egypt has over 80 million people, with one large city, Cairo, playing predominant role. Most hypermarkets and supermarkets are in the suburbs of Cairo and Alexandria. There is a mix of foreign investors and national chains (USDA, 2009). Foreign investors from the EU and Middle East countries are the leaders in the hypermarket sector, but supermarket chains are led by local investors. It is estimated, however, that around 90%-95% of the food outlets can be classed as small grocery stores. The modern retail food service has tripled in five years.

There are other developing countries in the Mediterranean area with smaller populations and similar trends. AT Kearney (2011) provides an indicator of each country's potential for retail development. This management consulting firm ranks the 30 most promising emerging countries every year according to an index based on a set of 25 variables including economic and political risk, retail market attractiveness, retail saturation levels, the modern retailing sales area and sales growth. According to the classification for 2010, 10 Mediterranean countries were ranked as follows: Tunisia (11), Albania (12), Egypt (13), Morocco (15), Turkey (18), Bulgaria (19), Macedonia (FYROM) (20), Algeria (21), Romania (28) and Bosnia-Herzegovina (29).

Fast food services are constantly growing in the most developed of the Mediterranean countries. McDonald's is the biggest food chain, although there are other local companies in each country which try to adapt the concept of fast food to native culinary practices. Other American companies such as Kentucky Fried Chicken (KFC) and Pizza Hut are also established in many Mediterranean countries. The sector is expanding rapidly in the southern countries, particularly in large conurbations and youngster and tourist venues. The fast food sector is very strong in Turkey, although it still lags behind EU levels and most of the fast-food restaurants are located in big cities (USDA, 2011). The major chains operating in Turkey are foreign.

Corporate Social Responsibility (CSR)

Definitions and social ratings

The concept of Corporate Social Responsibility (CSR) emerged in the United States, and most of the studies dealing with the subject have been conducted there. The term CSR has been used for decades, but as it has evolved it has been adapted to the most demanding conditions existing on markets, those stipulated by shareholders and conditions in society in general. There have been many academic publications analysing this concept from different perspectives, such as fundamental business approaches or public contributions provided by private enterprises. Definitions were expanded during the 1960s and then proliferated in the following decades (Carroll, 1999).

The commoner definition is that CSR is a concept where companies integrate social and environmental concerns into their business operations and their interaction with stakeholders (employees, customers, shareholders, investors, local communities, or government) on a voluntary basis. It is thus closely related to the principle of sustainability, which argues that enterprises should make decisions based on the immediate and long-term social and environmental consequences of their activities in addition to their normal objectives of obtaining economic benefits. There has been constant improvement in the implementation and evaluation of CSR, but many grey areas still remain with regard to the conditions under which the firms' efforts benefit society.

In order for CSR to become effective an enterprise must define its values as an organisation, its performance indicators and the expected benefit for society. Some professionals believe that implementing CSR in their enterprises will help to cut costs and boost sales. A higher reputation with customers, but also with investors, stronger customer loyalty and higher employee motivation can bring benefits. Absenteeism and staff turnover can be reduced as the result of higher internal motivation. A further aspect is the impact that CSR can have on stakeholders' belief in the social actions that a company undertakes to promote social goals. Establishing the impact of corporate activities on society and coping with typical business activities such as risk management, brand development and internal and external communication is a tremendous challenge. There are many different norms and standards (Stanislavská *et al.*, 2010).

One of the problems is the relationship between social ratings and Corporate Social Responsibility (Chatterji *et al.*, 2009). It becomes difficult to measure the quality of companies' management systems. For example, there are clear clashes between management and unions about how often they should meet, and employees can disagree over their perception of the firm's management. Social and environmental rating agencies try to make firms' effects on the environment more transparent. The idea is that social ratings should help social investors by providing accurate information enhancing transparency as to the social responsibility of firms. One of the problems about ratings is that there is no transparency as to exactly how ratings are to be calculated and the variables to be considered. Many agencies try to evaluate past management practices together with current developments. Surprisingly enough, there is little consensus among the various lists produced in the United States such as the CRO's Best Corporate Citizens,

the 100 top-ranking companies in the Newsweek Green Ranking, and the Ethisphere Institute's Most Ethical Companies.

The Sustainable Investment Research International (SiRi) is a consortium of ten social investment research organisations based in Europe, North America and Australia. SiRi is the world's largest independent provider of sustainable investment research for institutional investors and financial professionals. Another important company is Kinder, Lydenberg, Domini Research & Analytics (KLD) which publishes a Broad Market Social Index, one of the oldest and most influential, which has clear implications for investment funds. One well-known case was when they downgraded Coca-Cola in their index because of the group's managerial decisions on labour and environmental practices in 2006 and this elicited severe negative reactions from various investors.

The voluntary ISO norms (International Standards) are commonly applied for many purposes. The ISO 26000 standard deals with social responsibility (ISO 26000, 2011). This norm is not a management system standard; it is based on seven core subjects as guidance for the governance of the organisation: human rights, labour practices, the environment, fair operating practices, consumer issues and community involvement and development. Since this standard was issued very recently – in 2010 – few companies have as yet incorporated it into their social responsibility social schemes.

The aims of companies involved in building social responsibility include enhancing their reputation with stakeholders and evaluating their social impact by analysing their relationship with citizenship, governance and workplace. The latter three factors constitute more than 40% of reputation, which is a key driver of trust, admiration and support. In the United States, the Reputation Institute and the Boston Center for Corporate Citizenship have together developed a Corporate Social Responsibility Index (CSRI). The CSRI is the combined average of the general public's perception along with the three factors mentioned above. They started in 2006 and are already applying this index in more than 30 countries. It is interesting to note that in 2010 food retail companies in the US ranked sixth, below beverages (first) and food manufacturing (third) but above general retail (tenth).

How to communicate

Drafting Corporate Social Responsibility reports is not an easy task and each company can have its own style, although global companies dedicated to these issues provide some general rules. Transparency and balanced reports are highly appreciated. However, accuracy comes with accountability and measurement. It is therefore important to establish the right indicators to define a particular business and its social responsibility, but also to follow general global practices in order to compare with other enterprises.

Another purpose of CSR is to establish sound communication between firms and their consumers, which can reinforce corporate visibility and transparency. Social networks are a new means of paving the way and obtaining feedback. Creating a company website is an effective way to establish that communication, but there are various approaches. Some companies provide general information for all of their customers, in one or several languages, but others also offer information about their activities in different countries

and they use the native language of each country. The latter is more effective because their customers feel that they have been identified more specifically and this promotes interaction. The most common channels used by companies are Facebook, Twitter, Blogs and YouTube, but the first two are the most popular. Platforms for sharing images, such as Flickr, are also used. Firms write contents in Wikipedia and LinkedIn, which are consulted by the general public and professionals respectively.

According to Snider *et al.* (2003), a study on how firms were communicating through the Web, found that multinational organisations act similarly in the development and dissemination of CSR messages. They focus their attention on the same stakeholder groups and on communication statements that are very similar. The authors state that globalisation is a meaningful word that affects many firms' operations. However, Idowu and Leal Filho (2009) analysed the differences in corporate social responsibility practices in twenty countries and found different approaches. Maignan and Ralston (2002) investigated how firms communicate about CSR goals through their websites and about how they achieve them. They compared experiences between the US, the UK, France and the Netherlands. The results highlighted considerable differences between countries as to the importance of being publicly perceived as socially responsible and the priority CSR issues. Firms cited a wide range of principles, processes, and stakeholder issues in order to demonstrate their commitment to CSR.

CSR in food distribution

Food distribution chains have been under environmentalist pressure and have tried to launch programmes to enhance their image. These programmes aim to demonstrate that they are concerned about environmentally sustainable practices, which range from promoting sustainable agriculture and creating farm animal standards to store recycling and composting programmes. One decision in this context is to avoid giving customers free plastic bags for carrying their purchases and instead to sell bags made of recycled materials, which can be used several times. This change has also improved their operating costs and has thus served a dual purpose, that of becoming more cost-efficient internally and of improving their corporate reputation externally.

Although distributors play a very important role in the agro-food chain, they have to rely on other stakeholders (Mena and Stevens, 2011). They thus are unable to act on their own since their action is contingent on their suppliers' behaviour, yet it is at their level in the chain that customers express their social concerns when they buy their products (Heyder and Theuvsen, 2009). Many of them want to deliver sustainable food that has been produced by responsible methods (Maloni and Brown, 2006). As current leaders in the chain, distributors establish voluntary standards for the other stakeholders, defining their own goals to enhance their reputation, which is one of the aims of their corporate strategies.

Food retailers engage in Corporate Social Responsibility for many different reasons, as do companies in other sectors (Spence and Bourlakis, 2009). It is always important to know to what extent private motives prevail over social goals. Piacentini *et al.* (2000) studied CSR activities by auditing food retailers to try to ascertain the nature and extent of their activities. Their study was complemented with in-depth interviews with key decision-makers in the confectionery retail trade. They found that the main motive was

to maximise space, profitability and customer relationships. Some companies recognised the benefits of being seen as socially responsible, but none of them was driven primarily by philanthropic motives.

One important issue is to know to what extent CSR practices are applied in developing countries, since large-scale multinationals procure a significant share of their provisions from those countries. A seminar was held in Morocco in 2006 in order to analyse the situation in this context in the Mediterranean countries. According to the participants, CSR is closely related to sustainable development. It aims to provide workers with full rights and the guarantee of working under good conditions without injustice or exploitation. It was estimated that only 15% of Moroccan enterprises were complying with labour law requirements, and it was concluded that a company would fulfil a large part of its social responsibility by observing the law.

CSR in three large-scale multinationals

Carrefour

Carrefour is the second largest food distribution chain in the world, but it is the largest in the Mediterranean area. A closer look at its goals and practices could thus be of interest to other distributors operating in the area. As part of the group's CSR, Carrefour places special emphasis on protecting resources, managing waste, promoting responsible consumption and practising social responsibility (Carrefour, 2011). The group pays special attention to ethics and gives priority to local producers, providing support for continuous improvement. This chain tries to develop long-term relationships with its suppliers and to ensure that they respect fundamental rights. It also rewards suppliers with the greatest commitment to sustainability. A further important aspect of this distribution group is its social responsibility: human resources management in the group is based on promoting dialogue, diversity and equality of opportunities.

Carrefour has established a strategic alliance with the non-governmental organisation FIDH, which comprises 141 organisations defending human rights around the world, for monitoring its activities in developing countries. This process started in 1997, and norms have been adapted to new circumstances. The emphasis is now on international labour standards and other human rights. Carrefour has articulated its international intervention in all Mediterranean countries where the group operates.

Migros

Migros is an excellent example of a good CSR scheme established in Turkey by a local company. This enterprise has also other establishments in other countries, although not yet in other Mediterranean countries. Its core values are transparency, accountability, responsibility and fairness (Migros, 2011). The company devotes special attention to the environment, education, health, sports, social assistance, culture and the arts.

McDonald's

McDonald's bases its CSR on the company's primary values, which it expresses as follows: 'placing the customer's experience at the core of everything we do, being committed to our people, believing in the McDonald's system, operating our business ethically, growing our business profitably, and striving constantly to improve' (McDonald's, 2011). It is implemented through various channels such as corporate governance and ethics, nutrition and well-being, a sustainable supply chain, environmental responsibility and employee experience.

Social responsibility in the public sector

Private businesses comply with public regulations and adapt to political environments. It is the responsibility of public administrations to create the right environment to attract distribution firms, but also to protect the interests of their citizens. This is a dilemma that is not easy to resolve, since conditions that are too restrictive can prevent companies from coming to a particular country, particularly in the case of multinationals that invest in many different countries and try to apply their decisions to large geographic areas. This was the case with Carrefour, for example, when the group decided to leave Algeria and, instead, give precedence to developing activities in Morocco. The reasons given by the company were lack of appropriate space for building hypermarkets and poor infrastructures for procuring products under constant conditions.

One of the main concerns of public authorities has been to find a way to control the change from traditional to modern distribution systems. Each new large-scale retail outlet or each supermarket expansion implies that many small traditional shops will go out of business. Modern distribution systems introduce efficiencies along the agro-food distribution chain and this has positive effects on monetary inflation rates and the opportunity for consumers to choose from a larger range of food products. But it puts pressure on small traditional retail outlets, which may be less efficient but which also fulfil social functions in the community by providing an outlet for local produce and preserving local traditions. The number of jobs – particularly those held by older workers – that are displaced from traditional retail outlets can become a social problem, and the pace at which that change takes place is crucial.

Developing countries should take advantage of the experience of developed countries with regard to transforming food distribution systems and the impact this will have on society (Petkoski and Twose, 2003). One important aspect is the interaction between urban planning and food distribution (Argenti and Marochino, 2005) particularly in countries where there are large cities, which sometimes account for a considerable percentage of the country's entire population. This situation occurs in many developing countries, and the FAO has been very much involved in helping public authorities to undertake the change and in monitoring the kind of intervention strategies required.

Food distribution plays an even more important role in periods of turbulent economic upheaval and price instability. Speculation may be an ulterior motive behind some price increases; a sound food distribution system where there is fair competition is the best deterrent to market instability and a means of promoting social welfare. It is an important social responsibility of governments and public administrations to establish the most appropriate conditions and infrastructures for taking advantage of structural changes. Corporate Social Responsibility has become a priority issue for governments. They want to act and to have impact on social and environmental issues in their relationships with companies, and they are incorporating multi-stakeholder strategies into their public policies (Albareda *et al.*, 2007).

It is also very much the responsibility of governments to strengthen the entire agro-food distribution system. Unfortunately, many food distribution chains have embarked

upon direct contract farming with producers and avoid obtaining supplies from wholesale markets to a large extent. Public administrations should put more emphasis on this level of the chain, because that is where many of the inefficiencies build up, as well as on markets close to producer areas, where information flows and minimum structural facilities are needed. Public concerns are also rising due to the current expansion in the catering industry (Rimmington *et al.*, 2006).

Foreign investment is a subject of heated professional debate. Public policies can take clear stances and have significant influence on future trends. However, the current global environment where the trend is towards more, and more liberalised, trade in goods and capital is helping to overcome some past political difficulties. In the Mediterranean area most foreign investments in modern distribution chains come from European countries, but there are some interesting developments such as companies from Turkey becoming established in Morocco or firms from the Middle East opening branches in Turkey. In some instances it has happened that foreign investors have left a country because expectations were higher than the situation would allow or because the rules for long-term investments were not sufficiently clear.

One aspect that the various governments must deal with is social disparity and how to address it by making appropriate changes (Doudich, 1995). Excessive incentives promoting modern distribution can disregard the fact that a high percentage of the population cannot afford to buy their daily food in those outlets. Governments should consider the entire population, especially those with low incomes, as well as the impact on local sustainable development (Constantino *et al.*, 2010).

EU approaches

European initiatives in 2001

The European Union produced a Green Paper in 2001 to promote CSR in the European framework (Commission of the European Communities, 2001). It was an institutional reaction to the increasing number of European companies that were promoting their Corporate Social Responsibility strategies. The paper focused mainly on companies' responsibilities in the social field, although it recognised the consequences that CSR could have on environmental protection, fundamental rights and reconciling the interests of the various stakeholders. It also recognised that new partnerships were necessary, since, although the CSR concept was applied mainly by large companies, it affected other companies – both public and private – including SMEs and cooperatives. The Paper was a step forward towards achieving the strategic goals adopted in Lisbon for the future of the EU, including that of building a dynamic, competitive and cohesive knowledge-based economy.

The political context was favourable for the development of CSR, since the Commission had already issued a Communication on sustainable development emphasising its importance. That Communication was also connected with a White Paper on governance in the European Union that had been launched by the Commission with a view to creating a favourable climate for entrepreneurship and the goals expressed in “Enterprise Europe”, a programme that aimed to create an entrepreneurial, innovative and open

Europe. The aim was that CSR should be coherent and compliant with Community policies and with international obligations, including the International Labour Organization (ILO) standards (freedom of association, abolition of forced labour, non-discrimination and elimination of child labour), since they are central to CSR applications, particularly in developing countries. The main idea behind the Green Paper was to provide a new general European framework to promote CSR. However, CSR relies by definition on voluntary decisions and goes beyond compliance with statutory provisions with a view to enhancing competitiveness; it thus should not replace legislation.

The Paper analysed the most important internal dimensions of companies, such as human resources management, health and safety at work, adaptation to change, and the management of environmental impacts and natural resources, and also put forward ideas on the external dimension of companies. It stressed the need to consider these issues in both the European and the international context and to include them throughout the supply chain.

In particular, it was considered that CSR promotes interaction with local communities concerning both their labour market and their physical environment, but also through the companies' social involvement in community causes. It also affects business partners, consumers and suppliers, who, for example, should be aware that their social performance can be affected as a result of the practices of their partners and suppliers throughout the entire supply chain, although the economic benefits of suppliers can sometimes depend primarily or indeed entirely on one large company. Companies could also promote entrepreneurial initiatives in the region where they are established. The Green Paper cited human rights as a further aspect of particular significance with all the political, legal and moral implications; codes of conduct are established not only for companies practising CSR but also for their sub-contractors and suppliers and are generally monitored by external parties, either public or private. The Paper concluded that global environmental concerns must be evaluated because of their multiple implications.

European initiatives in 2006 and other analyses

The latest policy developments from the EU date back to 2006 (Commission of the European Communities, 2006), when the Commission went a step further to provide greater political visibility for CSR. Having decided that it could best achieve its objectives by working more closely with European business, the Commission launched a European Alliance on CSR, which was open to all types of enterprise but was not a legal instrument and therefore did not have to be signed by any company. The Alliance was the outcome of several years of debate and clearly aimed to establish a reference for excellence for other countries. The Commission stated that CSR was an aspect of the European social model and proposed that a Multi-stakeholder Forum be convened regularly with a view to continually reviewing CSR progress in the EU. In order to promote CSR practices a series of actions were also proposed which emphasised the following aspects: awareness-raising and best practice exchange, support for multi-stakeholder initiatives, cooperation with Member States, consumer information and transparency, research, education, SMEs and the international dimension of CSR. The purpose of focusing on the latter aspect was to disseminate concepts in international forums and to promote bilateral

agreements with certain countries with special reference to human/labour rights, environmental protection and governance principles. The Commission considered that partnerships were extremely important for developing and implementing the concept.

In 2010, the European Union made a commitment to renew the EU strategy for promoting Corporate Social Responsibility as a primary factor for ensuring long-term employee and consumer trust in the long term. “Europe 2020”, which is the EU’s strategy for smart, sustainable and inclusive growth, includes such a commitment to renew the EU strategy to promote CSR as a key element in ensuring long-term employee and consumer trust (Commission of the European Communities, 2010).

Albareda *et al.* (2007) studied public CSR policies in the 15 EU countries and concluded that there were numerous similarities. So they classed them in different categories according to their emphasis on partnership, business in the community, sustainability, citizenship and the Agora model. They proposed an analytical framework, which comprised relationships between governments, business, and civil society stakeholders and could be applied to any country. This approach could be incorporated into a wider framework of social governance.

Future trends

As has already been mentioned, the development of food distribution systems is very much related to a country’s economic wealth. EU Mediterranean countries will be under the same pressure in the food distribution field, since they will be operating in other economic areas where the competitive references are in other EU or non-EU developed countries. Globalisation entails additional threats requiring measures to defend their own interests, but it also brings opportunities for expanding their business to other countries outside the EU, including the Mediterranean countries. Worldwide competition tends to impose similar conditions on many countries and firms. However, as one of the most important economic blocs in the world, the EU must become an example to other well-developed countries, and Corporate Social Responsibility should be implemented in the European social model to the full.

On the other hand, many developing countries around the Mediterranean are rapidly emerging on the economic scene. It will be important for them to evaluate the experiences of European countries and to learn from them. Their societies are changing, partly due to the growing awareness of what is happening in other European countries. Modern means of social communication have accelerated the process. Some of the food distribution firms that are promoting the process come from EU Mediterranean countries. Understanding Mediterranean countries will also have implications for food distribution. Economic change will need to be accompanied by social change and Corporate Social Responsibility could help to create links between corporate and public policies.

CSR has been an important tool for developing business on the basis of consumers’ reactions. Success sometimes relies on consumers’ willingness to pay more for food products as the result of greater awareness on the part of companies, such as greater concern for environmental protection or for workers’ wages. Consumers’ willingness

to pay will be an important factor in the future for many CSR-related issues. Food distribution firms produce a great deal of waste, and this is becoming a major problem in the agro-food system. Consumers should be aware of the cost of waste control and disposal and willing to pay for it. What will happen in the future will depend to a large extent on consumer education and willingness to pay extra costs, as some already do at the present time. This presupposes consumers with a certain income level and sensitivity to issues which affect them individually but also have implications for society as a whole.

Better and smarter ideas about what society wants will be needed in order to establish and implement the necessary rules. Since CSR is based on voluntary norms of conduct, each company can have its own strategy, although globalisation is inducing greater homogeneity in the food distribution system. Old references concerning competition may perhaps be revised. A more comprehensive approach to agro-food chains is required which comprises distribution. Distribution should not be analysed as a separate issue; the entire chain should be analysed as a whole, from producer to consumer. Not all societies require the same conditions; nor are all producers able to achieve the top objectives for competitive advantage.

Investment funds move their capital around many different alternatives on the stock market. They become important shareholders of big companies, and they can represent a broad spectrum of society, such as retired people from different parts of the world with different CSR sensitivities. Citizens are becoming more aware of social issues and they do not want to see their savings going to enterprises which do not follow Corporate Social Responsibility rules. CSR is also based partly on shareholders' perceptions, and companies must increase transparency and also improve internal communication amongst employees. Clear CSR goals, sound implementation and good communication will together have considerable impact on business.

Corporate Social Responsibilities should also be incorporated into public policies. Firms should define their social goals clearly and pursue them with the same intensity, irrespective of whether they are operating in developed or developing countries. Environmental issues are becoming matters of great concern to citizens throughout the world, although the pressure varies from one country to another. The danger is that developing countries could grant multinationals more advantageous conditions in order to make their territories more attractive for investment. Finding the right balance and reaching general agreements among developing countries could be part of the solution.

CSR has been developed and used primarily by major companies, especially multinationals, which have been operating in many countries and have found in CSR a source of value added for their products. It is now time for medium-sized companies to apply these concepts, even if only to compete with other companies that have already established such practices. This trend should be encouraged in developed countries, because developing countries are already facing the dual challenge of meeting the same standards as developed countries and ensuring that major companies apply the same principles on their territories regarding labour and human rights as well as environmental matters.

Conclusion

Two dynamic concepts – food distribution and Corporate Social Responsibility – have been examined in this chapter, the latter being analysed from the dual perspective of corporations and public policies.

Food distribution in the Mediterranean region has been discussed in an analysis differentiating between economically developed and developing countries. Food distribution trends in developed countries show that in the current circumstances large firms exert tremendous power over the rest of the agro-food chain and thus carry greater Corporate Social Responsibility, not only for their shareholders, but also for many other stakeholders in the food chain. Distributor leadership could have significant impact on other businesses along the chain, but the conduct of distribution firms could also be a reference for many other enterprises outside the food distribution sector. Leading companies in the food supply chain are becoming very large and are investing in many countries. They thus carry the great responsibility of following good social practices.

When new food distribution channels are used or new catering outlets are developed, Mediterranean societies should respond through their food consumption patterns to promote the Mediterranean Diet. At the same time, food distribution firms should firmly incorporate corporate social responsibilities into their business models, and public policies should be properly implemented.

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RESPONSIBLE CONSUMPTION

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Consumption is the basis of the modern economy and the fulcrum of business activities. Without consumption, companies that produce goods and services would have few reasons to exist. All the major economic theories have been founded on it, especially since the Industrial Revolution, hence the rise of “mass” consumption. As exchange economies have intensified within the framework of what we define as the process of “globalisation”, and also as the result of new forms of trade, consumption-related problems have multiplied and grown more complex. Whereas on the one hand it has become harder to protect the consumer, on the other the consumer has acquired new means of self-protection and networking.

In this article we confine our analysis to food consumption and the problems that relate to it. It is thus important to point out how the criticalities of the present economic system (from production/processing through distribution to consumption) emerge more in this sector than in others.

We are concerned in particular with the Mediterranean region, and we seek to analyse consumer behaviour as it is and could be in relation to the Mediterranean Diet, a cultural heritage that, albeit common to the people of the area, can vary widely from one place to another. Here we discuss how and why it should be promoted, protected and developed.

Consumer associations: a little history

Even the most ancient religious and legal codes, such as the Old Testament, contained an embryonic form of consumer protection, involving almost exclusively the prohibition of adulterated foods. It is very difficult, however, to trace the complex developments of the last two centuries back to those early laws. With the advent of serial and industrial production, consumers have been progressively deprived of direct forms of control over the characteristics and quality of the products they purchase. The split between the act of consumption and the acts of production, processing and distribution has cut consumers out of supply chains to the extent that they are now little else than the final and largely passive link. This may be one of the reasons why the earliest forms of protection came, slowly or sporadically, directly or indirectly from the legislator, thus from above.

It was the North Americans who set the fashion with the first antitrust law, the Sherman

Antitrust Act of 1890, which was effectively the first step towards modern consumer protection legislation. The original aim was to combat monopolistic and oligopolistic combinations within the capitalist system. The Act nonetheless was also a first attempt to introduce elements of protection into a framework that was not that of a perfect economic and market system, a setup in which, through supply and demand formation mechanisms, free competition ought to have been the main consumer “watchdog”.

The twisted logic of capitalism was also the driving force behind the subsequent stages in the development of the consumer movement in North America. It is interesting to note that the aim of the first association, the National Consumer League, founded in 1898, was not so much to defend consumers as to defend workers, which they did by commending the products of those factories in which conditions were most respectful of their dignity and health. Women played a fundamental role at that early stage and soon made these demands their own to assert their rights as the producers’ main customers. Hence the first list of quality food products was published by the women’s magazine *Good Housekeeping* in 1905, the year before the first law on food and pharmaceutical safety and meat control was passed by Congress (Zunz, 1998). The battle against aggressive capitalism and the quality of food and pharmaceuticals remained key issues for the definition of consumer awareness for many years. That awareness grew to such an extent that in the 1950s the need was felt in the United States for political representation of the consumer movement, which was strong throughout the country, albeit under different banners.

It was also in the 1950s that consumer movements and associations began to spring up in Europe: first in Denmark in 1947, then in Great Britain and the rest of Northern Europe, and later in France and Germany. The first consumer groups also began to appear in the Mediterranean region in the same period (in Italy in 1955). They followed exactly the same model as their Northern European counterparts and thus developed mainly within political movements and parties, by which they were invariably influenced. As had previously been the case in the United States, the first battles of consumer associations in Europe were focused in the food and pharmaceutical sectors. But the power and influence of these associations remained relatively limited until Member States of the European Community began, very slowly, to adopt Community laws on consumer protection.

A glance at Europe and the Mediterranean

Although it is important in this context to summarise the main stages in the development of consumer movements (Alpa, 1995), it is equally important to provide an overview, albeit by no means exhaustive, of the evolution of legislation, namely of the legal tools that have allowed associations to perform their functions to the full.

As we suggested above, legislation in European States has inevitably been influenced by the development of Community policies. Although a declaration of intent to pursue active consumer protection was incorporated into the Treaty of Rome in 1957, the EEC let fifteen years go by before it took a firm stand on the matter. It was in the 1970s that the need for initiatives to protect the health and economic interests of citizens and the Community was finally appreciated and the legal systems of Member States were harmonised in aid of trade and commerce. In 1975, a European Council resolution

reorganised and rearranged all existing initiatives, giving priority above all to the protection of consumer health and protection against economic risks, the provision of consultancy and assistance concerning compensation for damages, consumer information and education, and consumer consultation and representation prior to the passing of any legislation that might affect consumers' interests. Since the Treaty of Maastricht (1992) and in the three-year plans enacted from 1990 onwards, health protection, economic interests and comprehensive information have continued to be the cornerstones of EC policy. However, declarations of intent have not always been backed by adequate legislation, and problems of harmonisation are still among the main hurdles to be cleared.

The 1990s saw increasing recognition – including at normative level – of the role of the associations that were then proliferating around Europe and of consumers as special partners in talks with the institutions. While this raised popular awareness, it also fragmented the initiative, which, as part of a highly complex normative framework affecting the most diverse economic sectors, largely failed to foster the implementation of effective policies.

When we consider the Mediterranean region as a whole, the picture is more complex. Here, in fact, the European countries that are attempting to harmonise their legislations are juxtaposed with another group of countries with very different laws, not always stable political situations and very different economic priorities – which by no means facilitate the organisation of citizens into associations able to collaborate internationally in any effective way. The European Union has bolstered its relations with Mediterranean countries, particularly after the Barcelona Conference of November 1995. The meeting was attended by the foreign ministers of the then 15 EU Member States and 12 countries from the wider Mediterranean region. On that occasion, the participating countries unanimously adopted a declaration and a multilateral working programme embracing, among other things, consumer protection. In the wake of the developments in Barcelona, a protocol agreement among the Liguria, Sicily and Campania regional authorities in Italy established CONSUMED, a consumer protection network that has made overtures not only to public institutions, but also to consumer associations in the Mediterranean countries concerned. The network has produced a helpful document (CONSUMED, 2009), which summarises the legislative situation in countries in the Mediterranean region, highlighting their heterogeneity and pointing out how long the road to harmonisation across the whole region could be. Suffice it to say that the “designation of origin” protection system in force in Europe has no bearing whatsoever on other Mediterranean countries.

Consumer associations in the Mediterranean

In some Mediterranean countries, especially on the southern shores, associations have been created by governments. Here, due to the lack of norms or, where norms exist, of the difficulties involved in enforcing them, consumer protection has been less effective.

As part of the enlargement of the European Union, prospective Member States are expected to meet a set of important parameters designed to achieve a minimum level of equilibrium as a common denominator for their admission. When talks for admission begin, the screening process to which candidates are subjected envisages collaboration in trans-European networks and protection of consumers and their health. For example,

pending a more open social fabric, Turkey backed its candidature for admission to the EU Commission in 1999 through its principal consumer protection organisations, such as *Tüköder*, a consumer rights protection association, and *Tüketici Hakları Derneği*, a consumer rights association activated by volunteers and broadly represented by pensioners, government officials, workers, engineers, lawyers and homemakers.

Faced with a normative situation still a long way from providing effective, complete and strong consumer protection, the association movement in the Mediterranean appears increasingly heterogeneous, embracing a diversity of subjects with varying potentialities and objectives. Together with protection in the banking, insurance and e-commerce sectors, protection in the agro-food sector is certainly one of the most frequently shared priorities, but it is largely confined to health guarantees, protection against fraud and proper product labelling. In such a complex context, often in contrast with the interests of the agro-food industry, factors such as food quality, variety and origin are not always assigned the importance they deserve – in fact, in some cases they are completely ignored.

A good example of this dynamics is found in Lebanon, where a network of Earth Markets, a particular kind of farmers' market, has been successfully set up by Slow Food. After experience in Tripoli, the Beirut Earth Market was opened in 2009, representing the culmination of the work done to support small-scale quality products across the country. Before the Earth Markets were created, small producers in Lebanon had no proper or regular opportunity to sell their products to consumers direct except in their villages. The opening of these markets has provided a commercial outlet for all of the farmers and herders involved, who are now enjoying unexpected economic benefits with a significant effect on the lives of entire families. In Beirut today fifteen small-scale producers can sell their products – ranging from fresh fruit and vegetables to *mouneh* (traditional Lebanese preserves), *mankoushe* (traditional thyme-flavoured pita bread), olive oil and natural artisan soaps. The Beirut Earth Market has also been a success with the public since the number of visitors is increasing, and it has furthermore become a source of raw materials for some of the top chefs in town. Furthermore, the market is not only a place where people can buy and sell, it is also a place where they can meet and socialise and discover and appreciate Lebanese culinary identity. In addition, the Beirut Earth Market has become an example of peaceful coexistence. Although they come from different parts of the country and represent various religions and ethnic groups, the producers display their products side by side, establishing good relations and helping one another.

To explore the subject we are concerned with here – namely responsible food consumption – in depth, we shall now shift our field of enquiry to establish exactly what we mean by food consumption and how it has evolved in the context of the “Mediterranean Diet”. We then draw up guidelines for true respect of the Mediterranean Diet, which can be ensured not only by favourable social and production conditions, but also by consumer choice.

The paradigms of consumption

As can be deduced from the historical outline above, consumer associations come into being and develop mostly round two fundamental factors: prices and fraud. For a long time the commodity fields taken most frequently into consideration were food and

medicines, since attention was largely focused on economic and health factors. This pattern changed very little in the course of the last century and it was on this basis that most of the modern associations came into being.

Such associations, it seems fair to say, were born entirely of capitalism in order to correct its malfunctioning. Monopoly or oligopoly situations can influence price trends to the detriment of the consumer, whereas, if no controls are in place, growth in scales of production can cause damage to health, particularly in the agro-food sector. Associations thus have the job of monitoring, reporting, informing, taking legal action (the instigation of class-action lawsuits is becoming widespread) and exerting pressure to prevent instances of the “malfunctioning” of capitalism from harming people.

It would be reductive, however, to consider consumer responsibility only from the point of view of what consumer associations have done and do. Since consumption is, first and foremost, a matter of choice, the consumers’ responsibility resides, above all, in his or her ability to choose. It is thus fundamental to understand what makes a consumer prefer one product over another. If, in the food sector, health and price parameters are undoubtedly decisive, it is also true that, as we gradually enter the so-called post-modern stage in history, other factors are becoming increasingly relevant. Post-modernism is seen as a reaction to the “monotony” of a positivist, technocratic, rational vision of modernity and the standardisation that ensues there from (Sertorio and Martinengo, 2008). We are now living in Bauman’s “liquid society” (Bauman, 2000), in which a change in styles of production has been matched by changes in styles of consumption.

Recent food crises should also be mentioned when considering consumer choices and price influence. A new feature of agriculture is the high unpredictability of food prices, and it is most likely that agricultural production will have to live with this unpredictability in the near future.

After the crisis that emerged in 2007 and continued until mid-2008, with a sudden increase in food prices, quotations started to decrease again until early 2010, when there was another upward trend in prices. Many of the causes of this tendency have been investigated, and biofuel production, which takes land away from food production, seems to play an important role. This unpredictability had many negative consequences for both producers and consumers, since, on the one hand, it concerned lower incomes and, on the other, food shortages and price increases.

If we confine our field of enquiry to food, new cultural elements are superimposed on a Fordist model – to borrow a production term – in which food is ultimately considered just like any other consumer commodity. From both the production and the consumer point of view, the industrial agro-food model has stripped food of many of its values. If fair price and health are the prerequisites for a foodstuff, due to the reductionism of ensuing industrialist and consumer models we no longer attach importance to many of the requisites that are decisive in the building of a concept as complex as quality. As all the many advertisements and commercials that misuse the term demonstrate, for industry a product is “quality” simply because it is above minimum standard – which ought to be ensured by law – and nothing more. As soon as a product improves by some parameter (use of raw materials, processing technique, less recourse to additives,

certification or mark of origin), we begin to talk in terms of excellence, sometimes even of production niches.

As a result of this type of approach, taste and the fact that food always comes from complex ecosystems on which human responsibility weighs have been completely underestimated. The outcome – the impoverishment of natural resources and food production, with progressively decreasing average organoleptic quality – is there for all to see. The race towards lower and lower prices (accelerated by the market and bargaining power of organised large-scale retail) has done the rest. Once factors such as taste, diversity and the sustainability of production processes became secondary, average quality further declined, eventually plummeting to a minimum that, in some cases, dropped well below the acceptability threshold. Such low prices have also created increasingly unsustainable conditions for many actors in the supply chain, especially farmers and fishermen, the people who grow, raise and catch our food. Agriculture has arguably never been so deeply in crisis as it is today, in Europe and in the rest of the Mediterranean region, where it is one of the factors behind the popular discontent that has triggered great political instability.

The “Fordist” approach to food production has inevitably influenced modes of food consumption, impairing consumer choice. People have simply adopted the minimum prerequisites of agro-food production as their criteria and ultimately propped up a system, now global, that is characterised by the fact that it attaches little value to food or the vast number of human activities related to it. As Carlo Petrini puts it, today we may well no longer be the ones who eat food – it is food that is eating us. Food is in fact now eating up the land, ecosystems, biodiversity, farmers and our cultures (Petrini, 2010).

However, with post-modern society and the structural crises that have hit the capitalist system over the last few years, the model has started to creak, and new consumer needs have increasingly emerged. A very strong impulse has come from environmentalism, which, as the effects of global warming have become increasingly apparent, has assumed the appearance of a veritable world movement. The importance of the question of social justice and serious global inequities, first underlined at the World Social Forum in Seattle in 1999, is now also undeniable. Food and food policies have become an important way of addressing these new issues, which growing segments of the world population have now adopted among their new choice criteria.

The Mediterranean is once again at the centre of the world. The social, political and economic situations on either shore are very different, but never have they been so closely interconnected. The northern shore depends partly on energy from the southern shore in the sense that an increasingly sizeable share of European agricultural and food production is the fruit of the labour of immigrants from the Maghreb region and sub-Saharan Africa. At the same time, European surpluses are swamping African markets, causing enormous damage to local products by exploiting the crisis situation that is forcing African peasants to leave their land and come and seek their fortune on the Old Continent. All this is happening in an environmental framework in which shared management of several common resources is necessary: the most important of these is the sea itself, on which European and other countries are directly situated, and which also exerts a significant influence on non-coastal countries in the region.

Protection of the landscape, respect for the environment, safety from polluting emissions, naturalness, diversity and wholesomeness of foods, defence of biodiversity, recognition of minor cultural identities, gender questions and social justice – such are the new paradigms that are beginning to gain ground in the world of consumer associations. Hence the birth of the critical and responsible consumer.

In this type of context, many associations concerned with the environment or problems of social justice and many non-governmental organisations working in poor countries have met with the demands of consumer movements. As in the early stages, when the first American consumer movements were formed to expose factories in which the lives of workers were being exploited inhumanly, ethics is once more a factor that guides consumer choices. As campaigns to boycott the large multinationals mount, so consumers are growing more aware of their power and of the pressure their choices can exert in orienting markets and products.

The Slow Food association, born as a “movement for the defence of and the right to pleasure” (Slow Food Manifesto, 1989), is also progressively characterised by the strongly ethical nature of the choices it shares with its members. In the early stages, in the mid 1980s, Slow Food saw the defence of “tranquil material pleasure” (Slow Food Manifesto, 1989) as an antidote to the “fast life” and as a far-reaching criticism of the global consumer system. Its demands have since extended from food to progressively embrace ecology and social justice (albeit always in terms of their connection with food). Here lies the originality of the path chosen by Slow Food, which has developed from being a movement of “oeno-gastronomes” into an eco-gastronomic association, whose philosophy is summed up today in the slogan “good, clean and fair” (Petrini, 2007). This new definition of quality is paradigmatic of how consumers are changing their food choice criteria. This is not a question that concerns only wealthy countries that have long achieved food security, since we see similar examples in different contexts precisely in the Mediterranean.

Environment, sustainability and workers’ rights are taken increasingly into account in the many consumer protection and cooperation projects on all shores of *mare nostrum*. The new definition of quality that is being developed throughout the world comprises the following aspects: the organoleptic property of foods (“good”, the first revolution, that of pleasure and personal gratification through the training of the senses); ecological quality (“clean”), through food cultivation, processing, distribution and consumption; and, finally, social justice (“fair”), in acknowledgment of the disastrous conditions in which billions of peasants live (not only in the global South) and in recognition of their precious labour from a human and economic point of view. In “liquid society”, consumer paradigms have changed and, in view of the multitude of crises which the world is experiencing, critical and responsible consumption is assuming strategic importance and is potentially capable of reorienting the entire global food system.

Slow Food in the Mediterranean

Slow Food implements the new paradigms of quality (good, clean and fair) through a number of projects:

- the Ark of Taste, which identifies and catalogues traditional quality food products endangered by industrial agriculture, the deterioration of the environment and the risk of extinction;
- Slow Food Presidia, which set out from the Ark of Taste catalogue to salvage traditional crafts and processing techniques and to save native animal breeds and old fruit and vegetable varieties from extinction;
- Earth Markets, a network of community-managed markets which allows producers to meet, get acquainted, exchange information and, above all, sell their products at fair prices;
- School, Urban and Social Gardens, Slow Food's most significant and important educational project, which involves the younger generations in particular. As part of the Slow Food "A Thousand Gardens in Africa" project, gardens are designed to produce fresh and genuine vegetables as an important source of healthy food and bring supplementary income to local communities. The goal is to plant a thousand gardens across the continent, including all of the African Mediterranean countries involved in this project, by 2012.

Slow Food in Morocco

The Moroccan context is a good example of Slow Food's real commitment in the Mediterranean. Here a firmly rooted network of communities made up of producers, consumers, teachers and students is growing high-quality local products, some of which are promoted by the Presidia project. Argan oil, for example, produced in south-western Morocco, has been a Slow Food Presidium since 2002. A DVD on the taste and aroma of this excellent product was produced in French as part of training activities involving young people in particular. In addition, a Presidium diversification project has developed the processing of waste from the extraction of argan oil to produce flour for baking. Taliouine saffron, nicknamed red gold, became a Presidium in 2007. The 11 growers from the historic Souktana plateau now use their product to promote the area at the annual Taliouine Saffron Festival and through participation in international events. In a bare rocky valley at an altitude of 880 metres in the foothills of the eastern Anti-Atlas Mountains in south-east Morocco, the Alnif Slow Food community is closely involved with the Alnif Cumin Presidium. This basic ingredient of Moroccan cuisine is used to prepare *tajines*, couscous and traditional soups, and is also excellent with vegetables and boiled meats.

In the Rif Mountains in north-east Morocco, Slow Food women and members of the Al Wifak association still collect salt and process it the traditional way. Zerradoun salt is the latest Presidium project product in Morocco. Slow Food is also involved in a project in support of food communities in south-east Morocco for the production and processing of M'hammid dates, Asjen couscous and the Middle Atlas goat. The association's network in Morocco now plays a major role; it organised and hosted the last Slow Food International Council, which involved several countries in which the movement has members. Local Universities (Agadir, Kenitra and Rabat) maintain continuous exchange with the Moroccan people (producers, schools) with regard to training in fields such as food and taste education, raising awareness about OGMs and education on the use of certain local foods. In addition to the local actors listed so far, there is also a promising network of caterers who actively participate in many Slow Food events and educational programmes. At the local level, the projects are organised

in collaboration with Slow Food Convivia and Terra Madre network communities, the fundamental structures of the association.

For further information: www.slowfood.com; www.slowfoodfoundation.com; www.terramadre.org; www.earthmarkets.net

Countries	Convivia	Presidium	Communities	Earth Markets	Gardens
Northern shore					
Albania	0	0	5	0	0
Bosnia	3	2	11	0	0
Cyprus	2	1	3	0	0
Croatia	5	1	6	0	0
France	39	12	121	0	18
Greece	6	0	11	0	0
Italy	292	193	350	13	393
Spain	32	9	65	3	52
East coast					
Bulgaria	7	3	15	0	0
Israel	5	0	7	1	0
Libanon	1	2	9	2	0
FYROM	9	2	8	0	0
Palestinian T.	1	0	11	0	0
Turkey	20	0	27	0	0
Southern shore					
Algeria	0	0	3	0	0
Egypt	3	1	7	0	30
Libya	0	0	1	0	0
Morocco	10	4	32	0	60
Tunisia	0	0	1	0	3

Source: www.slowfood.org

Mediterranean Diet: by nature or by choice

“Good clean and fair” food production may be a hard aim to achieve on a vast scale, but it does represent the image of the food currently demanded today by what may be considered avant-garde consumers, arguably a minority, but undoubtedly already sizeable and bound to grow in the future.

It is no coincidence that “critical” food consumption of this type should have appeared in the Mediterranean where, aside from the nutritional and prescriptive elements codified by Ancel Keys (Keys, 1975), the so-called “Mediterranean Diet” also represents a way of relating directly (or quasi directly) to production, in which the origin of food is a decisive factor alongside diversity, freshness and seasonality. These elements, which are essential for any discussion of the Mediterranean Diet, are to some degree antithetical to the logic of industrial mass production, which is why the more this type of production has progressed, the more they have been overlooked.

The concept of the Mediterranean Diet was developed around a nutritional model based on the traditional food systems of countries on the European side of the Mediterranean, in particular Italy, Greece, France, Spain and Portugal. But the idea also refers to a complex system that goes beyond mere nourishment: it encompasses a system of lay and religious traditions and rites and thus defines not so much a selection of foodstuffs as a way of thinking about food and relating to it.

It was Ancel Keys who first introduced the concept of the Mediterranean Diet to society, describing its distinctive features and highlighting its health benefits. Although the research carried out by Keys suggested that a Mediterranean-type diet ensured a better state of health, this way of eating has been progressively abandoned since the 1950s. Far from being an immutable fact, the concept of the Mediterranean Diet is part and parcel of the culture and identity of a certain society, subject to the sociocultural dynamics that affect the population itself. The upshot is that in the fifty or so years since *The Seven Countries Study* was completed, the Mediterranean Diet has evolved under the influence of nature-based, social, professional and, last but not least, economic questions.

The changes that have taken place in Europe over the last few decades have influenced society and people’s lifestyles and, consequently, their eating habits. The general observable trend has been of changing daily eating routines and places of food consumption. Today, unlike fifty years ago, consumers live with industrial products and have to some degree delegated care about their food to producers. This has weakened their food culture and often left them with little knowledge of the connection between food, body and health. In order to understand how this situation has come about, it is necessary to consider precisely the changes that have taken place in society over the last few decades (Padilla, 2008).

The general trend is a drop in the size of family units and a shift from extended families to nuclear families, sometimes composed of one single person. At the same time, not only is the average age of the population increasing, but also the number of individuals working at an older age. In other words, families are growing smaller, more and more people are working away from home, the pace of life is accelerating and leisure time is progressively diminishing. Eating styles and habits are consequently adapting, and as a result the number of meals consumed outside the home is increasing and the time dedicated to eating in the course of the day is decreasing. Speaking of time, it is important to stress how the concept refers not only to the real time of meal consumption – more and more concentrated – but also to all other food-related activities: from the time required to become acquainted with a food, to that required for its preparation, to that devoted to the sharing of it (Eurispes, 2010; BFCN, 2010b).

In practical terms, this change has translated into an increase in the demand for pre-cooked, ready-to-eat food, to the detriment of traditional preparations; in other words, into the abandonment of the Mediterranean Diet, which requires time and knowledge, for other less wholesome models. As Keys' studies had already suggested, the direct consequence of this abandonment has been an increase in the frequency of pathologies correlated to poor eating habits, such as cardiovascular diseases and type-2 diabetes, as well as in the percentage of overweight and obese people.

Over the last few years, we have witnessed an attempt to return to an eating style as similar as possible to the principles set out in the early studies on the Mediterranean Diet. Today anyone who decides to follow a healthy diet model does so because he or she is aware of the benefits it will bring. In other words, the consumption of some foods as opposed to others is no longer so much a question of the mere pleasure they can give or of their availability as of other factors such as their low percentage of fats or their high content of components beneficial to the health.

The much-talked-about Mediterranean Diet is often presented as the best for ensuring a good state of health, and a number of surveys have shown how the abandonment of this diet is not necessarily accompanied by a cultural loss of awareness of how important healthy eating is for physical well-being; whereas the majority of European citizens realise that this is the case, what we observe is, rather, a rift between our ideal conceptions and what we manage to put into actual practice on a daily basis.

All in all, what we are seeing is a shift from a situation in which individuals followed a Mediterranean dietary model simply because they only ate what was available to a situation where people who follow it do so out of choice on the basis of ideas and awareness, irrespective of the variety of foodstuffs available. The basis for a good diet depends not so much on the choice of what to eat but on good practices and responsible behaviour that attributes value to food. This attitude involves a new approach to food in which sensory pleasure is not only related to, but indeed influenced by, its sustainability in environmental, social and health terms.

Is the customer always right?

Food has always been one of the key elements for defining the identity of a population and differentiating its culture. Even today diet is still seen as one of the most important distinctive features for the definition of cultural, social or political boundaries and for the knowledge of other traditions. Food acts as a sort of visiting card with which a person presents him/herself and, as such, may become the initial point of contact for promoting meetings and exchanges between different cultures.

The new consumer, defined by different organisations as a “co-producer” or a “consumActor”, can certainly be considered capable of orienting production and, in part, this is what is happening now. But is it also true that “The customer is always right”? Perhaps it is the market that makes the customer right.

Historically speaking, industrial food production has been strongly supported, if not expressly demanded, by the average consumer. In the early post-war years, average living

conditions in many Mediterranean countries were below the poverty line. The first demand was for more food at cheaper prices, a demand that industrial production was certainly in a position to fulfil. Later, once satisfactory food security had been achieved, consumers began to demand products that were easier to prepare and quicker to supply and consume. This marked a triumph for large-scale retail: pre-cooked, frozen and ready-prepared foods appeared on the market, and industry added more and more stages to the transition from field to table. Average consumers in the Mediterranean region were basically asking to be freed from a difficult past in which food provision was not only problematic and costly, but also extremely tiring. Domestic food preparation and conservation required a great deal of time and effort, and industry deserves praise for doing its utmost to solve the problems of everyday life, relieving the consumer of many food-related chores and offering everything at an affordable price: namely a price in cash, which citizens who had abandoned agriculture were beginning to dispose of in large amounts. However, another price was paid on account of these industrialisation processes, a price not in cash but one that certainly hit the community, undermining the very concept of the Mediterranean Diet and causing many of its premises to collapse, or, at least, seriously compromising them.

Intensive production in the countryside and serial production in factories have created a system capable of distributing more than ample amounts of food to the population, but they have also had dire secondary effects. Some of these have been mentioned above and there is a vast literature on them, but here is a brief list: pollution (primarily CO₂ emissions); the endangerment of fertile soil and aquifers; the decline in the average quality of food; over-standardisation and the depletion of biodiversity; scandal and fraud; ever lower wages for farmers who have abandoned the countryside *en masse*; the consequent destruction of the sociocultural rural fabric; lastly, a consumer system in which foodstuff wastage has been calculated at a third of production (FAO, 2011). Of course, if we consider the Mediterranean region, these negative “collateral effects” take on many different forms. Not only are there evident differences between the countries of North Africa or the eastern shore and those of Europe, but there are also very diversified situations within the European countries themselves. It can be argued, however, that comparable trends exist everywhere, albeit moving at different paces and with different levels of intensity.

This is not the place to analyse the gravity of these phenomena. Suffice it to say that on the one hand they have exerted profound influence on what is commonly considered the “Mediterranean Diet”, while on the other they have triggered the new trends in “critical” consumption described above. The two points are linked, since what the post-modern consumer demands is based on premises that were and are those of the Mediterranean Diet, where it still exists.

As already pointed out above, when we speak about the Mediterranean Diet we refer (or at least ought to refer) to food of local origin, mainly consumed in the season in which it is naturally available, with as few additives as possible. Food should be consumed mainly fresh or made from raw materials which have been produced without the use of invasive agricultural farming techniques and have not travelled from one end of the world to the other and thus have not made a strong impact on the environment. Food should come from rural communities with relatively strong, solid identities and traditions. Food should

not generate (or should reduce to a bare minimum) social and environmental costs, and should even offer solutions to these problems, all in the spirit of “multifunctional” agriculture, in which positive externalities prevail over negative ones. Food, in short, should be at the centre of human activities, the driving force behind conviviality in the broadest sense (Illich, 1973), capable of allowing consumers to become once more (or, better still, turn into) the “co-producers” or “consumActors” mentioned above.

The co-producer is no longer a passive consumer but an active one, an integral part of a sustainable production process, no longer detached from it. A co-producer is a person who is fully aware of the processes and the people that have brought food to the table. This is one of the reasons why he or she is able to orient its production by demanding more sustainable food, for example, or fairer prices for farmers. A co-producer is a responsible consumer, close to production and capable of understanding and orienting it.

It is easy to see that, in a heavily industrialised global food system, the path co-producers follow is beset with difficulties. Yet it is the “contextual” premises of the Mediterranean Diet that provide the wherewithal to follow the route of responsible consumption and assert the consumer’s responsibility to rebuild a gastronomic culture.

This culture should consider food as central to human lives and involve a complex system of values and connections with the natural world. This is why it is necessary to be able to “understand” food through all useful information and personal education, which by necessity must start at school and continue throughout life. To achieve all of this, consumer responsibility is not enough: consumers also need to be given support and the means of exercising this “comprehension”, which is still limited and often difficult to achieve – a long way away from the immediacy it used to have in the rural contexts where it came into being and where what was subsequently codified as the Mediterranean Diet developed.

Is it possible to return to an authentic Mediterranean Diet?

We must thus become once again the subject of the phrase “man eats food”: we must devote ourselves to the governance of the planet. Eating implies, above all, responsible consumer choices. People’s food consumption and lifestyles, habits and behaviour are inseparably linked. This is what it can mean today to give some food choices precedence over others. The concept of “Mediterranean” expresses not so much what we eat but how we eat it. It is a way of thinking about food and relating to it, and it encompasses a range of values, to some extent irrespective of strictly nutritional aspects. To return to the concept of Mediterranean today thus means promoting a new food paradigm that is more respectful of people and health, not only in the sense of self-preservation but also in the sense of the preservation of planet Earth itself.

The right to healthy food needs to be defended today more than ever before, especially in the wealthy countries, in which hunger is no longer a problem, but where the spread of cheap, industrially produced food of poor nutritional quality is the source of serious

health problems (especially among the younger generations) and of manifest inequalities in the distribution of the food available. In this context, the typical features of what we conventionally define as the “Mediterranean” become a health choice that needs to be promulgated and pursued. The rediscovery of “simple” food products, such as relatively unprocessed wholemeal cereals, the generous use of fresh and seasonal fruit and vegetables, preferably grown using integrated, organic or biodynamic methods, lower meat consumption with an eye to quality as opposed to quantity, lower consumption of sodium-rich processed foods, simple sugars, saturated fats, the consumption of fresh foods, the “intelligent” consumption of alcohol—all these are daily behaviours that can exert strong influence on our state of personal and collective health. The goodness and wholesomeness of well-produced foods prepared in the least refined, least elaborate way possible must be appreciated. It is all a question of culture or, better still, of education. As Michael Pollan points out in *The Omnivore’s Dilemma*, when it is possible to eat everything nature has to offer, deciding what it is good to eat inevitably generates a certain apprehension, especially if certain foods prove harmful to the health, or even lethal (Pollan, 2006). To combat the junk food boom, guidelines must be identified that are easily applicable and adoptable on a daily basis so as to avoid unbalanced or incorrect eating styles and to opt for a more balanced diet.

To address this need, in 1992 the US Department of Agriculture created its first food pyramid, the basic criteria of which are known to all. The base consists of foods of vegetable origin (typical of the Mediterranean Diet) with high nutrient and protective compound content and low energy density. The next section up contains foods with higher energy density (very common in the Mediterranean Diet), which ought to be consumed with less frequency. The scenarios of the last few years have made it necessary to broaden horizons, viewing food in terms of its positive impact not only on individual health, but also on that of the planet. This is why a group of scientists and researchers elaborated the paradigm of the “Double Pyramid” of healthy food for people and sustainable food for the planet (BFCN, 2010a). The model basically takes that of the original food pyramid and flanks it with an inverted “environmental-food” pyramid. This demonstrates that the foodstuffs we ought to consume most frequently are also the ones with the lowest environmental impact, whereas those to be eaten less frequently are also the ones with the highest environmental impact. Environmental impact is calculated according to three variables: Carbon Footprint (generation of greenhouse gas effect), Water Footprint (consumption of water resources) and Ecological Footprint (use of land).

It is thus possible to combine in a single model two different but equally important objectives: health and environmental protection, eating better in order to live in a better world. Seen through this lens, the Mediterranean Diet is not only a set of foods associated with a well-defined geographical area, but also an important tool of consumer education. We must grasp the need for our eating habits to be the fruit of a responsible approach, which interprets the food system in its global dimension. To do this it is necessary above all to revitalise local areas and be aware of the importance of acting locally to shorten the distance that food travels. In other words, it is necessary – we repeat – to become “co-producers”: not mere passive consumers or passive subjects, who purchase what they eat absent-mindedly – sometimes ignorantly – but attentive and responsible citizens, prepared to pay the right price for the pleasure of food and health, concerned about

health protection not only as a right but also as an intellectual and collective duty. It is a question of ethicality, closely interconnected with the dimension of pleasure. To choose good food is to make a commitment to save the planet, for food and taste are the vital node on which depend the health of peoples, the planet and social relations; in short, the lives of us all.

Conclusion

It is necessary to come to terms with a fact that can be measured globally: namely that the development, in the classic sense, of a country, and thus of the countries of the Mediterranean region, is not matched by equivalent growth in critical sensibility towards food purchases, knowledge of raw materials and the environmental and social impact of food production.

The first of the many threats to a gastronomic system would thus appear to be “modernity”, which influences the ways in which meal choices are made insofar as it modifies individual and collective time management. Much of the blame can be placed not only on the production and distribution system, but also on the method of food procurement. All this tends to change any gastronomic identity radically. In this context, what is needed is greater, more resolute support for small-scale agriculture as a virtuous component of the regional fabric with reduced environmental impact and as a source not only of education but also of income for families.

The quality of food depends not only on ingredients or organoleptic properties, but also on the methods used to produce it: all of these elements must meet principles linked to history, culture and land protection. Gastronomic identity is in fact based on subjective elements such as climate, soil and land, as well as a whole set of questions associated with the culture, society and history of a community, not to mention, of course, individual skills. Favoured by a temperate climate and with mainly peasant or artisan roots, the societies of the Mediterranean region have conserved a gastronomic identity that is part of a complex and pluralist way of life. To exploit these complexities it is imperative to show the utmost respect for indigenous customs.

If a diet falls under cultural and economic pressure, even one that is firmly rooted in a culture like the Mediterranean culture is liable to lose its originality and substance and the standard of quality of its food. If quality standards decline, the diet per se is liable to lose its significance: thus increasingly refined cereals that increasingly resemble simple sugars, flavourless, odourless vegetables, meat from animals raised with growth promoters and in conditions of stress, intensively farmed fish, deodorised olive oils, cakes containing artificial flavourings – the list could go on and on – turn the main items of the Mediterranean Diet into empty labels. In view of the devastating effects, countermeasures must be taken to protect quality food, good production practices, the land, its biodiversity and, above all, the protagonists of the system, the peasants and farmers whose aim it is to develop “good” agriculture. Any form of negative and devious change that is likely to corrupt the authenticity of a heritage of quality must be fought. This concept requires that we acknowledge the true value of responsible food, which involves no waste and is respectful of places of origin, the history of peoples, and age-old traditions.

In any era, consumers meet their requirements by confirming habits or creating new ones alongside existing ones, contributing in varying degrees to their own personal lifestyles and/or to the behaviour of the community of which they are members. Today consumers can be divided into “rational actors”, active planners who, at the moment of purchase, tend to maximise utility, and “passive subjects” (Sassoli, 2009), who are easy to manipulate and are exploited by the market, and whom Barber defines as “consumed” (Barber, 2007). Whether rational or passive, consumers can be influenced by advertising, which steers consumption by persuasion, and by the techniques used to present and explain individual commodities.

The time has come to reject the word and the idea of the “consumer”: power of choice makes the role of the buyer decisive only if he or she has access to all of the information that permits a well-reasoned choice, and enables him or her to influence market trends and evolution. The availability and accessibility of information change simple consumers into “citizen-consumers”, who work towards the creation of an ethical market (Masini and Scaffidi, 2008) and evolve into a “co-producer”. Underpinning all this is communication about the tools that can re-establish a thrifty and balanced relationship between man, environment and food.

This may seem an extremely exacting task. But the rediscovery of the pleasure that food gives is the precondition for recognising its true value. Pleasure is thus not a variable of quality (or cost) but an indissociable element of food, a physiological and natural feature of our relationship with what we eat. The experience of this pleasure is attained to the full in the sharing thereof. By which we mean not only conviviality but also awareness of the virtuous journey a food product has made before arriving on our plates.

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5 PART FIVE

FOOD
producers and
distributors



PRODUCERS' ORGANISATIONS AND FOOD SUPPLY

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The problem of food in the Mediterranean, more specifically the question of the erosion of its celebrated diet, is closely linked to the problems of the rural world. This reality legitimately raises the issue of the flagrant imbalances between towns and their hinterland, and serves to recall the lack of integration of Mediterranean agriculture which struggles to feed the towns with local products. How can the challenge of rural enclaves be reconciled with the need to revive Mediterranean agricultural production¹. What social forces can be trusted to develop agriculture in the region while preserving its local heritage?

The question of the migration of the Mediterranean consumption model stems from the poorly structured rural world and the role of each of the economic actors in marketing quality food products. At a time when international trade is intensifying, forcing Mediterranean agriculture to compete on very unequal terms, the problem of matching supply and demand is surely a topical one, especially the capacity of agricultural producers to play a strategic role in the food chain and meet quantitative and qualitative food security needs. This chapter puts the question of organised farming back at the heart of the debate on the re-balancing of power within agri-food chains in the Mediterranean. This notion of rural governance is crucial to illustrate the upstream role of agriculture in the Mediterranean. It directs the debate towards the problem of a development in which agricultural organisations are seen as major drivers of change and innovation.

The thrust of this chapter is based on four main sections, which combine to analyse the role of agricultural organisations in improving the lot of Mediterranean products: the first presents the renewal of interest in farming organised on a global scale; the second sheds light on the concept of chain governance and analyses possible ways in which organised Mediterranean producers can contribute to value chains; the concept of local origin is explored in the third part as a tool for structuring Mediterranean chains through agricultural organisations; the last part analyses the role of farmers' organisations in innovation and change.

¹ - Several forward-looking works (CIHEAM, IFPRI, FAO, CIRAD and INRA) suggest that the Mediterranean, especially the southern half, will have one of the greatest food deficits due to the pressures exerted on productive resources and strong demand generated by sustained demographic growth.

The need for strong and structured farmer's organisations

In the Mediterranean, as elsewhere in the world, there is a convergence of opinion on the need to stimulate sustainable agricultural supply to respond to the explosion in demand, new forms of consumption and the goals of food security. The cheap supply models of the past, inspired by globalisation, which gave preference to foreign markets in an attempt to feed a growing population, rapidly showed their limitations.

The question, therefore, is to create environmental conditions which allow the farming communities around the Mediterranean to do their job with the maximum technical and economic efficiency. However, the fact that government interventions have proved unable to create a propitious framework, does not mean that other private operators in the chain can be counted on exclusively to provide farmers with all the services, of sufficient quality and at affordable cost, that they need to play their role. Without any way wishing to eclipse the need to introduce agricultural and food policies which stimulate all the economic actors in the Mediterranean supply chains, the producers' lack of representation in current policies increasingly raises the question of their place and bargaining power in the markets.

In the light of the pressures on the region, and bearing in mind the natural dispersion of farmers and their individual weakness, the question of farmers' organisations is now quite legitimate. When favourable conditions are available, producers' organisations can generate business models with a high level of economic efficiency. In addition to mere commercial activity, these organisations stand at the core of the development process (World Bank, 2007) with missions closely associated, through collective action, with poverty reduction, strengthening food security, sustainable management of natural resources, agricultural growth and competitiveness (Bosc *et al.*, 2002). The last few years have witnessed an intensification of the participation of farmers' organisations in policy negotiations at international level and the creation of many forums for dialogue (such as the IFAD Farmers' Forum) where farmers are invited to have their say. The World Bank considered producers' organisations as emergent collective actors and in 2008, forced by the food crisis, embarked on a round of consultations, in particular with the various regional committees of the International Federation of Agricultural Producers including the Mediterranean Committee², in order to identify support mechanisms which would meet the needs of regional agriculture in support of development.

Expressing their views in the framework of these regional consultations, agricultural producers from both shores of the Mediterranean saw farmers' organisations as key actors in the drawing up of agricultural policies and lobbying of governments in order to achieve, as a priority, the development objectives of the supply chains for regional products and improved market access (IFAP, 2008).

2 - Until 2010, this Committee was composed of 17 farmers' organisations from 14 countries in the Mediterranean region.

Producers, farmers' organisations and governance of chains

One of the major challenges for the development of regional agriculture is the structure of agri-food chains and improvement of coordination between the various agents to achieve a fairer distribution of value.

The agricultural producers in Mediterranean chains

The latest food crises and the dramatic rise in agricultural prices have highlighted the major dysfunctions related to market access, an idea placed by many analysts at the heart of the current problems of food security (Bricas and Daviron, 2008 ; Karanja *et al.*, 2005).

The food riots which broke out in many countries in the South were revealing of the great vulnerability of the poorly organised upstream actors, especially small producers, who drew no benefit from the higher agricultural prices, due to their remoteness from urban markets and their weak bargaining power in dealings with governments, industries or the modern retail companies which corner the biggest margins for themselves.

In a period of crisis and loss of purchasing power, regional products are sometimes seen by consumers as unattractive in terms of price. Consumers turn to imported products available through the major distributors, because they are much more competitive³, which heavily penalises local producers. Thus, olive oil, the Mediterranean's flagship product, despite being extracted in the Maghreb countries, is only consumed in small amounts in local markets (Padilla and Abis, 2007). It is sold in the form of blends of oils and often re-sold in its country of origin at prices which profit more the intermediate operators, such as wholesalers or major distributors. In Morocco, for example, at 2kg per person per year, consumption of local olive oil is far from the average for the Mediterranean basin (6kg per person per year in Tunisia, 12 in Spain, 14 in Italy and 24 in Greece)⁴, despite the improved production over the last five years⁵. While Morocco increased its exports of olive oil six-fold (the United States being its top customer), the local table oil industry continued to import 400,000 tonnes of vegetable oils each year.

The dominant position of intermediaries and modern distribution in the oil chain is also evident on the northern shore of the Mediterranean. The case of Spain, the top producer and exporter in the world, is one example (Olive Oil Times, 2011). With an insufficiently organised and concentrated supply, Spanish farmers see their margins crumbling to the benefit of the larger processing and refining companies and powerful distributors whom they accuse of a monopoly of "price leadership strategies" (Sanz Cañada, 2009).

These disparities in the relative strengths along the chains are amplified in times of crisis as a result of government policies. In the strategic cereals chain, for example, at a time

3 - On a product such as olive oil, major modern food retailers in Europe mark up 30% to 40%, while in Morocco, the margin is less than 18% (Jeune Afrique, 19 August 2010).

4 - *L'Économiste*, n°3481 of 8 March 2011.

5 - 150,000 tonnes compared to 65,000 tonnes on average over the last five years (*La Vie Éco*, 2011).

when global prices have been soaring to unprecedented levels since the beginning of 2011, in part due to the social troubles affecting the countries of the southern Mediterranean which are known to be great consumers, at the beginning of May 2011, the Algerian Interprofessional Cereals Office announced bulk imports of 50,000 tonnes of barley, thereby leaving the disenchanted Algerian farmers with national production in surplus⁶. Despite the tax on imported durum wheat, agri-food manufacturers in Algeria still prefer to source their supplies from international markets and cock a snook at national stocks of durum wheat. Encouraged by the suspension of the tax in question for an indefinite period⁷, they point the finger at the quality of the locally produced wheat, as unsuited to the needs of industry. A sign of tension around a major staple product, they also talk about possible shortages to justify their foreign sourcing. Was it not to recognise the role of producers in managing local food chains that, in 2010, the Arab Maghreb Union put in place a programme to strengthen farmers' professional organisations in the framework of its Maghrebian strategy to deal with the rise in price of foodstuffs in the period 2011-2020⁸?

All these examples show that the difficulty faced by producers in accessing markets is reflected in a decline in their incomes and incentives to produce. The unequal distribution of the value created by the Mediterranean food chains raises the question of the disparities in the strengths of the various actors in the chain and, in particular, the inability of the dispersed agricultural upstream to impose its own rules of the game by adapting to changes in national and international competition.

Farmers' organisations: the way to greater participation in the value chains

Given the enthusiasm for an organised farming community, it would be interesting to understand how farmers' organisations can be involved, in the Mediterranean, in solving problems, especially shortcomings in the markets. If producers individually suffer the consequences of globalisation and regional upheavals, how can, or could, their organisations play the role of purveyor of a structured supply of quality Mediterranean products?

In the current debate about poverty reduction, it is increasingly accepted that the rise in rural poverty is chiefly due to the fact that economic growth does not benefit local value chains or encourage the establishment of better economic institutions (Peppelenbos and Verkuijl, 2007). Yet farmers' organisations play a crucial role in economic growth and coordination in rural areas. They are the key actors in the integration of small producers in the food chains. By collective action, they can reduce transaction costs by coordinating operations of small producers, and support them in identifying the needs of the market and supplying it with the required quantities and quality. While collective action is a way of alleviating the shortcomings of individual agents (Bosc *et al.*, 2002), the meagre recovery of value upstream demonstrates the scale of the asymmetries between

6 - *El Watan*, 2 May 2011.

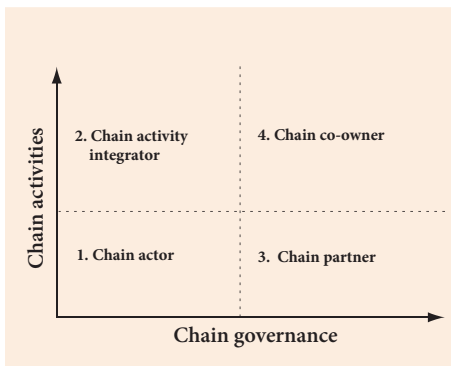
7 - *El Watan*, 10 May 2011.

8 - This strategy consists of six programmes concerning: "development of cereals production", management of variations in food prices in global cereals markets", development of Maghrebian agricultural trade", sustainable management of natural resources", and "strengthening farmers' professional organisations".

poorly organised agricultural producers, with limited means of action, and the commercial giants (often international groups) which are increasingly expanding the scope of competition. The asymmetry which handicaps the integration of agricultural producers and their organisations can be analysed in two main dimensions which, according to Peppelenbos and Verkuil (2007), can be represented in a matrix (Figure 1):

- › the type of activities in which producers are involved (production, transformation, marketing) which determine their degree of vertical integration;
- › the governance of the chain which determines the conditions in which activities may be carried on and which empower producers to influence decisions along the value chain.

Figure 1 - Four forms of participation by producers in value chains



Source: Peppelenbos and Verkuil (2007).

and exerts an influence on part of the chain. However, without choosing to integrate new activities, progress in terms of governance could be facilitated by investment in the organisation of producers (cooperatives or suchlike) which would give them greater bargaining power and allow them to contribute actively to the design and steering of the production process, as well as the different forms of cooperation in the value chain (e.g. negotiation of agreements with commercial operators, partnerships with research institutions, definition of product quality standards, targeting of demand, management of innovation...). These new powers acquired by collective action and organisation would move producers from the status of mere “actors” to real “partners”.

While in many national situations in the Mediterranean the weakness of ways of action means that producers struggle to organise and impose their rules of the game on the chains to which they belong, many success stories have emerged in the South in recent years which highlight the predominant role of organisations in the economic and commercial integration of producers. According to Bosc *et al.* (2002), when they are structured around a chain or remunerative economic activity, organisations can often strengthen their cohesion due to the fact that their members have common material interests.

A combination of progress in a vertical direction (by integrating new activities) and horizontally (mastery of management of the chain) would encourage the shift of farmers to the “chain co-owner” quadrant of the value chain. Then, from primary production, a producer may go on to transformation of fruit and vegetables which would place him in the “chain activity integrator” quadrant. By organising together with other operators to sell his primary production to transforming industries, the producer can specialise in production, enhance his status and become a “chain partner”. He secures his market through sales contracts

The case of Tunisian wine cooperatives is a concrete example of the dynamism of cooperative organisations in Tunisia, both in terms of their potential for production of quality wines and their entry into highly competitive markets. Undertaking all activities from production to marketing including export markets, the cooperative sector, according to the Director General of the Central Union of Wine Cooperatives (UCCV), “contributes actively to the education of its member wine-producers in the conversion and modernisation of vineyards, supply of vines and phytosanitary products, improvement of quality and yields, management of distribution and sale of the output of these cooperatives both in Tunisia and export markets, agricultural guidance and technical control of businesses attached to the cooperatives and, especially, up-front financing of harvests and vineyards (warrantage)”. As well as providing quality services to members through upstream activities, the economic success of this model stems from the good coordination within the chain between wine-producers and dealers since the UCCV manages the supply of wines, programmed in terms of quantity, quality and distribution. This efficient coordination benefits local consumers who respond positively to a quality product and buy 81.2% of their consumption in the cooperative sector (D’khili and Mouley, 2007).

On a more modest scale, the experience of some Lebanese cooperatives is also remarkable in a turbulent environment marked by political conflict. The take-off of biological agriculture thanks to the “Biocoop Lubnan” cooperative and the spectacular success of vine-growing in the Bekaa plain through substitution of illegal crops illustrates the originality of the path taken by “Coteaux d’Héliopolis”.

From cannabis to the vine: the path to success taken by a Lebanese agricultural cooperative

The Bekaa plain, where the Coteaux d’Héliopolis cooperative is established, was long regarded as a poor agricultural region overlooked by the government against a background of the strong development of the tertiary sector in the country

It is a peripheral region of Lebanon whose name is still associated with illegal crops, with widespread production of cannabis in the northern part since the 1920s⁹. In the absence of the political will to support an agricultural sector heavily strained by long years of conflict, the end of the civil war was accompanied by a revival of agro-industrial activity initiated by private investment of Lebanese capital from abroad and the strengthening of a liberal trade policy. But this economic renaissance did not benefit everyone, since it accentuated the distortion between a handful of large companies well entrenched in international markets and a mass of family farmers mired in financial problems and excluded from the system of bank loans (Bennafla, 2006). Victims of increased competition due to the application of the Arab Free Trade Area (2005) on the one hand, and campaigns to root up cannabis plants, on the other, without offering any viable substitute crop, the small farmers of the region found themselves shut out of markets, trying to take part in international cooperation projects through local agricultural cooperatives to take advantage of fragmented and poorly coordinated aid.

In 1999, a doctor from the village of Ainata – Deir El Ahmar formed the Coteaux d’Héliopolis cooperative with the aid of the French Department of the Oise and support from the Zahlé Chamber of Agriculture. The objective was to substitute vines for illegal crops in 11 villages situated at an altitude of between 1100 and 1600m, improve the

9 - *L’Orient le jour* (21 April 2011).

incomes of the region's vine-growers and their families, limit the mass exodus to the towns and prevent desertification by increasing the area under cultivation of wine grapes. It should be noted that at the end of the civil war, illegal crops covered some 80,000 hectares and yielded 80 to 100 million dollars per year in the Baalbek-Hermel region (Bennafla, 2006).

With land perfectly suited to vine-growing, the membership of the cooperative has grown constantly. This has been encouraged by the adoption of a strict quality policy including the supply of certified plants and a choice of noble varieties, upstream technical support, use of contractual agriculture which guarantees the sale of the members total production and, finally, a system of remuneration of grapes based on quality, which is an incentive to vine-growers to raise the quality of their products¹⁰.

Between 2000 and 2005, 75 hectares of vines were planted and since 2003, the grapes have been bought by the wine company *Wardy* at above market price (Bennafla, 2006). The cooperative had 243 members at the end of 2010, against 42 in 2003, and the catchment area is quite large. The challenge is to maintain the balance which has encouraged the economic and social success of the project. The operation seems to be working if you look at the list of growers who want to obtain plants, the discussions engaged by the cooperative with the European Union and the renewal in 2003 of its contracts with the *Conseil Général* of the Oise and the *Wardy* wine company.

In Palestinian Territories, one of the great achievements of the PFU (*Palestinian Farmers' Union*) was the establishment of a programme to strengthen the capacity of 20 oil cooperatives. The programme led to the development of the chain and better promotion of quality products in the local and European market (biological and fair trade certification) at a time when the obstacles to the movement of Palestinian goods throughout the territory led to a saturation of stocks and a collapse in prices.

In the North, producers' organisations, especially in the European Union countries, are a driving force in the structuring of regional chains. In sectors such as fresh fruit and vegetables, they have contributed to the articulation of the sector, concentration of supply, and improvement of production techniques and marketing methods. However, according to the European Commission, the need to strengthen producers' organisations is even more pressing, bearing in mind the process of concentration currently experienced in the distribution sector in Europe.

The "terroir" as a tool for the structuring of chains

In the face of the increasingly acute competition resulting from the liberalisation of markets, the small Mediterranean producers could not match the volumes needed to conquer domestic or foreign markets, or cope with a global supply which now directly impacts on their domestic economies. Added to this strong foreign competition are the many constraints weighing down on the productive capacity of farms: pressure on water resources and land leading to major disparities in agricultural yields. The Mediterranean topography in part explains the limits of the agricultural potential characterised by considerable fragmentation of holdings and major disparities. However,

¹⁰ - Augier, Patricia and Blanc, Pierre, 4th Inter-Lebanese Forum on Agriculture", February 2009.

the structural water deficit accentuated by the phenomenon of climate change, urban sprawl and demographic growth are all factors which demand subtle trade-offs in the use of land and water. The loss of quality agricultural land through urbanisation and infrastructure is estimated at over 1.5 million hectares¹¹ in the South and East Mediterranean where, moreover, 80% of the arid lands are being subjected to a process of desertification¹². In the North, the agricultural population fell by 64%¹³ in 30 years, leading to the abandonment of many cultivable areas. According to FAO, a loss of 15 to 30% of arable land could be caused by climate change, depending on the level of temperature rises, while the region has reached the limit of its potential. These changes will inevitably have their consequences for the region's productive capacity and a decline in the Mediterranean food system.

In a strategy of revitalising the hinterland, exploiting the quality of products and local producing areas (*terroirs*), and adjustment to a highly competitive environment, producers must adopt product differentiation strategies based on quality. These strategies rely on comparative advantages which are not susceptible to imitation, linked to a territorial root and local know-how which can be exploited. The *terroir* card can be played by actors who want to profit from these "resources" or "skills" (Wernerfelt, 1984) and invest them as barriers to entry of other less well-endowed operators, which would impact on the profit margin and governance in the chain.

Many studies have been conducted in recent years analysing the potential of the Mediterranean for highly typical products, which embody a sense of place or *terroir* and health. The majority of these studies envisage focusing on niche crops which constitute a portfolio of regional products which are sufficiently relevant and competitive to revitalise the local agri-food chains and generate sustainable local development (Rastoin, 2009). This approach involves a system of upstream governance, on condition that the supply model allows forms of coordination suited equally to the specific characteristics of the products, the demands of the market and the constraints on the sector. This form of specialisation in high added value products involves, for rural producers, considerable challenges of organisation, innovation and building of partnerships to produce a structured supply with significant volumes and quality which justify the *terroir* status. In the Mediterranean, the pooling of resources and efforts, in practice through the producers' organisation, would be a way of providing small farmers with the means to offer a competitive product by helping them with quality labelling and certification procedures which are often too cumbersome and costly. These measures are aimed at protecting local products which are increasingly remote from their region of origin at a time when the Mediterranean region finds more enthusiasts in the Nordic countries than in the Basin itself (Padilla, 2009; Alexandros, 2006). Behind the collective qualification measures, moreover, lies a serious threat, the usurpation of the celebrity of the name (Boutonnet *et al.*, 2009) which constitutes a significant loss to all operators in the chain. Collective action and the pooling of resources can alleviate supply shortages due to the size of businesses, the lack of productivity or pressures on natural resources, especially water. For producers in the zone, the economic impact is significant since the

11 - Blue Plan (<http://www.planbleu.org/themes/espaceRural.html>).

12 - CIHEAM (ed.), *Atlas Méditerranée. Méditerranéenne Agriculture, Food, Fisheries and Rural Areas*, Presses de Sciences Po-CIHEAM, 2010.

13 - FAO figures, according to FAOSTAT.

promotion of products using official quality labels (Geographical Indication or Appellation of Origin) procures higher prices and incomes at the agricultural stage (Ilbert, 2009), while strengthening their bargaining power in dealings with their customers. It is a matter of protecting an income of place and creating value for the smallest (Fort and Rastoin, 2009) who are unable to engage in such measures except through collective action.

Today, compared with the other countries of the European Union, the North Mediterranean countries occupy an important place in the attribution of geographical indications. Stemming from or supported by farmers' organisations, a growing number of initiatives to promote local products are proving successful.

An original Italian experience which is worth mentioning is the “*Conosci il tuo pasto*” initiative to promote typical products and products of origin in restaurant chains¹⁴. The *Confederazione Italiana Agricoltori* (CIA) established collaboration with the Mediterranean Institute of Certification (IMC) to certify restaurants which obtain their supplies from local farmers (in AO or GI or biological products) with the aid of the “know your meal” label. This label guarantees sourcing from a certain number of certified local products through the distribution circuit in question, together with a good product management and food safety system. With a view to promoting the Mediterranean cultural heritage, the initiative has been extended to Lebanon, with plans to include other countries of the Maghreb. This form of organisation between chain actors, encouraged by a grouping of producers, currently allows a ten per cent reduction in transaction costs in the chains (CIA, 2008), which is reflected in prices to the customer, while favouring improvements in the quality of agricultural production and promoting traditional and local specialities.

While the countries of the northern Mediterranean seem more dynamic in adopting “*terroir*” strategies for their products, and initiatives in the South are fewer, the potential for exploiting them is promising. In taking the certification route, individual producers find that the institutional procedures are a constraint in addition to the costs involved in upgrading their farms. Producers' organisations play a central and legitimate role here in implementing programmes to strengthen their organisational, economic and technical capacities to the benefit of their members. Their major trump card is the power to drive quality upstream (through a close relationship with their members) and reconcile product quality with marketable volumes in suitable distribution chains.

Producers' organisations: key actors in innovation and vectors of change

The examples cited above concerning initiatives taken by producers' organisations are revealing of the role they can play as actors of change and innovation. This idea, the notion of innovation, is now at the core of today's development debates (World Bank, 2007). Historically, producers played a central role in innovation thanks to their ability to find and adopt technical or economic solutions to their problems. To assume this

14 - <http://www.conosciiltuopasto.it/>

role, they need to create not only a propitious environment, but also an adequate level of organisation, a crucial factor in internal dialogue and negotiations with farming and rural communities, in order to optimise the results of innovation for society. Today, due to the pressures on Mediterranean agriculture and its duality, rural producers are forced to innovate constantly, which means that they have to respond to negative incentives such as, for example, constraints on natural resources, the food imbalances which affect their societies, difficulty in competing with food imports or their impotence in the political sphere.

Despite the progress in neighbouring countries, especially in Europe, and despite the various fields of research which concern them (adaptation of agriculture to climate change, sustainable water management, quality, traceability and safety of food, etc.), small farmers and the rural world, especially in the southern Mediterranean, are often excluded from the main currents of innovation. Conversely, the rural social classes which have easier access to resources are more likely to be encouraged to innovate in response to attractive factors which allow them to take advantage of the new opportunities offered by the change in the environment, which, for example, offers new outlets for economically viable crops, strengthening of the links between primary production, industry and services, new biotechnologies, etc. (Berdegué, 2005).

However innovation is defined, a consensus is now emerging on the central role played by agricultural producers and their organisations in this process, thus contributing to the goal of modernising agriculture. Farmers' organisations are part of the social capital which is the vector of this change, a change not confined to the technical or economic sphere. While the agri-food chains are regarded as the prime places of potential change, farmers' organisations, like other forms of organisation, can contribute important innovations at different levels (Gouët *et al.*, 2009). At local level, producers' organisations can, for example, provide innovative solutions in collective management of production or exploitation of local resources (through local products). At international level, they can create a space propitious to innovation by negotiating new trade agreements with governments or fair contracts with industry. Meanwhile, at intermediate level, they can play a dynamic role in the implementation of certification systems or provision of services, either through lobbying or the creation of partnerships or alliances.

The conclusions drawn from the experience of a number of Mediterranean organisations between 2007 and early 2010 show that, setting aside the lack of financial resources, the chief obstacle in the way of the possibilities of innovation by farmers' organisations in the region (especially in the countries of the south and east Mediterranean) is the problem of access to certain essential services, namely training, extension services and research. As suggested by Elloumi (1994), the problem of real participation of producers in the management of agricultural development is still presented in terms of structures, means and prerogatives. More generally, one can legitimately question the place of the whole system of creation and dissemination of innovation, in which the North has taken the lead by involving the agricultural upstream, but which is still mostly non-existent in the southern Mediterranean. In this regard, various forms of cooperation need to be mobilised, combining expertise and financing: through inter-enterprise partnerships (North-South) or public-private partnerships, along the lines of a few initiatives which

have seen the light of day in the South. In Morocco, in the framework of the “Green Morocco Plan”, innovative and differentiated financing programmes plans have been put in place by the banks depending on the status of agricultural businesses (family farms or food exporters), which could eventually benefit farmers’ organisations which want to upgrade their skills in the framework of modernisation programmes..

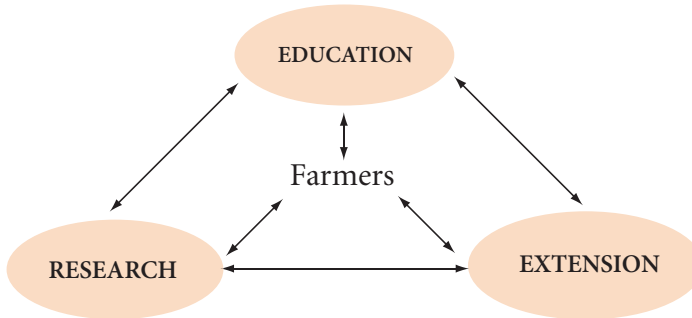
To alleviate these shortcomings, and relying on the potential of agricultural organisations for creating and disseminating innovation, specific “farmer-to-farmer” support and advice schemes have been put in place in the North in recent years, in the framework of international development cooperation projects. European agri-agencies have been leaders in this field¹⁵, mobilising experts from farmers’ organisations (producers or consultants) to provide solutions to their colleagues in similar organisations often located in developing countries. The principle is based on the fact that producers’ organisations are structured at different levels (layered structure), which is a considerable advantage in disseminating innovation (Blokland and Gouët, 2007a, Gouët *et al.*, 2009). Contact between peers (peer education) thus allows sharing of information and know-how in the sphere of technologies, markets or other types of experience. Thus, the “weaker” organisations benefit from the experience of the “stronger” in a special form of social apprenticeship. Is this not an interesting framework for sharing, to inspire the farmers of the South Mediterranean, which is characterised by a considerable asymmetry between the large modern farms which are well established in the markets and the precarious small farmers? According to Blokland and Gouët (2007b), producers’ organisations represent an effective means of communication and information due to their social network and the many links woven between the members involved in associations, delegations, members, etc. at different levels. The dissemination of inventions in an environment not led by the market could therefore benefit from the existence of farmers’ organisations in the form of private enterprises which provide farmers at the “bottom of the pyramid (Box below) with innovative technologies which meet their immediate needs (Pralhad, 2006).

This form of cooperation for sharing “layman’s” agricultural knowledge has proved more effective than other forms of support such as extension, often criticised for its top-down and one-way approach. Rural populations, especially producers and their organisations, are now placed at the centre of the knowledge triangle (Figure 2) which defines the “Agricultural Knowledge and Information Systems for Rural Development” (FAO and World Bank, 2000; FAO, 2005). By making them active partners in these systems (rather than mere beneficiaries), the approach is participatory in that it gives producers a driving role in the process of production and adoption of inventions.

While traditional systems marry researchers, popularisers, educators and farmers, numerous studies have highlighted the value of opening the field to other actors, such as consumers, decision makers, industry or other stakeholders, to maximise the impact of innovations and achieve the optimal results (FAO, 2005). Could this not be a way of responding to the multiple agricultural and food challenges of the Mediterranean which

15 - The Dutch agri-agency Agritertra has institutionalised this form of international “farmer-to-farmer” collaboration through AgriPool, a network of experts which farmers’ organisations can call on for professional advice in a variety of fields: internal organisation, provision of services to members, training of farm leaders, lobbying, activities specific to women or young farmers, technical services, etc.

Figure 2 - Agricultural Knowledge and Information Systems for Rural Development



Source: FAO.

could be led by an organised farming community? With proper links at the grass roots and a power to engage a large number of actors at different levels, farmers' organisations could be a channel for nutritional communication to consumers at the bottom of the pyramid, thus making an effective contribution to nutritional and health policies which promote the Mediterranean Diet. They could also direct demand towards a more suitable supply of highly typical products or, alternatively, adapt their output to new consumer expectations in terms of quality, traceability or nutritional, health, taste and environmental attributes (Box below). Producers could also, through representative organisations, influence the directions of specialised institutions in the preparatory phases of recommendations on diet and nutrition, and the associated national regulations, in order to promote their local and national agricultural products.

Unfortunately, at a time when this form of farmer-to-farmer cooperation is taking off in many geographical zones, supported by European agri-agencies (Agriterra, TRIAS, FERT and AFDI), the Mediterranean is a long way behind with very few organisations involved in this kind of sharing. Thus, the Mediterranean benefited from only a few rare collaborations between 2007 and 2010 in favour of the southern shore through the "Farmers Fighting Poverty" programme, which has financed a great many development cooperation actions in several continents, while sub-Saharan Africa was the prime destination of such exchanges¹⁶. This inertia shows the need for the political will to stimulate cooperation for the benefit of this zone. At the present time, despite repeated warnings by the scientific community about the challenges for Mediterranean agriculture and the urgency of mobilisation, it has to said that the contextual conditions to encourage action for regional development have not yet been established.

16 - Agriterra, *Farmers Fighting Poverty – The strength of being organised*, Report of Activities 2007-2010, Netherlands, 2011.

Agriculture with a nutritional vocation

Behind the concept of “layered structure”, characteristic of producers’ organisations, lie the economic and social challenges of the “Bottom of the Pyramid”, from the title of the thesis developed by the Indian economist C.K. Prahalad. The Bottom of the Pyramid is made up of the four billion people who live on less than 5 dollars a day, i.e. an enormous potential market for large companies (such as Nestlé or Unilever) which want to disseminate their innovations among the poor in the emerging countries. Observing Indian rural populations and their strategies for disseminating inventions, Prahalad proposes in his works *“Four Million New Consumers”*, *“The Fortune at the Bottom of the Pyramid”* and *“Eradicating Poverty through Profits”* that agricultural populations can be both successful entrepreneurs and discerning consumers participating in the transmission of knowledge and technologies. Drawing inspiration from this model of dissemination adopted by the major multinationals, farmers’ organisations are powerful mechanisms for the transmission of innovations thanks, in particular, to the different levels of representation which characterise them (local, national regional and/or international) and the extended economic and social networks.

By seeking to improve the nutritional quality of agricultural products, farmers’ organisations contribute, in the framework of a nutritional and health policy, to the emergence and spread of an agriculture whose objective is to produce foods which are improved upstream and which contain a nutritional benefit for the consumer. Through their links with the different actors (governments, civil society organisations, enterprises, consumers), provided that they are incorporated in organised chains, they can contribute to changes which can adapt production systems to multi-functional agricultures that meet social expectations concerning nutrition/health, taste, traceability or environmental impact. If Prahalad’s approach means that private enterprise must invest in appropriate products and services, the idea is to involve communities more in the production and marketing of these products and services so that they are suited to their needs. Along the same lines, agricultural production through well-rooted farmers’ organisations is capable of meeting societal expectations in terms of food by the adoption and dissemination upstream of improved farming practices (e.g. model livestock farming practices which improve the lipid profile of meat, modification of cultivation methods for biological products, products which are richer in fibre or light in sugar, etc.).

The knowledge of consumers’ needs, including the ideal profile of the food ration, identification of deficits induced by modern dietary models and the observation of the consequences of these deficits, have led the agri-food chains to propose solutions to these imbalances by various means. The production of “health foods” or “nutraceuticals” is one of the ways adopted by the agri-food industry by linking more closely with pharmaceuticals. However, these practices are implemented using a raw material which is often delocalised, so that the added value escapes the local producer. The promotion of an agriculture which promotes the mastery of the nutritional quality of foods at the production stage can be delivered by the organised upstream and this has the merit of encouraging more balanced relationships in the chains concerned.

What if regional development also took place through agricultural organisations?

Whether they play out their roles in the economic sphere (organisation of production) or political sphere (representation and defence of interests), it is through these two spheres that producers' organisations forge their place in the food chain. And since they also perform other functions by operating in the social sphere (education, health or culture), their impact on development is undeniable. If "*The real wealth of nations*" relies on human development, to cite the title of the UNDP Human Development Report 2010, it is certain that one of the roads to this goal runs through the organisation of the rural world and the farmers. For economic development which relies solely on growth does not guarantee the ability to live long, healthy lives, influence the decisions of society and live in a society which respects and accords the same importance to each individual. The legitimacy and the contribution of producers' organisations is thus justified by their many spheres of action, whether commercial or associative. Through the relationship between the level of organisation and political influence, or between cooperation and economic development, agricultural organisations are effective instruments for resolving the social dilemmas with which rural societies are faced, and this is a necessary condition of development (Gouët *et al.*, 2009).

This reality can be measured as much in the involvement in the management of natural resources and land (dilemma of public assets) as in the interaction with economic agents and the food chain (dilemma of profit in the agricultural chains), or, again, in cooperation to address the disparities resulting from the urban bias (Lipton, 1997), to cite but a few examples. It is thus essential for producers to strengthen their political influence through representative organisations as a way of stimulating economic and human development, acting both as a driving force and the beneficiaries of this development.

For, despite the dynamic of economic liberalisation and the disengagement of the State from the productive sector, the challenge of democratisation of farmers' organisations is still an issue in many places in the Mediterranean where for years guarantees of freedom and forums of expression to stimulate independent and entrepreneurial management of these organisations have been lacking. This raises the question of the autocratic powers in place, and also the inertia of the organisations themselves, which have become instruments of the State for lack of the power to mobilise reformist pressure from the grass roots. The Arab uprisings of 2011, which originally arose in the rural areas of the Mediterranean, may be a sign of hope for those who saw in the rural agricultural enclaves the seeds of the movement in the remote agricultural areas. Will the agricultural world take inspiration from this context to reform its institutions?

Progress towards democratisation would, for all the countries of the region, mean greater openness without that being limited to the commercial and economic level. The challenges of globalisation expose the Mediterranean to the danger of losing its chief advantages on which its originality is based (agriculture, environment and culture). This calls for enhanced dialogue and extended regional cooperation. Whether this necessary cooperation is established as part of a Euro-Mediterranean partnership or elsewhere in the form of other alliances, it would be difficult to envisage regional

development without effective governance and dynamic participation of the various actors. In the case of the region's food problem, strengthening the capacities of farmers' organisations must be one of the pillars of this cooperation if it is intended to make progress in the development of Mediterranean agricultural markets, revitalise the land and rural world, preserve the local heritage or protect the Mediterranean Diet.

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MEDITERRANEAN FOOD PRODUCTS: RESEARCH AND DEVELOPMENT

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The term “Mediterranean Diet” refers to the eating patterns typical of specific regions of the Mediterranean in the early 1960s. It is characterised by an abundance of plant foods such as vegetables, fresh fruits, grains, pasta, bread, pulses, nuts and seeds, and a high level of monounsaturated fatty acids. Olive oil is the principal source of fat and moderate amounts of fish, poultry, dairy products and eggs are consumed along with small amounts of red meat and wine.

There has been a growing interest over the past few decades in the role of the Mediterranean Diet in preventing the development of certain diseases, especially cardiovascular disease and certain forms of cancer. Although a traditional diet of the Mediterranean region, it has been garnering interest throughout the world and its reputation is now global. As a result, more and more people are interested in the health benefits it confers.

The first findings came from epidemiological studies, but today there are many biochemical and other laboratory studies that confirm these epidemiology findings. The great progress made in the areas of nutrition, bioscience, biochemistry and chemistry of natural products during the last two or three decades has demonstrated that some commonly encountered food constituents have hitherto unknown health/promoting and disease/preventive properties. Food is not just a culinary item but may also be a health aid.

Mediterranean food products are now being re-evaluated for the beneficial health effects they offer, effects which go beyond basic nutritional needs. Major developments that aim to improve their quality and preservation therefore focus on improving their composition, mainly on the basis of better retention of bioactive ingredients. This chapter discusses research and innovative food science in the light of increased awareness of the biological importance of Mediterranean food products. It highlights points that may help producers and manufacturers to identify emerging technologies and growth opportunities in the production of agricultural products but also in the food supplement, pharmaceutical and functional food industry. Examples are given indicating how research in the field of food chemistry, food technology, food biochemistry and biosciences can contribute to the promotion of Mediterranean products and the exploitation of agricultural waste products.

Mediterranean food products

Governments throughout the world have had very little success in persuading the public to follow a healthy diet. Consumers in Mediterranean countries have been criticised for gradually abandoning the wise rules of their traditional diet. The industry, on the contrary, seems to be responding more favourably and to be taking the rapidly growing number of research studies backing the nutritional importance of the diet seriously into consideration.

Only a handful of traditional food products are being exploited commercially to date. Little information is available in the public arena on many products that can claim a truly Mediterranean identity. It must also be stressed that it is not only foods and food products that can be of interest, but also the methods and technology used in the processing. Traditional methods can involve low energy consumption, and this principle paves the way for combining tradition with modern technology. Thus, Mediterranean countries, whose food heritage has not yet been fully exploited on regional or global markets, have a great deal of catching up to do, considering that in recent decades the globalisation of food and agricultural systems has considerably undermined ethnic agricultural traditions.

From the point of view of science and technology it is clear that additional knowledge is needed to fully relate scientific knowledge to specific foods, especially those which are key ingredients of the traditional Mediterranean Diet and are rich in antioxidants and phytonutrients. This aspect is clearly demonstrated in the examples given below.

Olive oil, a traditional, but also a functional food

Olive oil, a staple food for the people living in the countries surrounding the Mediterranean Basin, is also dominant in the area of specialty foods, while on the issue of good health the news get better and better as more and more research findings confirm previously suggested health benefits.

This oil is now gaining popularity among consumers who in the past considered it only as part of an exotic dish. Its popularity is mainly due to epidemiological and other data, which show that olive oil play a positive role in the prevention of certain diseases and in particular of coronary heart disease.

Today olive oil is produced in many countries, including areas outside the Mediterranean Basin, in a way that the modern technology used is based on the same principles of traditional processing methods. This mode of production is an important example indicating that technology, innovation and tradition can be combined and can interact to achieve high levels of quality. In 2004 the Food and Drug Administration (FDA) announced the availability of a qualified health claim for monounsaturated fat from olive oil and reduced risk of coronary heart disease (CHD)¹. According to the FDA, there is evidence suggesting that consumers can reduce their risk of CHD if they consume monounsaturated fat from olive oil and foods containing olive oil rather than foods with a high content of saturated fat, while at the same time they do not increase the

1 - www.fda.gov/-dms/qhcolive/html

total number of calories consumed. However, the biological value of olive oil is most probably due not only to its fatty acid composition but also to the nature and levels of minor constituents (Quiles *et al.*, 2006; Núñez-Córdova *et al.*, 2009; Boskou, 2009).

Good quality virgin olive oil is protected by strict European Union regulations and specifications of the International Olive Oil Council and other organisations. These rules are now supported by DNA or chemistry-based fingerprinting for identifying the variety and geographic origin (genuineness and typology). There are numerous reports on the discrimination of olive cultivars using molecular markers (Spaniolas *et al.*, 2008). This additional qualitative and quantitative information provides the industry and the regulators with a new valuable means on which to base the procedures that ensure quality, authenticity and safety.

Virgin olive oil is a typical example of a “functional” food because of its fatty acid composition and the presence of minor constituents, mainly phenols, and squalene. Accumulated evidence suggests that the oil may have health benefits that include reducing the risk factors of coronary heart disease, preventing several types of cancer, modifying immune response, reducing inflammation markers and decreasing age-related cognitive decline.

Considering the above and other properties, olive oil appears to be a veritable functional food and may provide additional health benefits beyond basic nutritional needs. Efforts to improve its composition therefore now aim mainly to increase the content of bioactive phenols. The change in milling from a 3-phase to a 2-phase system is in line with this aim. Other technological innovations in the olive oil industry are also oriented to preserve minor constituents originally present in the fruit in order to optimise antioxidant phenol ratios while at the same time retaining an acceptable bitter taste. The industry is also trying to improve storage conditions and control oxidation by minimising pro-oxidant factors, since the minor constituents are responsible for the unique flavour of the oil.

Another form of olive oil is “cloudy” (veiled) olive oil, which is consumed before full precipitation in the tanks and filtration. It is an emulsion-suspension and can persist for months before full deposition of a residue. Small quantities of cloudy olive oil, the real fresh olive juice, are sold directly from the mills to consumers who consider this type more “green” and richer in flavour. This product is now earning popularity due to findings related to the presence of important phenols, including oleocanthal, and other minor components with pharmacological properties. Oleocanthal, related to the stinging sensation at the back of the throat, was recently synthesised and found to have the same pharmacological properties as the anti-inflammatory drug ibuprofen (Beauchamp *et al.*, 2005).

Recent studies indicate that not only virgin olive oil but also olive residue oil (olive pomace oil) may contain biologically important compounds such as oleanolic acid, maslinic acid, ursolic acid and other triterpenes (erythrodiol, uvaol). These compounds were found to be potent antioxidants preventing both the initiation and propagation of Low Density Lipoprotein oxidation and also to have an antitumoral and anti-inflammatory effect. Attempts are now being made to recover these bioactive compounds from olive milling by-products. These efforts indicate that the biological value of residue olive oil must be re-evaluated (Boskou, 2009).

In comparison to other vegetable oils, usually richer in polyunsaturated fatty acids, olive oil has a much lower rate of alteration during domestic frying or other uses that require high temperatures. This stability of olive oil and its resistance to high temperatures are due to its fatty acid profile and the presence of natural antioxidants and sterols that inhibit oxidative polymerisation (Boskou, 2006a). However, when the oil is heated for repeated frying operations its phenolic content and the antioxidant activity are significantly diminished. These results demonstrate that virgin olive oil has a remarkable thermal stability, but should not be seen only as a good frying medium. If health effects are expected from the phytochemicals present, the number of heating operations should be restricted to a minimum.

Innovations and new products based on olive oil

The biological importance of olive oil has stimulated the interest of the industry, and today there are patented foods on the market, mainly margarines and cholesterol-lowering products, reduced-fat mayonnaises or chocolate products that contain olive oil. The justification for such products is obviously the result of many studies based on dietary supplementations with olive oil suggesting that the replacement of other fats by olive oil reduces cardiovascular disease and other risks.

To obtain better stability of fermented sausages, part of pork fat can be replaced with olive oil. This substitution results in a lower lipid oxidation rate and a better balance of saturated, monounsaturated and polyunsaturated fatty acids. Partial replacement of the animal fat by olive oil has also been suggested for reducing cholesterol levels in meat products. In other cases the nutritional benefits of olive oil are combined with those of n-3 fatty acids (Sacchi *et al.*, 2002).

Salad dressings made with olive oil and lemon juice are very popular in the Mediterranean countries. They are a rich source of biologically important compounds such as biophenols, lipid-soluble vitamins, water-soluble vitamins and squalene. Adamantini Paraskevopoulou *et al.* (2005) have developed a stable olive oil and lemon juice salad dressing using xanthan gum as stabiliser and gum arabic or propylene glycol alginate as emulsifiers. This dressing can be used in convenience foods.

There are products on the market (mainly spreads) in which olive oil has been incorporated into their composition. The level of olive oil addition is usually low as is the concentration of olive-oil-derived micronutrients in the final product. Researchers are investigating the incorporation of selected bioactive ingredients of olive oil into modern culinary products in novel forms and in substantial concentrations that may exhibit a long-term beneficial effect. Their efforts are based on low temperature crystallisation that can provide two fractions, with a significant difference in the melting point but with the same oxidation stability (Jansen and Birch, 2009).

Olive oil is too valuable to be hydrogenated since even lampante (non-edible) oils are usually more expensive than seed oils. Thus, hydrogenation is meaningful only in the case of surplus of raw material for the production of specific products. Olive oil is not rich in polyunsaturated fatty acids; to obtain a hard product it has to be hydrogenated under conditions that favour positional and geometrical isomerisation. Interesterification

of blends of refined olive oil and tristearin produces zero-*trans* plastic fats with properties similar to those of package margarines and the additional advantage of high amounts of *cis* monounsaturated fatty acids (Boskou, 2006a).

Halil Vural and Issa Javidipour (2004) have prepared interesterified olive oil for use as a beef fat substitute in sausages in order to obtain a better ratio of unsaturated to saturated fatty acids. Other attempts have also been made to use olive oil in the preparation of “structured lipids” (Fomuso *et al.*, 2001; Tynek and Ledechowska, 2005).

Recently, Manuel Criado and his collaborators (2007a and 2007b) studied lipase-catalysed interesterification of virgin olive oil and fully hydrogenated palm oil and described the chemical properties of the semi-solid product obtained. Refined olive pomace oil, stearic and palmitic acids were used in a specific lipase-catalysed acidolysis for the production of a cocoa-butter-like fat (Çiftçi *et al.*, 2008).

Other innovations relating to the quality of olive oil are concerned with bitterness, the level of polar phenolics, hydrolysis of secoiridoids, pro-oxidative factors and the balance between phenols concentration and the bitter index.

Table olives

Table olives are a highly nutritious food with a balanced content of fats made up mainly of monounsaturated oleic acid. Eating olives also provides fibre, vitamins and minerals. Olives constitute an essential element of the Mediterranean Diet and a featured ingredient in hundreds of dishes. They are important from a nutritional point of view for the general population in many Mediterranean countries, especially during the long periods of fasting. They are of vital importance for the Christian orthodox monks and nuns who consume large quantities of olives. In Portugal, stoned halved table olives, known as “alcaparra”, are widely consumed and their production is an important agro-economic factor for local producers (Soussa *et al.*, 2006).

Table olives, if properly debittered, can contribute to the daily intake of nutritional antioxidants. They contain an array of polyphenolic phytochemicals, including hydroxytyrosol, 3,4-dihydroxyphenylglycol, various hydroxytyrosol derivatives (e.g., oleuropein) and flavone glycosides (Boskou, 2006a; Rodriguez *et al.*, 2009; Zoidou *et al.*, 2010).

The concentration of oleuropein must be reduced during the table olive elaboration process. The most usual industrial debittering methods consist of treating the fruits with water or a sodium hydroxide solution or leaving them in brine that produce the hydrolysis of this compound.

Debittering causes diffusion of phenols from the fruit to the water or brine and vice versa. The prevailing phenols in table olives are hydroxytyrosol, tyrosol, luteolin and phenolic acids (Boskou, 2009). Evagelia Zoidou *et al.* (2010) identified Throuba Thassos, a traditional table olive variety, as a nutritional rich source of oleuropein.

Debittering using existing technologies presents certain drawbacks such as time, discharges and the prohibition of the product thus obtained in the trade of “ecological” olives. New procedures allow removing bitterness of the fruit through phenol oxidation

processes. Such innovations may provide competitive advantages as long as olives and olive preparations are not evaluated as sources of natural antioxidants, since oxidation destroys the valuable phenols. In a recent study, Vassilis G. Dourtoglou *et al.* (2006) examined the effect of the storage of olives under carbon dioxide atmosphere. Such studies may provide new insight into the debittering of olives, which should be seen as valuable sources of natural antioxidants. It must also be stressed that patented innovative processes for producing olive powders or other products used in pizzas, pastas, breads, spreads, dips, dressings, etc. are now based on the retention of health compounds initially present in the olive. Such products are advertised as good sources of hydroxytyrosol, one of the most potent antioxidants found in nature. Another innovative idea is to enrich table olives with phenols extracted from olive leaves in order to restore the phytochemicals lost in the debittering process (Lalas *et al.*, 2011).

Carob bean – an old food rediscovered

The carob tree (*Ceratonia siliqua* L.), is widely distributed in the Mediterranean area. Carob bean or St. John's bread, the brown pod of the carob tree, is a fruit rich in carbohydrates that has been used by man for centuries as a source of nutrition. Beyond the traditional consumption of raw carob pods as sweet fruit by Mediterranean people, the use of processed carob husk in confectioneries is well-established. Fine ground carob powder from the carob pulp is used in various industries in the production of confectionery, beverages, bread or pasta. Carob flour, milled from the dried pod is often used as a cocoa substitute. It is caffeine free and low in saturated fat and is thus ideal for those who need to avoid chocolate.

The gum which comes from the endosperm of the seed is chemically a polysaccharide, a galactomannan (Additive E 410, a thickener and stabiliser, the preferred gum in frozen desserts, cultured dairy products, cream cheese and other products). It is the best-known example of a co-gelling polysaccharide, which interacts by association with helical polysaccharides like agar-agar. An innovation in the carob bean business is the preparation of a dietary fibre with a unique composition.

Tehina

Tehina (or tahini) is made from sesame seeds. It may contain other ingredients which improve the texture or provide more authentic "Mediterranean" taste. It is often used in the preparation of hummus or other dips and for the preparation of halva, a popular sweet dessert. As a spread, tehina replaces butter on bread. Tehina sauce is a popular condiment for the meat and vegetables in the cuisine of Middle East and Mediterranean countries.

Sesame seed, tahini and halva are rich sources of sesamol and important dietary lignans such as sesamin, sesamolin and sesaminol. Sesamolin and sesamol are believed to promote the integrity of body tissues in the presence of oxidising compounds. There is ample literature on the antioxidant and anti-cancer activity of sesame seed and sesame seed oil and their various healthful properties (Boskou, 2006b; Moazzami *et al.*, 2007). The latter would justify a greater awareness of sesame-based foods, but for the moment tehina and halva seem to be awaiting wider recognition.

Sesame seed oil is very stable at high temperatures. The stability has been attributed to tocopherols, ethylidene side chain sterols, sesamol and lignans (Boskou and Elmadfa, 2010). This stability explains the use of sesame seed in the preparation of “healthier” frying oils.

Hummus

Hummus is one of the world’s oldest foods; there is evidence suggesting that the ancient Egyptians used chickpeas 7,000 years ago and that active cultivation in the Mediterranean basin began around 5,000 years ago. The nutritional value of traditional hummus is due mainly to the chief ingredient, chickpeas. Other contributing ingredients are olive oil, lemon juice, tahini, (sesame seed paste) and spices. Hummus may also contain spinach, garlic, red peppers, olives or other ingredients, which provide distinctive flavours. The addition of olive oil, olives and tehina impart significant health benefits such as high monounsaturated fatty acid content and high content of biologically important phenols. Hummus is a good source of soluble fibres, which may help to lower cholesterol by “capturing” the cholesterol and “dragging” it away from the intestines. Made popular by the Mediterranean Diet, hummus is a healthy alternative spread and is rapidly becoming a staple in many United States diets.

Mediterranean fruits

Prevailing theories in the field of modern nutrition indicate that one of the keys to staying healthy is to stock up on antioxidants, which promote healthy ageing in every system of the body. This is one of the most important reasons why a Mediterranean Diet, with its high fresh fruit and vegetable content, is recommended.

Based on this theory and the fact that most consumers do not get the necessary nutrient intake needed daily, the industry – mainly in Western countries – produces Mediterranean vegetable blends in concentrated forms that resemble the antioxidant-rich Mediterranean Diet. Theoretically, consumers living in the Mediterranean countries do not need such supplements, because they are supposed to obtain the necessary intake. This is not true, however, since people living in the Mediterranean basin, especially in the Northern Mediterranean countries, have abandoned their healthy traditional habits and consume too much fat and red meat; their diet is far from the suggested daily intake of five to seven servings of fruit and vegetables.

In a very recent study (Ganhão *et al.*, 2010) wild Mediterranean fruits such as dog rose (*Rosa canina* L.), strawberry tree (*Arbutus unedo* L.), common hawthorn (*Crataegus monogyna* L.) elm-leaf blackberry (*Rubus ulmifolius* Schott) were analysed for the level and profile of phenolic compounds and the *in vitro* antioxidant activity. Extracts from these fruits were tested as inhibitors of lipid oxidation in raw pork burger patties. The intense antioxidant activity found, compared to that of quercetin, marks the potential use of these fruits as ingredients for the manufacturing of healthy meat products.

Studies of this nature indicate how recent research opens up new avenues for exploiting Mediterranean plants, which are rich sources of natural antioxidants. Antioxidant-enriched fruit varieties can be selected by means of specific breeding programmes. The availability of high quality and nutritionally enriched fruits at competitive costs may be a useful tool in the planning of healthy diets.

Traditional dried fruits such as raisins, figs, dates, apricots and apples have been a staple of Mediterranean Diets for millennia. Dried fruits are a particularly significant source of dietary fibre and potassium. They also provide essential nutrients that are otherwise low in today's diets, such as vitamin A (apricots and peaches), calcium (figs), vitamin K (prunes), iron, copper and boron (raisins, prunes). Dried fruits are an excellent source of polyphenols and phenolic acids. These compounds make up the largest group of phytochemicals in the diet and appear to be partly responsible for the potential health benefits attributed to diets rich in fruits and vegetables. Various dried fruits have unique phenolic profiles. For example, the most abundant in raisins are the flavonols quercetin and kaempferol and the phenolic acids caftaric and coutaric acid. Dates contain quercetin, apigenin and luteolin; prunes have a very high chlorogenic acid content. Dried apricots and peaches are also important sources of carotenoids, compounds which are precursors of vitamin A and antioxidants.

Health and wellness preparations based on Mediterranean products and by-products

Recovery of oleuropein and other phytochemicals from olive tree products

Many companies claim that the existing studies and extensive scientific documentation related to the biological properties of biophenols and other phytochemicals present in olive tree products justify and support the positioning of various preparations in the market of phytopharmaceuticals, dietary supplements, functional foods and herbal teas.

There is a wide range of patented and standardised olive fruit and olive leaf extracts in the form of syrups or pills, sold mainly in the so-called health ingredients stores or health shops. They are continuously introduced on the market by those who wish to capitalise on the increasing awareness of the benefits of the Mediterranean Diet. Their main characteristic is the high level of oleuropein and other biologically important phenols such as hydroxytyrosol and verbascoside, all of them responsible for many of the biochemical and biological effects of the extracts. Some products are mixtures with other antioxidants such as carotenoids, vitamin C, tocopherols and extracts from *Lamiaceae* plants.

Oleuropein

One of the most active chemicals found in olives and olive leaves is oleuropein; a natural chemical compound widely studied for its health related effects (Boskou, 2009). Chemically, it is a glucoside ester of hydroxytyrosol and elenolic acid.

Oleuropein has the following properties: antimicrobial activity, high antioxidant activity, scavenging of superoxide radical and other reactive species, inhibition of LDL oxidation and many others; there are also claims that it may contribute to the prevention of hypertension, osteoporosis and cancer.

Concentrates of oleuropein are widespread on the market and they are mainly prepared by extraction from olive leaves (for a review see Boskou, 2009). Also, extracts rich in

polyphenols, as well as high-purity oleuropein have been obtained by “alkaline extraction” from the leaves of the olive tree (Kefalas, 2007).

Oleuropein concentrates are found on the market in the form of capsules or syrups. They are used mainly in what is known as holistic medicine to treat conditions such as influenza, herpes and various infections. For the moment such preparations should be used carefully since they may have interactions with blood-pressure-lowering or sugar-lowering drugs, but this is a general problem of interaction between herbal products and medications and it is essential to inform one’s doctor of the herbal preparations one is taking.

Hydroxytyrosol

Olive-derived hydroxytyrosol preparations are distributed in many parts of the world and marketed as products added to health supplements and foods related to the Mediterranean lifestyle.

Hydroxytyrosol can be produced by various patented or other proposed processes from olive milling waste-water. It is claimed that it offers remarkably high free-radical protection. The methodology of obtaining extracts rich in polar phenols is based on the defatting of oil mill wastewater, extraction with organic solvents and fractionation using various methods (for a review see Boskou, 2006a). Production of highly purified hydroxytyrosol can be obtained from “alperujo”, the liquid-solid waste product of the two-phase olive processing system. Ines Fki and his collaborators (2005) have proposed an ethyl acetate extraction procedure for mill wastewater using a counter-current unit. Other patented techniques propose the extraction of pitted olives in order to obtain hydrolysis products from oleuropein.

Olive leaf teas

Olive leaves have been used medicinally in various times and places. Natural olive leaf and olive leaf extracts are now marketed as anti-aging, immunostimulators and even antibiotics. Clinical evidence has proved the blood-pressure-lowering effects of carefully extracted olive leaf extracts. Bioassays support its antibacterial, antifungal and anti-inflammatory effects at the laboratory level. A liquid extract made directly from fresh leaves recently attracted international attention when it was shown to have an antioxidant capacity almost double that of green tea extract and 400% higher than vitamin C.

Squalene

Squalene is an intermediate in the biosynthesis of sterols in plants and animals, a precursor of phytosterols in plants and a precursor of cholesterol in humans. It occurs in high concentrations in the liver oil of certain sharks and in smaller amounts in olive oil, rice bran oil and yeast.

The two more important sources of squalene are shark liver oil and the deodorisation distillates of the olive oil refining process (squalene accounts for more than 50% of the unsaponifiable matter of olive oil). Squalene supplements are regarded as a promising anti-cancer agent, although human trials have yet to be performed which could verify its usefulness in cancer therapy. Researchers believe that squalene is a constituent that has a significant contribution to the health effects of the oil.

Polyphenols

Carob pods

The possibility of using chopped and deseeded carob pods as a source of polyphenolic antioxidants has been discussed by Dimitris P. Makris and Panagiotis Kefalas (2004). Maximum quantities of polyphenolic components were found in 80% acetone extracts.

Grape seed extracts

Grape seeds are vinification by-products that have a high concentration of flavonoids. They are a low-cost commercial source for extracting phytochemicals. The compounds identified and quantified in grape seeds are gallic acid, catechin, epicatechin, epigallocatechin, epicatechin gallate, epigallocatechin gallate and procyanidins. Grape seed extract may be useful for treating high blood pressure and high cholesterol. Resveratrol is a polyphenol contained in grape seeds, which may interfere with cancer cell growth and proliferation. In laboratory models, preliminary research shows that grape seed extract may have other possible anti-disease properties, such as wound healing and enhancement of bone density.

Pomegranate

Pomegranate (*Punica granatum*) features prominently in the diets and history of people living in the Mediterranean region. It has been cultivated since prehistoric times and is common around the Mediterranean shores. It contains a broad spectrum of vitamins and minerals, with high amounts of vitamin C and potassium. It is also a powerful source of antioxidant polyphenols (delphinidin, cyanidin and pelargonidin glucosides) and anti-inflammatory essential amino acids. Recent science has been focusing on the antioxidant and cardioprotective aspects of pomegranate. These brightly coloured fruits contain numerous compounds known for their antioxidant capabilities, including anthocyanidins, catechins, proanthocyanidins, ellagitannins, gallotannins, ellagic acid and gallic acid.

Citrus by-products

The by-products of citrus processing are a rich source of naturally occurring flavonoids. The peel has a high concentration of flavonoids. Hesperidin, a flavanone glycoside, is the most important in the citrus peel molasses. Other flavonoids present are flavones and flavonols. Hesperidin is an important bioflavonoid contributing in human nutrition to the integrity of the blood vessels. It is a strong antioxidant providing cellular protection against damaging effects induced by reactive species. Studies conducted with orange peel from oranges cultivated in the Mediterranean region indicated that this by-product is a good source for recovering antioxidants, especially hesperidin (Boskou, 2006b; Kanaze *et al.*, 2009).

Corchorus olitorius L.

Corchorus olitorius L. (Molokhiya or Melokhiya) is a vegetable native to Egypt, very popular in Middle Eastern and Mediterranean regions. This vegetable contains calcium, carotene, minerals, vitamin A, B1 and B2. It is a very nutritious and healthy vegetable.

Young green leaves and shoots of this fast-growing vegetable are picked for use in cooking. They add flavour and viscous texture to soups and stews, the seeds are used as a flavouring, and a herbal tea is made from the dried leaves. Five phenolic compounds, caffeoylquinic acid and quercetin derivatives, have been identified in the leaves of *Corchorus olitorius* L. (Azuma *et al.*, 1999). These polyphenolic compounds are now being investigated for their association with the reduction of diet-induced obesity (Wang *et al.*, 2011).

Other agricultural by-products as sources of antioxidant phenols

Fennel (*Foeniculum vulgare*) is a plant species in the genus *Foeniculum*. It is generally considered indigenous to the shores of the Mediterranean, but has become widely naturalised in many parts of the world. It is a highly aromatic and flavourful herb with culinary and medicinal uses. The aqueous extract of fennel contains caffeic acid derivatives and flavonol glycosides, and has a remarkable radical scavenging capacity (Parejo *et al.*, 2004).

Kumquat (*Fortunella margarita*) peel fractions have been studied by Engy Samih Sadek *et al.* (2009) for their polyphenolic composition and antioxidant characteristics in the framework of research on bioactive phytochemicals in native species of the Mediterranean basin.

The functionalisation of food

The investigations discussed above are good examples of innovative food science and indicate emerging technologies. Efforts are increasing to obtain foods with higher nutritional value by adding specific compounds that are only present in small amounts or are not present at all.

Olive oil and olive products

The industry – but also researchers – believe that awareness of the Mediterranean Diet is expected to boost sales of various preparations based on bioactive ingredients obtained from olive oil and olive tree products, which can be used for functionalising food (for a review see Boskou, 2009).

Food compositions fortified with anti-oxidants from olive oil or olives have been proposed for spreads, tomato products and dressings. The principle of the method is to expose olive oil under hydrolytic conditions to an aqueous phase so that lipophilic phenolic compounds will hydrolyse and migrate to that phase. Other attempts aim to obtain more lipophilic derivatives, which are more effective. Various esters of hydroxytyrosol have been prepared and tested for their radical scavenging activity and protection against H₂O₂-induced oxidative DNA damage.

A number of reports have been published recently indicating that research is being carried out to prepare olive oil imitation products. The principle is to use refined high oleic acid sunflower oil to which olive oil phenols such as hydroxytyrosol, oleuropein, luteolin and others have been added in various concentrations. These imitation products are already being advertised as revolutionary products in functional nutrition. It appears

that the door is open to enrichment of any oil or food preparation with olive oil phenols. This approach, however, does not seem to be properly documented. Olive oil is a fruit juice with a very complex composition, and many constituents probably have a synergistic effect. It is not yet possible for the time being to fully evaluate the role of the biologically active compounds present in olive oil and to determine the extent of the contribution of each active compound to the overall positive health effect. Besides, as the experts emphasise, phenolic-enriched products should as far as possible approximate the natural environment in which active molecules are found, since such molecules may be not useful outside the original matrix.

Artichoke and dietary fibres

Present studies aim to find fast, economical and feasible ways to extract antioxidant phenolics from artichoke and use them as possible ingredients for functionalising foodstuffs in order to decrease lipid oxidation and to increase health-promoting properties (Llorach *et al.*, 2002).

The dietary fibre from carob ranks favourably amongst the various dietary fibres due to its high lignin and polyphenol content. It combines a digestion-promoting effect with antioxidant potency and a favourable effect on cholesterol absorption. It can be added to bakery products, extrusion products, bars, dairy products and chocolate desserts.

Novel antioxidants from herbs and plant extracts

Most approved antioxidants added to foods are synthetic. Antioxidants isolated from plant sources may provide alternatives to the current choices of effective oxidation inhibitors but for the moment there are few applications. These few applications and the results of studies conducted in the last two decades provide evidence that deeper insight into the structure-reactivity relationships and proper formulation of antioxidants and synergists could provide a real alternative to hydrogenation or other stabilisation methods. Novel natural antioxidants seem to be the landmark for future exploration in the search for healthier, more stable frying oils.

The most important innovative proposals for preventing the deterioration of edible oils during storage or heating are those based on the use of extracts from herbs, especially those of the *Lamiaceae* family, (oregano, rosemary, and others), which are widespread in the Mediterranean countries. These herbs are very rich in phenolic antioxidants (Boskou, 2006b).

Olive leaf extracts have also been suggested in a series of reports as a means of supplementing the nutritional value of frying oils (Frag *et al.*, 2006; Salta *et al.*, 2007).

Research and development

The science

Convincing scientific evidence suggests that the benefits of phytochemicals may be even greater than is currently understood, since they affect metabolic pathways and cellular reactions believed to be involved in the etiology of a wide range of chronic diseases. An increasing number of food scientists are attributing an important nutritional role to the secondary plant ingredients from fruits and vegetables.

The Mediterranean Diet, rich in cereals, fruits, vegetables, nuts, whole grains, fish and olive oil is the traditional diet of the Mediterranean region but it has garnered interest throughout the world for the health benefits it can offer. Thanks to this global reputation the food industry has adopted some of its principles to assist in the marketing of healthy foods. This offers new opportunities in the Mediterranean countries to exploit further products, whose health ingredients have not yet been fully utilised by the industry and whose important benefits are not yet known to consumers. Bioscientists will soon indicate more clearly where the impact on health lies and what the real bioavailability of bioactive compounds and their possible synergies are. The changes needed to remedy the mismatch between previous dietary habits and present-day lifestyles are becoming more visible every day.

Producers, processors and consumers

The findings in the areas of food science and biosciences call for new processing techniques based on food science and technology, which meet quality, identity and safety requirements. Alternative uses of traditional ethnic products and the process to obtain a Hazard Analysis Critical Control Point certification are very good examples in this context.

Consumer interest in food products linked to geographical origin and traditions in the Mediterranean has been growing in recent years. However, with a few exceptions, the specific quality that is sought is not always properly documented by research work, especially analytical work indicating the typicality of such products. Producers should indicate more clearly how composition and properties are connected with specific geographical indications and should convince consumers that this distinction is based not only on the administrative division of certain production areas, but on the genuine preservation of traditional quality and local know-how (that guarantees intrinsic factors such as colour, flavour, appearance, composition, etc.). With increasing urbanisation, origin is becoming increasingly important, and it must become a “proxy”, promoting consumer confidence.

Research and development are important tools for innovation, productivity growth and competitiveness. Research and development means an increase in knowledge and use of the knowledge stock to devise new applications. Today, most of the scientific evidence is available, while new research work supporting the Mediterranean Diet and Mediterranean food products is continuously being produced. However, the exploitation of this knowledge in order to develop particular technologies for rural development is

not satisfactory. In spite of many joint research projects and public or other subsidies, the R&D alliance is not as yet recognised as being particularly effective. There is generally a gap amongst actors, mainly between researchers and industry and between researchers and producers. The results of the firms that innovate in-house are more visible. However, there are cases where at least two actors, university laboratories and private companies (usually SMEs) collaborate successfully to create products that are innovative and also traditional. This is indicated in the example given in the Box below. There are many other good ideas still pending implementation or still at the experimental stage, such as traditional recipes for sauces adjusted to modern lifestyles, products from antiquity (retro-innovation) such as mixtures of honey and vinegar (the ancient Greek balsamico), low-fat or modified-fat dairy products, mustards and pâtés fortified with novel antioxidants from plant sources, free-flowing granules from olives or olive oil and many other trendy, innovative, yet traditional products obtained with modified technologies that also take sustainability and environmental protection into consideration.

Olives - vacuum packed, low salt, a rich source of oleuropein

An innovative food product linked to geographical origin and traditions in the Mediterranean (from emerging science to in-house innovation)

A small enterprise on a Greek island processes a certain variety of olives, which are partly debittered on the tree. The trees are cultivated biologically, and the olives are processed following a traditional method based on the use of dry salt. An innovative method of debittering reduces salt content to a minimum. The product, certified as a product of geographical origin, can be packed in vacuum and offered on the market as a snack, transforming the use of olives from an appetiser or an added ingredient in a dish to a healthy snack (dry product, absence of liquids that make it difficult to consume immediately). The packed olives have superior nutritional value, as they are a very rich source of oleuropein, an important biologically active compound. An innovative yet very traditional product.

In addition to difficulties such as the lack of close alignment between food research centres and industry and the low return on the investments and profits of the companies that invest in more innovative activities, there are also problems related to consumers. These are conservatism, complex legislation and information concerning product safety. In the past few decades new ideas and new concepts have been introduced in food production concerning traceability, labelling, quality, organic agriculture, sustainability and environmental protection. The consumers see labels such as organic or protected designation of origin (PDO), certified etc., but they need more time to consider them. As the result of these new concepts and consumer patterns tending increasingly towards convenience and service models characterised by the mass production of industrialised products (driven by the ever-growing number of hyper- and supermarkets), there is a great deal of confusion. It is therefore imperative to inform and educate consumers more effectively: they should understand how modern catering can coexist with traditional cooking. It is also important that the scientific knowledge that has been obtained is conveyed to consumers in simple terms so that it can be readily assimilated and that both intrinsic and extrinsic factors are well understood. But most important, consumers should have a better understanding of how findings in the area of chemistry,

nutrition and biosciences are connected with specific Mediterranean foods. Analysis of cases of failure and good ideas for innovative products that have been rejected have revealed that the failure was not due to lack of skills or budgetary problems, but mainly to the lack of alignment and the inability of consumers to understand the impact on health. Obviously, better dissemination of the knowledge relating to the scientific advantages of the Mediterranean Diet for health and lifestyle is needed.

Conclusion

Mediterranean food products are now being re-evaluated for the beneficial health effects they offer, effects which go beyond basic nutritional needs. Today, much scientific evidence is available, while new research findings supporting the Mediterranean Diet and Mediterranean food products are continuously being produced.

Innovative food science is based on increased awareness of the biological importance of Mediterranean products. Major technological developments aiming to improve quality and preservation are therefore focusing on improving composition and retaining bioactive ingredients in the final product. Another innovation is the incorporation of Mediterranean food, phytochemicals and novel antioxidants into other foods. More documentation is needed, however, on patented products containing bioactive ingredients that have been synthesised or obtained from Mediterranean food sources or by processing wastes. Such compounds are used in so-called “health and wellness” supplements, with claims that are not strictly controlled.

Since it is to be predicted that within a few years diet will come to be associated with hundreds of “healthier” products, measures must be taken to promote consumer awareness. Consumers should be encouraged to value the cultural identity of food. People should also be in a position to make a more informed evaluation of new products that are both innovative and traditional and can contribute to rural development and prosperity. If the industry and food producers identify this key trend as a driver for innovation and the development of new products, then traditional diets can be easily preserved and revitalised despite changes in consumer demographics and lifestyle.

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MARKET STRATEGIES OF THE AGRO-FOOD FIRMS: THE TURKISH EXPERIENCE

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The situation of agro-food firms in Turkey can be taken as a reference case for Mediterranean countries, and in particular for developing countries. Turkey's significance is based on the size of its population (second largest after Egypt), the per capita income level (highest among non-EU members except Israel), and the country's ranking in Mediterranean food product production and foreign direct investment (FDI) inflow, including agro-food firms, particularly those in the downstream and midstream part of the value chain. Accumulated FDI inflow amounted to 83.6 billion USD in the 2002-2009 period, which is 1.8 and 5.8 times higher than FDI inflow to Egypt and Morocco respectively during the same period (SPO, 2011a). In recent years, accession negotiations with the EU have accelerated infrastructural and institutional changes in all sectors of the economy, including the agro-food sector and, as a result, the environment for agro-food firms has changed considerably. All of these developments have opened up new opportunities but have also brought threats for agro-food firms. The case of Turkey could thus provide lessons for other agro-food firms and stakeholders in the Mediterranean countries.

Turkey has been one of the major producers of typical Mediterranean agro-food products. It is the world's biggest producer of hazelnuts and apricots, the second largest producer of cucumbers, pistachios, watermelons, figs, lentils and chestnuts, and the third most important producer of chick peas, walnuts and olives (OECD, 2011). The EU Member States were the major destination of Turkish Mediterranean exports until the 1990s; since then, new destinations have emerged in the case of fresh produce such as the Russian Federation, the Central and Eastern European countries and the Baltic countries, and the ranking of export destinations has changed accordingly. Besides these countries, Iraq has become an important market in the last few years. Iraq and the Russian Federation are the first and third destination respectively for agro-food exports to single countries (OECD, 2011).

Agro-food firms are usually those which process agricultural commodities, and normally national official statistics only consider these firms. However, agro-food firms dealing in agricultural commodities should also be considered, since they carry out numerous

industrial treatments after the harvest and before the commodities reach consumers. Since agro-food firms are in the middle of the agro-food supply chain they depend on agricultural production but also on the distribution systems and in the last analysis on consumers' decisions.

The situation on the agro-food market, market trends and corporate restructuring in Turkey reveal typical situations of both developed and developing countries in the Mediterranean basin. The existence of multinational firms in both food processing (Danone-Tikvesli, Unilever, Kraft, etc.) and the retail sector (Tesco, Metro and Carrefour, etc.), the recent food quality and safety norms based on the EU regulations, and the growing consumer purchasing power and rising level of education can be regarded as main drivers enhancing convergence with situations in developed countries. On the other hand, many developing characteristics such as low consumer demand for quality and safe products, a weak quality assurance and inspection system on the domestic market, and the size of the rural population still allow many local agro-food operators to participate in the food chain, particularly in small rural areas and towns, and to supply goods to lower socio-economic groups in large cities. All of these characteristics play an essential role as regards the kind of products that the agro-food industry produces.

This chapter is organised as follows: the main features of food consumers and the agro-food sector are first presented in order to illustrate the environment where agro-food firms have to work; then, market opportunities for agro-food firms in the Mediterranean basin are studied on the basis of case studies of typical Mediterranean products including wine, olive oil and citrus.

Main agro-food indicators

The population of Turkey reached 74 millions in 2010 with an annual growth rate of around 1.15% over the last decade. The older population (over 64 years of age) and the young population (under 15 years of age) accounted for 7% and 26% respectively in 2008 (SPO, 2011a), clearly indicating the great increase in food consumption the country will have to cope with in the future – a typical characteristic of a developing country. Just under 30% of the population was living in rural areas in April 2011, and the share of the agricultural sector in total employment was around 25% (TURKSTAT, 2011a), meaning that, despite its rapid development Turkey, still has features of the developing world.

The purchasing power of Turkish consumers has increased considerably since the 1980s, and in particular in the course of the last decade. Per capita income, in USD, increased from 2,040 in 1980 to 10,080 in 2010 (SPO, 2011b) with marked impact not only on the amount of food purchased but also on the type of products consumed. Per capita income has increased approximately fivefold during the last three decades while the total population has increased by 165%. This is another sign of the wealth generated in this country, which can be regarded as a middle-income country. According to the TURKSTAT "Household Budget Survey" data, food and non-alcoholic beverage expenditure accounted for 27% and 22% of total household expenditure in 2002 and 2010 respectively (TURKSTAT, 2011b), following a natural trend closely related to economic development with figures in between those of developing and developed countries.

In addition to the significance of agricultural employment and the household food expenditure budget, the agro-food sector in Turkey is also important in terms of employment in the food-manufacturing sector, exchange earnings and GDP share. The share of agro-food products in total exports and imports reached 12% and 5% respectively in 2010. In the 2008–2010 period, agro-food exports fell, on average, 43% for fruit and vegetables and 12% for cereals and/or cereal products (SPO, 2011b). During the same period, imports were composed of cereals and cereal products (17%) and oilseeds and oleaginous fruits (13.5%). This indicates the strength of fruit and vegetables as typical Mediterranean products but also the role that cereals and cereal products play in both imports (unprocessed) and exports (processed).

Food processing has developed rapidly since the mid 1990s, and its share in agro-food exports increased from 33% in 1996 to around 50% in 2008, becoming one of the major driving forces in the export economy. In contrast to this trend in agro-food exports, the share of processed food imports in total agro-food imports dropped from 50% in 1996 to 35% in 2010. At the same time, there was a rapid increase in many other imports. Taken as a whole, these trends are another sign of a country which is approaching the patterns of the developed world.

During the three years from 2008 to 2010, the food manufacturing sector employed on average 11.5% of the total manufacturing sector (ISO, 2011a). In 2008, there were 34,781 food and beverage manufacturing enterprises (466 for beverages) and total employment amounted to 328,653 people (10,940 of whom were employed in the beverage industry) (TGDF, 2011).

It is important to emphasise that there were 20,857 “bread and bakery product” manufacturers accounting for 61% of the total number of enterprises. Firms producing cereals, starch and starch products accounted for 12 % of the number of firms. Crackers, biscuits and durable pastry product makers made up another 10%. Firms preserving and processing fruit and vegetables and firms manufacturing dairy products accounted for 4% and 3.7% of the total respectively.

However, in terms of turnover, firms preserving and processing fruit and vegetables, those manufacturing dairy products and those producing cereals, starch and starch products contributed 16%, 13.5%, and 13% of the total turnover respectively. Firms producing and preserving meat and meat products and those manufacturing cocoa, chocolate and sweeteners accounted for 10% and 8% of total turnover respectively. These five groups together accounted for 78% of total turnover in the food-processing sector in 2008.

Remarkable restructuring measures have been underway in the Turkish agro-food sector over the last decade. The globalisation of food manufacturers and food retailers, the economic crises in 2001 and 2008–2009 and food legislation amended to comply with the EU regulations have encouraged a restructuring process bringing accelerated consolidation through mergers and takeovers. Table 1 gives an overview of the major food and beverage firms and their ranking among all Turkish firms. Firms dedicated to typical Mediterranean products such as fruit and vegetables and olive oil do not hold prominent positions. FDI has also been gaining momentum since 2004. There were 208 firms with foreign capital in food manufacturing in 2004 and 467 in 2010 (TGDF, 2011).

According to the Istanbul Chamber of Commerce, there were 49 food and beverage companies within the first 500 largest firms in 2010 (ISO, 2011b). For further information, the main characteristics of several major firms are described in Annex 1 (end of the chapter). Multinational agro-food firms have entered the midstream and downstream segments of the food supply chain, particularly during last decade. For instance, Unilever, Danone-Tikvesli, Nestle, Frito Lay and Cargill are in the midstream sector of the food supply chain and Metro, Tesco, Carrefour, and DiaSA are in the downstream sector. Annex 1 sets out further details on the restructuring and consolidation of the Turkish food and beverage manufacturing industry.

Several common characteristics can be pointed out, such as the investment path that multinationals commonly follow from acquiring a share in national companies to taking complete control, the industrial diversification of many firms, the complexity of industrial processes and products, the increase in the number of joint ventures, the lack of involvement of the major multinationals in typical Mediterranean products and a clear trend of the largest firms towards introducing advanced food-processing such as ready-made meals, frozen products, etc., the increasing involvement of farmers through contracting and the wide range of distribution systems. Many developing countries around the Mediterranean basin will be incorporating all of these features, which are also common in developed countries.

Other restructuring measures in the agro-food markets have been observed, such as: 1) emergence of food conglomerates, 2) vertical integrations, 3) retailers' use of their own brands – so-called private labels, 4) consolidation, 5) diversification of retail formats and 6) increasing quality competition amongst retailers in the fresh produce sector (GlobalGAP certificate, organic foods, local products, etc.).

Table 1 - The largest food and beverage firms in Turkey (2010, turnover in million TL)

Name of company	Products	2010	
		Turnover	Ranking
Unilever	Ice cream, soup, sauces, margarine, seasoning	2,100	16
ÇAYKUR	Tea, organic tea	1,173	36
Anadolu Efes	Beer	910	51
SÜTAŞ	Dairy products	806	59
C.P. Standart Gıda	Chicken, eggs	738	66
Tat Konserve	Tomato paste, canned vegetables, parboiled products, pickles, condiments & sauces, prepared foods	686	71
Eti	Biscuits, chocolate, crackers, cakes, wafers	681	74
Ülker Çikolata	Chocolate	643	79
Erpiliç	Chicken	597	83

Table 1 - Contd. [1]

Name of company	Products	2010	
		Turnover	Ranking
Keskinoğlu	Chicken, eggs, olive oil	588	88
Pınar Süt	Dairy products	563	93
Ülker Bisküvi	Biscuits, chocolate, crackers, cakes, wafers	514	104
Altınmarka	Cocoa liquor, cocoa powder, cocoa butter	487	112
Marsan Gıda	Spring water, soda pop, iced tea, dry foods, margarine	412	136
Önem Gıda	Nuts and cocoa powder	363	154
Kent	Chewing gum, candy, coffee, chocolate, savoury snacks	357	157
Pınar Entegre Et	Meat and meat products	353	160
Doğuş Çay	Tea and herbal tea	349	162
Biskot Bisküvi	Biscuits, chocolate, crackers, cakes, wafers	323	183
Şölen	Chocolate	322	184
Yörsan	Dairy products	315	187
Şeker Piliç	Chicken	286	207
Mey Alkollü İçkiler	Alcoholic beverages (rakı, wine and other liquors)	281	213
Kayarlar Et	Meat	274	217
Cargill	Cocoa and chocolate, culture and enzymes, aromas, functional systems, health food, fruit juices	260	226
Keskinkılıç	Sugar and tea	257	232
Tamek	Tomato paste, canned vegetables, parboiled products, pickles, condiments & sauces, prepared foods	248	243
Yudum	Vegetable oils and olive oil	242	253
Dimes	Fruit juice	225	270
Bifa	Biscuits, chocolate, crackers, cakes, wafers	216	276
Natura Gıda	Ice cream and sorbets	211	281
Yonca Gıda	Vegetable oil, tomato products, pickles, ketchup and mayonnaise	195	305
Çekok Gıda	Fresh fruits (incl. tropical fruits) and vegetables	192	307
Aynes	Dairy products	175	338
S.S. Marmara Zeytin	Olives and olive oil	174	340
Gedik Tavukçuluk	Chicken	173	343
Nuh'un Ankara	Pastas	167	360
Yörükoğlu	Dairy products	162	373
Besler	Flour and pastas	153	401

Table 1 - Contd. (2)

Name of company	Products	2010	
		Turnover	Ranking
Teksüt	Dairy products	151	404
Arbel Bakliyat	Rice, beans, chickpeas, lentils, bulgur and pastas	149	410
Aroma	Fruit juice, spring water, soda pop, iced tea	148	414
Ova Un	Flour	145	425
Edirne Yağ San.	Vegetable oils and olive oil	143	430
Özgün Gıda.	Hazelnuts	141	440
Ulusoy Un San	Flour	137	454
Türk Tuborg	Beer	127	490
Aytaç Gıda	Meat and meat products	125	496
Şimşek Bisküvi	Biscuits, cakes, crackers, wafers	124	498

Source: ISO (2011b).

Market opportunities for agro-food firms in the Mediterranean area

In this section market opportunities for agro-food firms are evaluated on the basis of the market situation of selected industries regarding typical Mediterranean products. Two of them are able to transform raw materials and to place food products on the market such as wine and olive oil. There is another example, the citrus industry, which is mainly based on fresh products. However it involves great investments in conservation, logistics and packaging. Furthermore, these fruits are the main export products for countries in the Mediterranean area. Explanations about the supply chains are also provided in order to give a full picture of agro-food firms' capabilities.

Wine

The latest data indicate that wine production in Turkey amounted to approximately 58 million litres in 2010 (TAPDK, 2011). In the same year, exports and imports were 2.2 and 1.5 million litres respectively, implying that, although on a small scale, this country has been able to have a similar inflow and outflow trade. According to a report published by the producer organisation and also by the State Planning Organisation (SPO, 2007), not all production is officially registered, although stringent inspections and new regulations introduced in recent years have increased the total registered output from 26 million litres in 2005 to the current figures.

The 2008 output statistics of 92 wine-making enterprises show that 64% of the total production was concentrated on the four largest firms, and the eight largest firms accounted for 73.5% of the production (TURKSTAT, 2010). The first concentration rate is particularly important – it shows that production is highly concentrated on the four largest firms. There were 7 firms employing 20 workers and over in 2005 and 17 such firms in 2009 (TURKSTAT, 2011c). The figures show that the largest firms expanded considerably in such a short period.

According to the Regulation Authority (TAPKD) data, there are only three firms with an annual production capacity of over 10 million litres, and one firm with a capacity of 5 million litres. These four firms are Mey (brand name *Kayra*), Kavaklıdere, Doluca and Yazgan. They have an annual production capacity of 30, 18, 14 and 5 million litres respectively. There are another nine firms with an annual production capacity of between 3.5 and 1 million litres. The total annual output of these nine companies is approximately 19.5 million litres (Koç *et al.*, 2008). The three largest firms together hold the following shares of the various wine market segments: cheap 9%, basic 29%, popular 60%, upper 80%, premium 81%, champagne 67% and imported wine 22% – figures which illustrate their considerable influence in the most expensive segments. In 2009, the three main companies held a market share of 35%. Of the total volume of wine marketed, 72% is sold in the Marmara region, 12% in the province of Antalya and 9% in the province of Izmir. The tourist sector accounts for 15% of total wine consumption (United Anatolia Wine Producer Platform, 2009).

The potential demand for wine is higher than actual consumption if we look at the alcoholic beverages market trend. In terms of volume, beer is the leading alcoholic beverage in Turkey. According to the Market Regulatory Authority's figures for production, import and export, beer consumption increased from approximately 451 million litres in 2003 to 814 million litres in 2010 – an increase of about 80% (TAPDK, 2011). The same data source shows that in the period from 2005 to 2010 domestic wine and rakı consumption increased by 240% and 146% respectively. These trends can be regarded as an indication of the rapid growth in the consumption of both wine and beer and the departure from the traditional beverage rakı, which has high alcohol content.

The market strategies of small wine makers have focused on product quality, and many of them are local actors. The SMEs in the sector are organised under the “United Anatolia Wine Producer Platform”. Many firms are integrated vertically and they have their own vineyards and establish plants and boutiques in several big cities. The second largest wine maker Kavaklıdere, for instance, has 550 hectares of vineyards in six different locations and three plants in various locations. The well-known brand wines Doluca, Sevilen, Turasan, Kocabağ, Vinkara and Likya use grapes from their own vineyards. The main marketing channels used by the largest firms are retailers (both modern and traditional), hotels and restaurants. They enjoy strong brand loyalty on the domestic market.

Wine production could be regarded as an infant industry trying to cope with internal market needs but also able to export, and in both cases it is rapidly adapting to new circumstances as it also has to compete with imported wines with different characteristics. In the last few years the wine industry has followed an interesting course towards consolidation and market positioning. The biggest firms have recognised brands, and

although they do not sell a large volume they use all distribution channels, small firms clearly specialising on local markets.

This shows that a Mediterranean developing country can have a relatively new competitive industry that can promote sales on the domestic market as well as having a presence on large international markets. The industry could well expand given the increasing numbers of tourists but also with regard to recent consumer trends, which show that they prefer to drink wine instead of typical spirits with high alcohol content. The price also plays an important role in accelerating wine consumption. However, in terms of table wine, the wine/beer price ratio is much higher in Turkey than in France, Spain and Italy. Furthermore, since 2003, that ratio has developed to the advantage of beer due to changes in policy concerning excise duties, (specific) tax and special consumption taxes (advalorem tax).

Olive Oil

Olive and olive oil production has increased rapidly in Turkey in the last decade. In 2010 there were 111.4 million fruit-bearing olive trees and 45.8 million non-fruit-bearing olive trees. The area under olive trees amounted to 826,000 hectares in 2010 (TURKSTAT, 2011d). Taking the “direct payment support data” of the Farm Registry System (FRS) of Ministry of Food, Agriculture and Livestock as a basis, approximately 200,000 olive growers with an average orchard size of 2.1 hectares obtained direct payment support in the 2007-2008 marketing year (Ministry of Industry and Commerce, 2010).

According to the direct payment support data, the land under olive orchards amounted to 420,500 hectares, with a total of 657,000 parcels. We can conclude from this data that the average parcel for a grower was composed of 3.3 pieces, which can be considered very fragmented in addition to being small and to the lack of any reasonable possibility to produce oil independently or to enhance producers’ organisations by forming cooperatives or adopting other forms of collaboration. The annual olive output was about 1.4 million tonnes, on average, during the 2008-2010 period (TURKSTAT, 2011d). Olives used for olive oil production accounted for around 68% of output in the same period. From 2000-2001 to 2009-2010, the annual average olive oil output was around 123,000 tonnes. In the period from 2005 to 2009, olive oil exports amounted to 47,200 tonnes, but the figures varied widely from one year to another. Export value was 162.6 million USD on average during the same period. The main destinations of olive oil exports were the US, Italy, Canada, Japan and Saudi Arabia with a mixture of distant and nearby markets (Ministry of Industry and Commerce, 2010). The significance of the US market must be underlined, since it imported 26% of Turkey’s total olive exports in 2009, followed by Italy with 18%. Annual olive oil consumption on the domestic market amounted to 93,000 tonnes on average over the last three marketing years, from 2007-2008 to 2009-2010. Although total consumption has increased in absolute terms, per capita consumption is still very low compared to major olive-oil-producing Mediterranean countries such as Italy, Spain, Greece and Tunisia. The current consumption level and recent trends show signs that per capita consumption will continue to increase in the future as a result of income growth and consumer health awareness.

Table 2 - Major players on the olive oil market in Turkey (2010)

Firms	Brands and market presence	Product categories	Production capacity (tonnes/year)
Ana Gıda	Komili (1923), Kırlangıç (1953) and Madra (1954)	A variety of olive oils, organic olive oil, soaps and gels (body bath soap and gel).	40,000
Kristal	Kristal (1934)	A variety of olive oil, oilseed and corn oils, sultanas, soaps	25,000
Tariş (Cooperatives Union)	Tariş (1913)	A variety of olive oils and cosmetics	500 (tonnes/day)
Ekiz	Ekiz (1979)	A variety of olive oils, olive tea and soaps	17,506
Verde	Verde (1996)	A variety of olive oils, organic olive oil, private label for Migros retail chain	45 (tonnes/day)
Marmarabirlik (Cooperatives Union)	Marmarabirlik (1954)	A variety of olive oils and olives	220 (tonnes/day)
Keskinoğlu	Revika (2005)	Olive oil, eggs and chicken	10 (tonnes/day)*
Fora	Fora (1999)	A variety of olive oils, olives and specialities	1,200
Yudum	Yudum (1975 in vegetable oil sector, November 2010 in olive oil)	A variety of olive oils, sunflower and corn oil	20,000

* Olive crushing capacity.

Source: Compiled by author from firms' webpage, firms' CEO press conferences and explanations.

According to recent data, there were 252 olive oil processing enterprises registered with the Ministry of Food, Agriculture and Livestock in 2008. The Ministry issued a total of 1,014 olive oil production permits the same year (Ministry of Industry and Commerce, 2010). Although there are many processors in the industry, a few firms are dominant players in the packaged olive oil market. The majority of processors are small and operate on local or regional markets. Only 15 of them had 20 or more employees in 2009, for example, producing approximately 24,000 tonnes of olive oil that year (TURKSTAT, 2011d).

Ana Gıda is the major player in the sector with well-known brands such as *Komili*, *Kırlangıç* and *Madra*. Ana Gıda has a 35% share in the domestic olive oil market and its *Komili* brand has a share of 28%. Apart from cooperatives, other major players in the market are Kristal, Ekiz, Verde, Keskinöğlü and the new entrant Yudum. The *Komili*, *Kristal*, *Tariş* (cooperative union), *Ekiz* and *Verde* market shares were 28%, 19%, 17%, 16% and 11% respectively in 2009, covering practically the entire market (Ekiz, 2010). The names of the leading firms working in the packaged olive market are shown in Table 2. *Tariş* and *Marmarabirlik* are the only two agricultural unions of cooperatives (unions) in the first eight undertakings:

- *Tariş* consists of 33 cooperatives gathering approximately 28,000s olive growers in the Aegean region. This organisation accounts for 17% of the domestic market and 20% of exports in 2010. It can be regarded as a main actor in the export market, and it uses its commercial brand (*Ta-ze*) on its consumer packaged goods. *Ta-Ze* was established in 2001 by the Union of *Tariş* Olive and Olive Oil Co-operatives. Its products include olive oil, olives, gourmet products, olive oil soaps and personal care products. The company started as an intermediary for olive oil from local producers, operating through a wide network of dealers and chain stores. It sells abroad at stores in Chicago, Toronto and Singapore as well as in many food retailer departments in various cities in the world. *Tariş* products are produced and packed in Turkey, and its plants have been covered by the International Olive Oil Council's quality control programme since 2002. *Tariş* olive oil is also unique in Turkey as it is the only Turkish brand that is accredited by the international authority (*Tariş*, 2011).
- *Marmarabirlik* is an union of agricultural sales cooperatives, which was established in 1954 by the olive growers in the Marmara region. Currently, the union consists of 8 member cooperatives with a total membership of 29,653. The union purchases and processes approximately 40%-45% of the edible black olives grown in the region and sells its products throughout the country, with 78 intermediaries in 58 cities. It signs contracts with retailers located in Germany, Denmark, Switzerland and Bulgaria to sell on the European market as well as in Canada and Australia. *Marmarabirlik* establishments have a total area of 403,000 square metres. It is a large industrial establishment, which provides added value with a olive-packing capacity of approximately 150 tonnes/day and an olive oil production and bottling capacity of 220 tonnes/day in its modern plants (*Marmarabirlik*, 2011).

There are also local brands of small-scale producers located in olive-growing regions. In the Ayvalık region, for instance, there are 26 firms (including *Kırlangıç*) and 18 of them (including *Yudum*) were using Ayvalık GIs (PDO) in 2010 (Ayvalık Chamber of Commerce, 2011). These local firms either sell through their own shops (boutiques) located in Ayvalık or through the Internet or use both systems. Some companies supply chain stores and sell their products under private (distributor) labels. There are some small-scale ones that process olives from their own orchards. Small and medium-sized processors use distribution channels to market their products either to local boutique shops and/or on the Internet. Organic production and processing methods based on local tradition have also been emerging as a main marketing instrument in addition to price competition.

Although this industry already has a high olive output, given the number of non-fruit-bearing olive trees and the low per capita consumption rate it still has great olive oil potential. As is typical of other Mediterranean countries, the average orchard acreage is too small to produce olive oil independently, so cooperative arrangements or vertical integrations should be established to gain efficiency.

Olive oil producers try to reach the national market through many different distribution channels, and with their competitive quality products they have been able to enter the markets of various European countries and in many other parts of the world, particularly in the United States. However, output varies considerably from one year to the next, and producers may be unable to provide homogeneous and regular quality.

Very few firms are large, but the biggest brands have a very large market share. The cooperative movement, with *Tariş* and *Marmarabirlik*, is significant and has sufficient capacity to have a good share in the domestic market and presence in other countries. Consequently, this industry can be considered a promising segment of the Turkish agro-food sector as a whole and proof that great efforts have been made to transform its structure and to provide attractive products on the market.

Citrus

Turkey is a major citrus producer in the Mediterranean Basin, after Spain and Italy. Turkish citrus output is about one-third of the total EU citrus output (an average of 10.9 million tonnes in the 2005-2009 period), which amounts to around 60% of the Spanish output and is similar to the Italian one (FAOSTAT, 2011). All kinds of citrus production have been increasing in Turkey over the last two decades. Citrus production has increased from around 1.45 million tonnes in the late 1980s to 3.6 million tonnes in 2010. It is the first major producer of lemons and grapefruit and the third major producer of oranges and easy peelers (mandarin oranges, tangerines, etc.), after Spain and Italy. Oranges, mandarins, lemons and grapefruit accounted for 48%, 24%, 22% and 6% of the 2009-2010 average citrus output respectively. Non-fruit-bearing citrus plant inventory data accounted for approximately 17% of the total fruit-bearing citrus inventory in 2010. These inventory data indicate that citrus production will continue to increase in the near future following the growth rate achieved in recent years (TURKSTAT, 2011d). Orange output has been increasing in Turkey for decades, from around 680 tonnes in the early 1980s to 1.7 million tonnes in 2010. The growth in output has been similar and ever higher for other citrus.

Historically, Turkey has been a net citrus exporter and oranges constitute a major part of its imports. Its citrus imports have been increasing since the mid-1990s. On average, the country imported 44,000 tonnes of oranges, 8,100 tonnes of citrus fruit juices and 13,400 tonnes of other fresh citrus in the 2004-2008 period. During the same period, Turkey exported 182,000 tonnes of oranges per annum, achieving its highest ever export figure in 2009 with 266,000 tonnes (AKIB, 2011). While the annual average citrus exports amounted to slightly over 300,000 tonnes in the 1989-1993 period, the figure was 1,219,000 tonnes in 2010. The breakdown of citrus exports in 2010 shows 424,000 t lemons, 419,000 t mandarins, 221,000 t oranges and 155,000 t grapefruit, amounting to 35%, 34%, 18% and 13% of total citrus exports.

The bulk of these citrus exports was sent to the Russian Federation (32 %), Ukraine (14%), Iraq (14%), Saudi Arabia (7%) and Romania (7%) in 2010. The Russian Federation and Ukraine together accounted for approximately 45% of the oranges, 37% of the lemons, 37% of the mandarins and 57% of the grapefruit exported. Iraq accounted for 27% and 17% of the oranges and mandarins. And in the period from 2008 to 2010 the EU-27 accounted for an average of 50% of grapefruit, 30% of lemon, 16% of mandarin and 9% of orange exports.

Per capita domestic use of citrus, except for lemons and grapefruit, has considerably increased, since growth in exports has been lower than growth in production. Orange consumption increased from 849,000 tonnes in 2000-2001 to 1,351,000 tonnes in the 2009-2010 marketing year (TURKSTAT, 2011e). During the same period, the consumption of mandarins increased from 363,000 tonnes to 471,000 tonnes. Integration of the citrus supply chain is weak because there are numerous small producers, which are not organised in cooperatives or producer organisations. The actors in the midstream sector of the chain thus play an important role. There are several exporters who either export products from their own orchards, usually with GlobalGAP certification. The majority of exporters use intermediaries to assemble their products. Exporting firms carry their export citrus to their own packing houses and they send other types of products either to wholesale markets or to the processing industry. No data are available on storage and the capacities of the packing houses, but the author has observed that exporters in citrus-producing regions have been investing in new packaging houses or have been modernising existing infrastructures, and most of them have expanded their capacities over the last decade.

In 2007, a new initiative to promote citrus exports in foreign countries was set up (called Citrus Promotion Group – CPG). This initiative focuses on Turkish citrus promotion and other market development activities with funds coming from exports. So far, the CPG has launched promotional activities involving citrus advertising in the Russian Federation and Ukraine and is planning similar promotional activities in the Middle East and Central European countries.

In the downstream part of the supply chain, since 2005, 9 producer organisations with 1,027 members (called “Producers’ Union” in Turkey) have been acting together taking advantage of the Producers’ Union Act-5200 (Ministry of Food, Agriculture and Livestock, 2011), but their role in the supply chain is very weak. The cooperatives have not been particularly successful in the citrus sector. There has been a considerable government effort to support citrus exports through a marketing board in the past.

Marketing cooperatives such as Narkobirlik (Citrus Producers Cooperatives Union) were established and storage-packaging infrastructures were supported by the government in the 1970s. Recently, Antbirlik (former cotton agricultural sales cooperatives union in Antalya) has been involved in the citrus sector since cotton production has been virtually disappearing and replaced with fruit orchards, with special emphasis on oranges. In recent years, this cooperative invested in a packaging house with cold storage and started to play a role in the Antalya regional citrus market. The small size of farms, limited product diversification and quality/safety standards have been major issues on the supply side. However, based on the 2002-2006 annual average, approximately 80%

of the orange quantity exported was composed of Washington Navel varieties, and 90% of the oranges were exported between November and March.

Similarly, Enterdonat and Lemas varieties accounted for 98% of lemon exports and 96% of the lemons were exported between September and March. Satsuma, Freumont, Minola and Nova varieties accounted for 46%, 20%, 13% and 7% of total mandarin exports, respectively, in the same period. Approximately 90% of the Satsuma exports were shipped between November and December and 90% of other mandarin varieties were exported between December and February. The Star Buy variety accounted for 77% of grapefruit exports in 2008 and 90% of those exports were shipped from October to March (Koç *et al.*, 2009). Furthermore, 40% and 60% of subsidized agricultural credit has been used for the GlobalGAP production certification or organic agriculture, in recent years (Koç *et al.*, 2009).

At the midstream level, there are currently 34 large companies processing fruit juice from citrus, but few of them are located in citrus-growing regions. Although juice consumption is very low, its growth rate has been remarkable in the last few years. However, the total volume of fruit used for fruit juice has increased from 433,000 tonnes in 2000 to 771,000 tonnes in 2008. The amount of oranges processed into juice has increased by approximately 300% – from 23,000 tonnes in 2000 to 64,000 tonnes in 2008 (Meyed, 2011). Total fruit juice and fruit juice/fruit-flavoured product consumption amounted to 776,000 tonnes in 2008, which was 164% more than in 2000. Fruit nectars constitute 66% of consumption, fruit juice 7%, and the remainder consists of fruit-flavoured drinks (Meyed, 2011). The latest figures indicate that per capita annual fruit juice consumption is around 0.8 litres.

Important investments have been undertaken in the fruit juice processing sector during the last five years in conjunction with economic and export growth. Recently, Cutrale from Brazil (world giant in citrus juice), Etap Tarım (a well-known fruit juice manufacturer) and Anadolu Group (major player in the beverage sector in Turkey) have established a joint venture under the name of Anadolu Etap and will expand fruit juice capacity including citrus (Anadoluetap, 2011). Other companies that have recently invested in expanding the production capacity of the fruit juice sector using the latest technology, equipment and appliances.

The citrus industry in Turkey can be regarded as a good example for Mediterranean countries which are trying to meet their own growing domestic demand as well as operating on international markets. Reaching the national market means diversifying production, taking opportunities in a variety of distribution channels and shifting slightly from fresh produce to fruit juices. Since a great deal of this development is concerned with storing, transporting and distributing products, they have to develop all of these industrial capacities in order to be successful.

One of the greatest difficulties is to find new markets, but Turkey has been able to capitalise on the economic growth of the Russian Federation as well as other neighbouring countries (specially East European countries). This does not mean that the Western European countries have been abandoned, but they present a more saturated market with fewer opportunities. This is why most promotional efforts have been

dedicated to new emerging economies as well as to new products and advanced certification. Given the per capita citrus and orange juice consumption in developed Mediterranean countries and the recent consumption trend from concentrated juice to fresh juice, the processing industry in Turkey will be using an increasing quantity of citrus, and juice imports will also increase. Turkey has great potential for producing citrus fruits either for the fresh market or for juice production. Far-reaching structural changes can come about if all opportunities are used. The private and the public sectors must act together if Turkey is to be a main player in the Mediterranean area.

Conclusion

Turkey is undergoing dynamic transition and could serve as a reference for many other countries in the Mediterranean basin. Since the mid 1990s, its agro-food supply chains, including the agro-food industries, have been developing tremendously, and rapid globalisation, consolidation and modernisation have also been observed, particularly in the midstream and downstream segments of the value chain.

Although domestic production has increased considerably in many agro-food sectors including wine and citrus, Turkey has started to import food products and will be a major market for many of the items produced in Mediterranean countries including citrus, wine and even olive oil if the country's recent economic growth continues. At the same time, this country has also been increasing its exports, especially to neighbouring countries. It is a good example for other Mediterranean countries.

The strategies of Turkish agro-food firms vary according to food product or food product category. For example, firms in the wine and olive oil industries have focused on vertical integration, product differentiation (place of origin and intrinsic attributes) and distribution – alternative marketing channels (boutiques, e-commerce and export market diversification). Although collective action is very weak at the upstream level of the citrus industry, activities to promote exports including the government inspection and coordination measures have played a significant role in the export field. As a result, there has been a considerable increase in Turkish citrus exports to the Balkan States and to Eastern and Central European countries such as the Russian Federation, Ukraine and Romania since the mid 1990s.

Recently, quality and safety have become important dimensions of food production, and citrus firms are gradually adopting such production systems. The scale of production systems, the fact that their adaptation to new standards such as GlobalGAP and organic agriculture in the fresh produce sector is very slow, and the weakness of collective action are major issues that need to be addressed. Despite these problems, the geographic situation of the country (proximity to export markets) and the diversity of its products are assets that enable agro-food firms to sustain export operations and aggressively increase their export output.

Furthermore, the weak foreign competition due to border measures and quality policy on the domestic market concerning fruit and vegetables also allows agro-food firms to dedicate the bulk of their efforts to the domestic market potential. There are also other examples including apple, cherry and tomato productions, where firms are integrated

vertically from the production stage through to export, but they account for only small percentages of the total output of Mediterranean types of products. It can be said that further economic growth in Mediterranean countries will also create significant trade opportunities amongst the various countries for either fresh or processed agro-food products.

Although the trend on both the domestic and the foreign market is towards greater consumption of processed agro-food products, the agro-food industries are developing sophisticated systems to control post-harvest operations, storage, transport and distribution facilities, which are important segments of the agro-food supply chains as a whole.

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Annex 1 - Characteristics of some of the most important food and beverage firms in Turkey (2009)

Name of firm	Food product categories	Accomplishments	Employees	Turnover (million TL)
Unilever	Ice cream, soup, margarine, seasoning, tomato ketchup	Unilever was established in Turkey in 1953. It has three main production branches covering food and ice cream and home and personal care products. The company sold the Komili olive oil brand to Ana Gıda in 2008.	4,530 (7 plants)*	2,900*
Pinar	Dairy products, delicatessen products, fruit juice, ready-to-serve dishes, cheese, sauces & seasonings, frozen sea food, desserts, water	Pinar was founded in 1975. It is the first private sector milk factory in Turkey. In 1984, it started to bottle spring water as the first to bottle water in Turkey. In 1985 it opened the first private integrated meat plant in Turkey. In 1997 it introduced turkey meat products to the sector. According to an AC Nielsen survey using 2006 data, Pinar is the market leader in milk (27%), meat balls (15%), salami (31%), hotdogs (31%), frozen meat products (84%), cream cheese (42%) and mayonnaise (21%).	Over 4,000	2,600**
Ülker	Biscuits and chocolate	Ülker was established in 1944 with the <i>Ülker</i> brand. Anadolu Gıda was established in Ankara as a public company. Group companies were gathered under the Yıldız Holding in the 1980s. The <i>Ülker</i> brand entered the market in the margarine, vegetable oil and industrial oil sectors in 1992. Pendik Nişasta (starch) was founded in cooperation with Ceresstar, the largest starch producer in Europe in 1993. Ülker began operating in the chewing gum, ready-to-cook soup and culinary supplement areas in 2000, in the soft drink area in 2002, and then in the baby food area by establishing a partnership with the company Swiss Hero in 2003. Within the same year, the first bottled UHT milk, ice cream and Turkish coffee production was launched. A partnership was established with the world's giant company Kellogg's in breakfast cereals. Yıldız Holding acquired Godiva, the world's leading premium chocolate and chocolate products brand at the end of 2007. The holding formed a 50/50 joint venture with Gumlink in the field of non-chocolate confectionery and with the Continental Confectionary Company in the chewing gum field in 2009. It has a 33% share in Bizim Retail Markets and bought the Şok Retail Market shares from Migros in 2011.	Ülker Biscuits Manufacturing Inc.: 1,254 Ülker Chocolate Manufacturing Inc.: 702	1,190*

Annex 1 - Contd.

Name of firm	Food product categories	Accomplishments	Employees	Turnover (million TL)
Danone-Tikvesli	Fresh dairy products (milk, yoghurt, cream, pudding), water (mineral water & natural spring water), baby foods, medical nutrition	The firm entered the water market with Danone Hayat Inc. in 1997 and Tikvesli Gıda (dairy products) in 1998. Apart from its strong dedication to dairy products, it has been acting through Numil Inc. in the baby and medical nutrition market since the end of 2007.	1,350 (7 plants)	
Cargill	Cocoa and chocolate, culture and enzymes, aromas, functional systems, health food, fruit juices	Cargill was established in 1960. It has three main branches: starch and starch-based products, cereals and oil-seed trade, and financial investments. Cereal warehouses and harbour facilities in Yarmca in partnership with Rota Denizcilik and Ticaret Inc. in 1999. It bought Ceresstar in 2002.	> 280 (5 plants)	1,000**
Nestlé	Coffee and Coffee Mate, chocolate, chocolate-flavoured milk, water, cereals, ice cream, soup, seasonings, performance foods, baby foods, pet food	Nestlé served the first baby food in the world in 1875 on the Turkish market. It opened its first store in Istanbul Karaköy in 1909. It established the first chocolate plant in Turkey, serving the first cream chocolate Chokella in 1968, the first Nescafé instant coffee in 1984, the first Nesquick dry chocolate beverage mix in 1986, the first Coffee Mate coffee cream in 1989, the first Nestlé Kids nutritious milk in 1996 and Nescafé 3 In 1 instant coffee in 2002. It entered the water sector with Nestlé Pure Life brand in 2001 and it became number one in the water sector by consolidating with the Erikli bottled water brand in 2006. Nestlé is the leading company in the instant coffee, coffee cream, breakfast cereals and dry chocolate beverage mix categories and comes second in the other categories. It incorporated the Novartis Medical Nutrition Unit in 2007.	5,000 (6 plants)	1,000*
Sütaş	Dairy products, baby & child products, health products, fresh milk desserts	Sütaş was established in Bursa in 1975. It has a distribution fleet of 1055 vehicles for 78 000 selling points. The company runs courses for farmers on how to enhance efficiency and improve quality and safety. It also has a farm where it grows feed grains and a factory for processing them.	2,669	621*
Eti	Cookies and wafer bars, crackers and cereals, cakes and pies, health and high-fibre biscuits, light products, chocolate bars, baby food	Eti began production in 1962. In 1969, ETİ Cicibebe, Turkey's first digestive/high-fibre biscuit, began to be produced and marketed. In 1976, the firm started to produce ETİ Cicibebe, the first baby biscuit, an important product for baby nutrition. In 1978, ETİ Machinery Industry and Commerce Inc. was founded in Eskişehir to design, manufacture, install and provide comprehensive service activities for Eti's machinery under one roof. In 1980, Tam Food Manufacturing and Commerce Inc. was founded and started to produce cakes. In 1995, it became the first company to train merchandising staff. It produced the first gluten-free biscuit for coeliac and phenylketonuria patients as part of the company's social responsibility efforts.	3,600	

Annex 1 - Contd. (2)

Name of firm	Food product categories	Accomplishments	Employees	Turnover (million TL)
Keskinoğlu	Chicken meat products, eggs, olive oil, pullet breeding products, natural fertiliser, organic fertiliser	Egg-laying processes started with miniature poultry in 1963. In 2000, automatic 10-floor poultry houses became part of the activity in order to produce eggs in a highly mechanised system. The first and only natural feed processing stock was put into service in Turkey for egg production in 2002. In 2005 the company began to produce olives, olive oil and soap under the <i>Ravika</i> brand. In 2007 the company proved to be the only producer that increased the shelf life for chickens from 9 to 11 days.	2,500	500
Frito-Lay	Corn chips, potato crisps, snacks	Frito-Lay started production in Turkey in 1993. The firm uses 70% of the industrial potatoes grown in Turkey. It engages in contract farming involving 3,500 ha and has recently increased production capacity by 24%. It has 10 distribution centres.	2,800 (2 plants)	
Tamek	Tomato paste, canned vegetables, parboiled products, pickles, sauces, ready-to-serve dishes, jam & marmalade, ketchup & mayonnaise, fruit juice	The company was founded in Bursa in 1955, producing ketchup and tomato juice for the first time in Turkey. In 1959, the first ready-made dishes were produced. The first fruit juice was produced in 1963. In 1992, Tamek produced the first diabetic jam in Turkey. It also produced the first canned food without additives. It has 4 plants – 2 in Bursa, 1 in Balıkesir and 1 in Manisa.	873	227.6
Barilla	Macaroni, noodles, tortellini, lasagna, sauces, hardtack bread, crackers	Barilla Food Inc. was established in 1974 in Bolu as an incorporation of the Doğuş Group and it was called Filiz Food to begin with. It has been a leading company since it went into partnership with the world pasta giant Barilla (Italy) in 1994. It changed the company name to Barilla in 2008. Barilla Turkey distributes its products in 34 countries.	420	225**

Annex 1 - Contd. (3)

Name of firm	Food product categories	Accomplishments	Employees	Turnover (million TL)
Super Fresh Kerevitas	Frozen products (fruit & vegetables, potatoes, breaded products, dough products, meat products, seafood products), Canned products (tuna fish, corn, mushroom, garnish) (a total of 43 products)	Super Fresh Kerevitas was established in Bursa in 1970 and is Turkey's leading company in the retail frozen food sector. It began to produce frozen fruit and vegetables in 1980. It became the first company to enter the retail market with a wide range of fruit & vegetables, seafood and pizza varieties in 1990 with its <i>SuperFresh</i> brand. In 1993 it introduced canned tuna on the market. In 1994 it started to produce canned corn. It carries out production in five main sectors (fruit & vegetables, potatoes, flour-based products, tuna fish, and seafood).	1,117	177.5**
Besler	Macaroni, noodles, semolina, ravioli, flour, olive oil, vegetable oil, soap, olives, pulses	Besler was established in Gaziantep in 1992 with flour production. In 2004, it founded a macaroni factory, and in 2006 the company bought Ülfiyet, one of the oldest vegetable oil factories in Turkey. It accounts for 15% of Turkey's flour exports. The Besler Group has launched the A La Turca Macaroni Restaurant chain in order to boost macaroni consumption in Turkey.		156.5*
Kraft Foods	Chewing gum, candy, coffee, chocolate, savoury snacks	Kraft entered the Turkish market after buying 50% of the MarSA shares in 1993. Kraft Food Inc. was established in 2001. Kraft Turkey bought Kar Food in 2002 and the biscuit unit of the Danone Group in 2007.		150*
Ana Gıda	Olive oil, corn oil, sunflower oil	Ana Gıda was established in 1950. <i>Komili</i> is the leader brand in its sector with a market share of 28%. In 2010, Ana Gıda bought the <i>Komili</i> production business from Yüdüm and the <i>Komili</i> distribution and sales units from Unilever. During the last quarter of 2010, sunflower oil and corn oil were launched on the market.	128	130.3**
TuKaş	Tomato paste, canned products, pickles, jams, sauces (ketchup, mayonnaise, hot pepper sauce), frozen products	TuKaş was founded in 1962 in Bursa. It was bought out in 1967 by OYAK, the Armed Forces Pension Fund (OYAK still retains 82.5% of its shares). In 1984, a new factory was founded in Torbalı. In 1994 TuKaş's shares were offered to the public. The Manyas factory was bought in 2001, and TuKaş entered the "frozen products" market and started to produce frozen fruit & vegetables in Manyas in 2003. In 2008, a new tomato paste plant was added to Torbalı Factory in order to increase production. TuKaş manufactures out of Torbalı-Izmir and Manyas-Balıkesir.		129,8
Aynes	Dairy products	Aynes started production in Denizli in 1997. The company has a distribution fleet of 134 vehicles. It provides training on stock farming and stock breeding for 20,000 families, especially for women farmers. It has 10 regional distribution offices.	546	120*

Annex 1 - Contd. (4)

Name of firm	Food product categories	Accomplishments	Employees	Turnover (million TL)
Aytaç	Frozen meat, processed meat, dairy products, vegetable oil, olives, juice nectars, spring water, confectionery products	Aytaç was founded in 1993. It is an integrated meat plant incorporated with the World Bank participation – one of the largest integrated investments in the world. Its facilities include all operations (from the very beginning of the process) such as animal feeding, preparation for slaughter, slaughtering, production and delivery of ready-packaged meat and meat products. All of its products are 100% halal. Aytaç holds a 12% share of the processed meat market in Turkey, according to IPSOS (KMG) data.	1000	111.4*
Penguen	Preserved vegetables, tomato and pepper pastes, pickles, ready meals, frozen food, fruit preparations, dried candied fruits	Penguen was established in Bursa in 1989. It entered the domestic market with its own brand, taking the first step towards brand promotion in 1996. With plant, machinery and warehouses designed to meet European standards, the company has grown tenfold in 20 years. In 2001, DEG, a German investment institution, became a Penguen shareholder owning 12.74% of its shares.	160	62.3
Dardanel	Seafood products, frozen seafoods, canned fruit & vegetables, frozen fruit & vegetables, frozen pastry, fish oil & flour, pet food	Dardanel was established in 1984. It started to produce seafood products under the <i>Dardanel</i> brand in 1985. It also produced frozen sea snails for the first time in Turkey in 1985 and exported the product to Japan. Frozen fruit and vegetable production and canned tuna fish production began in 1986. In 1991 the firm started producing frozen pizza for the first time. In 1998 it produced pet food. In 2007, for the first time, tuna fish was marketed in glass jars. Ready-made dishes and salads were produced in 2008 using easy-peel technology. Through extensive dedication to private labels produced for supermarkets, Dardanel now holds a market share of 90% in the canned tuna fish sector.		62

Note: *2009 and **2010.

Source: Compiled by author from firms' Web pages, CEO press conferences and explanations.



TRADITIONAL MEDITERRANEAN PRODUCTS: MARKETS AND LARGE-SCALE RETAIL TRADE

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Mediterranean food is being consumed less and less in the Mediterranean region and more and more in other parts of the world. This alarming fact, which has been observed by many researchers and professionals (Rastoin, 2009; Abis, 2009), illustrates the challenges of restoring the Mediterranean Diet to its region of origin.

For, in the wake of the drift from the traditional dietary pattern that is the aftermath of the globalisation of high-calorie, high-fat agro-industrial products, pandemics are gradually emerging that are potentially very costly in human, social and economic terms. In the Mediterranean countries in particular, we are faced with an alarming paradox, since the Mediterranean Diet, which used to be the fundamental food pattern and which the World Health Organisation (WHO) regards as a nutritional standard (Padilla, 2009), is gradually disappearing to the advantage of the “western” dietary pattern due to major socio-economic changes – growing urbanisation, decreasing household size, a growing number of working women, and so on.

Public policies are thus imperative if the Mediterranean Diet is to be rehabilitated and must be based on measures to promote local traditional products rather than on the medicinalisation of foodstuffs that is recommended by multinationals (Rastoin and Cheriet, 2010). What is more, this policy has the considerable advantage of boosting or creating competitive agro-food industries, which generate sustainable local development that is built on an inventory system, upgrading through innovation and protection of local products.

The present paper aims to analyse the market potential of traditional Mediterranean products, the preconditions for promoting those products and the role that the modern distribution sector can play in developing them.

It is divided into three sections. The first will present a review of the literature on the marketing of local specialities and in particular on the role played by information in consumer choices. The second part will endeavour to describe the needs of potential clients and in particular those of the large-scale retail trade. The formulation of

recommendations in the last section will be based on the literature and on case studies conducted in France, Morocco and Tunisia.

Traditional products: from construction to information

Analysis of the position of traditional Mediterranean products on the various markets will provide a basis for identifying the main avenues for adapting these products to clients (purchasers and consumers) and to direct and indirect competitors.

There are two major difficulties which arise in the marketing of traditional products (or regional specialities). On the one hand there are the consumers, who perceive these products as being outside the commercial sphere and non-marketed, and on the other hand there are the producers – often small businesses – who are convinced of the quality of their products and consider that marketing is not their problem (Fort and Fort, 2006). Yet adapting products to the market forms the core of all marketing strategies.

Marketing involves identifying needs and trying to meet them. However, in societies where basic needs are satisfied it is a question of satisfying psychological needs, i.e., consuming symbols (Gabriel, 1997) and marks, which only have meaning in the social system of which they are an integral part (Baudrillard, 1970). Marks are a means of communicating a value or affiliation but also differentiation, which make the individual a unique human being in the social system (Gabriel, 1997). The theme of the genuine product (Camus, 2004) or local/regional speciality is thus a series of marks with which symbolic differences can be made and differential aspirations can be satisfied.

Consumers generally consider so-called “regional” or “local” food products to be “better quality”, more “natural”, “traditional” and “genuine”, even if in some cases the fact that manufacturers have exploited local areas means that they are not actually the genuine articles they are supposed to be (Warnier, 1994; Cova et Cova, 2001; Camus, 2004). Research on consumer behaviour generally endeavours to identify the influence of certain variables and to understand the decision-making process leading to a purchase. When a consumer chooses a product with a number of attributes, this choice is the result of various stages in the procedure of processing the data available.

Given the huge choice of food products available, the need for information is felt when items are being selected from the shelf in a store or on a vendor’s stall. The consumer seeks guidance which will minimise his cognitive effort. The brand name, quality mark or label can play this role of summarising information, which facilitates the consumer’s choice.

The new expectations of Mediterranean consumers

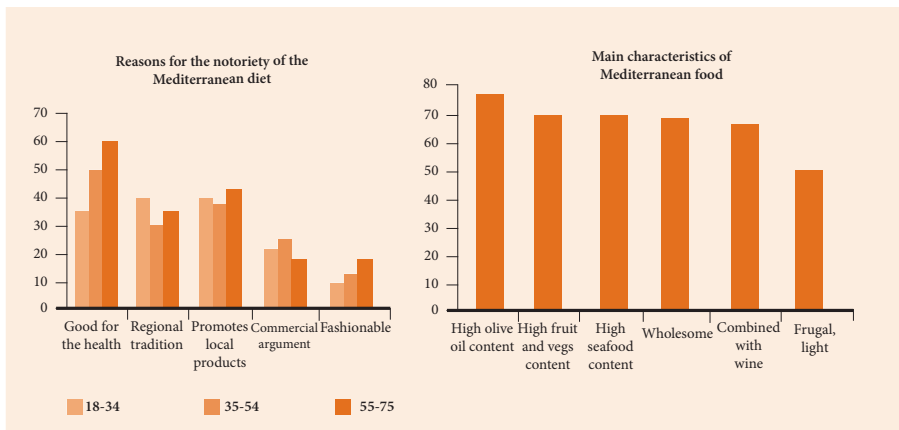
Analysis of food consumption trends in industrialised countries shows that a consumer is emerging who is torn between low-cost products (given the purchasing power crisis) and ethical concerns, which encourage him to make meaningful purchases (responsible consumption, fair trade, local products, etc.). This excessive emphasis on consumer responsibility (Figué and Bricas, 2009) also elicits a strong feeling of injustice and a total split between the consumer’s consumption practices and his commitment.

Major dietary upheavals are now taking place in developing countries, and more specifically in the southern Mediterranean region. As the result of numerous socio-economic factors (higher purchasing power, urbanisation, employment of women, access to western media and the desire to adopt a western lifestyle), Mediterranean city dwellers' food consumption is becoming industrialised and, more specifically, consumers are inexorably departing from the Mediterranean Diet in favour of industrial products of poor nutritional quality (Abis, 2009; Padilla and Abis, 2007; Rastoin, 2009; Van Diepen *et al.*, 2009; Rodrigues *et al.*, 2008; Alexandratos, 2006).

Whereas the notoriety of the Mediterranean Diet is well established in industrialised countries, it is little known in the Mediterranean region. Van Diepen *et al.* (2009) show that the dietary pattern of Danish students is more Mediterranean than that of their Greek counterparts. Rodrigues *et al.* (2008) also show that adherence to the Mediterranean Diet is very low throughout Portugal.

Chart 1 shows that the population of the Languedoc Roussillon region, and more specifically older people, recognise the connection between the Mediterranean Diet and health. The connection between Mediterranean food and local products is less pronounced, however. Similarly, olive oil and fruit and vegetables, i.e. a relatively small share of traditional Mediterranean products, are those perceived as having the closest connection with the Mediterranean Diet.

Chart 1 - How the Mediterranean Diet is perceived in the Languedoc Roussillon region (in % of respondents)



Source: Baromètre santé nutrition (2008).

Building a Mediterranean label (Rastoin, 2009) would thus appear to be a more suitable approach for the European and western market but of little relevance for consumers in the southern Mediterranean region. Furthermore, the territory covered by the “Mediterranean” label seems to be rather limited and does not allow all traditional Mediterranean products to be included.

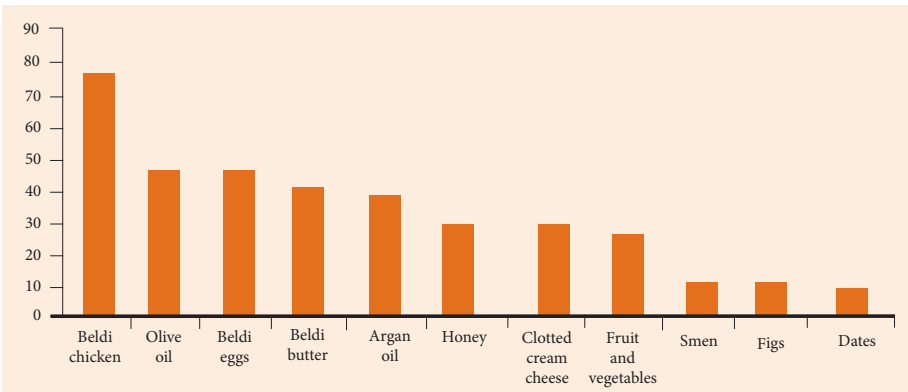
For local markets, the sale of traditional products will thus have to rely on other types of information and quality mark based on traditional, regional and local characteristics.

Measures to develop a local market for traditional products will thus benefit the large-scale retail trade in the southern Mediterranean countries and promote its development.

Examination of the main regional products consumed by Moroccans (Hamimaz, 2009) reveals that none of them is attached to a particular local area (Charts 2 and 3). They are traditional products rather than products specific to a region or area. Foreign tourists consume products that are typical of Morocco in general rather than of a specific geographical area of the country.

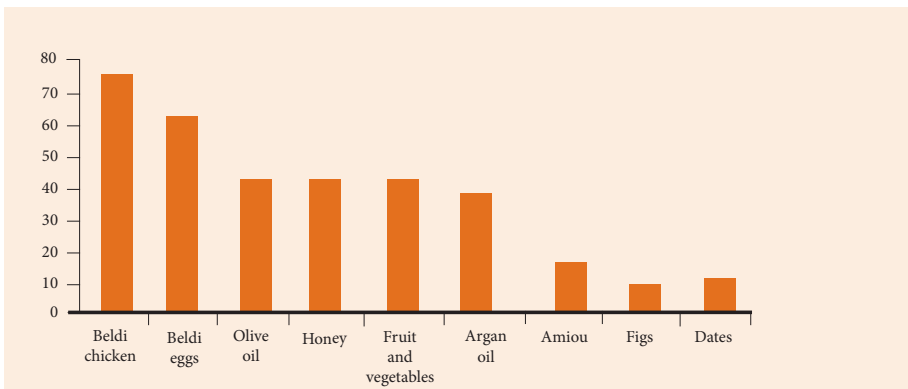
It thus transpires that, for Moroccans, regional products are traditional products that are recognised by age-old production processes and are strongly rooted in “rural areas”. The marking of these products on local markets will thus have to place greater emphasis on this link with tradition and culture than on any specific geographical origin.

Chart 2 - The main typical products consumed by Moroccans (in % of respondents)



Source: Hamimaz (2009).

Chart 3 - The main typical products consumed by tourists in Morocco (in % of respondents)



Source: Hamimaz (2009).

The role played by the large-scale retail trade in changing food patterns

Although it is difficult to measure the direct effect of the structure of manufacturing firms' and distributors' supply on changes in dietary patterns, it is easy to demonstrate that they have significant influence (Tessier *et al.*, 2010). In France, for example, a parallel can easily be drawn between the evolution of the large-scale retail trade and the development of mass consumption (Daumas, 2006). The development of the large-scale retail trade in the emerging countries began in the 1990s and went through three main phases: phase 1 concerned Latin America, Central Europe and South Africa, at the beginning of the 1990s, phase 2 ran from the mid 1990s to 2001 in South-East Asia, Central America and Mexico, and phase 3 concerned China, Vietnam, India, Russia and Africa (except for South Africa), running from the end of the 1990s to the early 2000s (Reardon *et al.*, 2010).

The spread of the trade followed virtually the same pattern everywhere, stores opening first in the vicinity of major cities and then also developing in medium-sized and small cities and towns, thus gaining access to increasingly poor segments of the population. The range of products offered broadened out from highly processed and imported goods to very fresh local produce. And lastly, purchasing was carried out by wholesalers and wholesale markets to begin with; preferred suppliers were then established, and this setup was then followed by a centralised purchasing system and the establishment of private standards.

The large-scale retail trade started in the Mediterranean countries in 1999-2000, and its development is likely to be similar to that described by Reardon *et al.*, (2010). Table 1 presents the current situation in the modern distribution sector in Morocco.

Table 1 - The food distribution system in Morocco

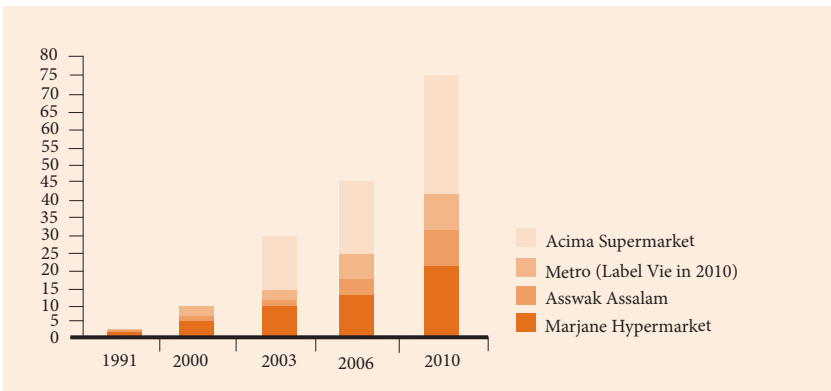
Type of store	Number of sales points	Location
Large supermarkets (12 to 32 cash desks, over 500 parking spaces and a floor space of over 3,500 m ²)	44	Casablanca (7); Marrakech (6); Rabat (4); Agadir (4); Tangier (4); Fez (3); Oujda (3); Kenitra (2); Salé, Meknes, Mohammedia, Tetouan, Temara, Safi, Saidia, Essaouira, Nador, Khouribga, and Beni Mellal (1)
Small supermarkets and local stores (2-3 cash desks 100-1,000 m ²)	270 (70 SuperMs and 200 corner stores)	Casablanca (188); Rabat (17); Marrakech (20); Agadir (11); Meknes (6); etc.
Hannouty (franchised chain – 1 cash desk, 20-120 m ²) and (small) privately owned grocery stores	150	Mainly in Casablanca and Rabat
Local grocery shops	49,580	Mainly in the major cities

Source: Ahmed and El Honsali (2010).

The following comments can be made on the development of the large-scale retail trade in Morocco (Chart 4):

- Although Marjane created the first supermarket in 1991, it was not until the early 2000s that the trade really got off the ground with the arrival of Foreign Direct Investments (FDI), effected mainly by the Auchan group.
- Supermarkets developed in the major cities to begin with, but they soon spread to smaller towns and were operated by local groups and the hard-discount sector.
- The FDI share is relatively low (if one excludes the major project launched by the Turkish discounter BIM, which plans to open 200 stores in three years).

Chart 4 - Progression of the number of supermarkets in Morocco



Source: *Chohin-Kuper and Doukkali (2006)*, data complemented by *Ahmed et El Honsali (2010)*.

Furthermore, the launching strategy aimed primarily at low prices, and the stores were unattractive. Today competition is forcing retailers to position themselves in relation to competitors so that there is now more emphasis on quality, as is illustrated by the current renovation work in all stores belonging to the Marjane/Acima group to facilitate shopping.¹

Supermarkets in Morocco enjoy a favourable consumer image and are perceived to offer products with fewer health risks, as is shown in Chart 5.

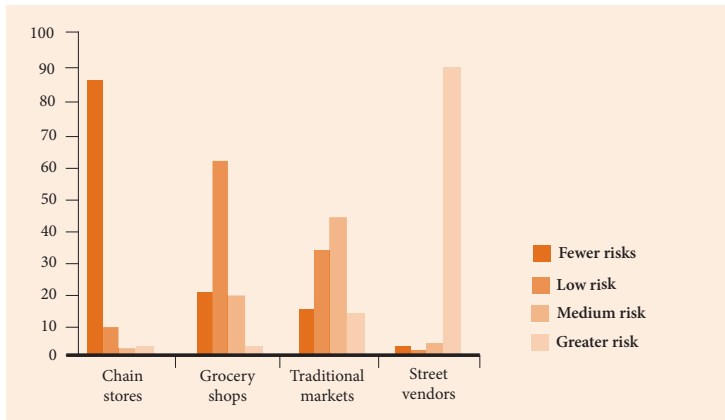
In Tunisia, the rapid development of the large-scale food retail trade has been even more spectacular with a market share rising from 12% in 2006 to 20% in 2010, and the pace at which new stores are being opened suggests that it will reach the 40%-50% mark by 2016.

The fact that Tunisians have means of transport is a further vector for the development of the food trade: 71 private cars per 1000 inhabitants (compared to 53 in Morocco and 30 in Egypt).² Carrefour, Géant Casino and Système U were the first French retailers to enter the market in Tunisia. Numerous groups of local investors are also in the running, such as the Mabrouk and Chaabi groups and the Bayahi/Poulina consortium (Table 2).

1 - *L'Économiste*, 17 March 2011, consulted on 31 March 2011.

2 - *www.kapitalis.com*, 19 November 2010, consulted on 31 March 2011.

Chart 5 - Evaluation of the risk perceived by sales point (in % of respondents)



Source: Beloued (2009).

Table 2 - The main retailers in Tunisia

Retail chain	Proprietor	Number of sales points	Main sites
Carrefour HyperM	UTIC-Ulysee and Industrial Compagnies Group (80% Chaabi Group and 20% Carrefour)	43 (1 hyperM and 42 Carrefour Markets)	Tunis Sousse and Sfax
Géant HyperM Monoprix SuperM	Mabrouk Group (licensed to use the Casino trade name)	81 (1 hyperM and 80 SuperMs)	Tunis Major cities
Magasin General Group Promogros	Bayahi and Poulina	66	Main cities

Source: Ahmed and Chahed (2009).

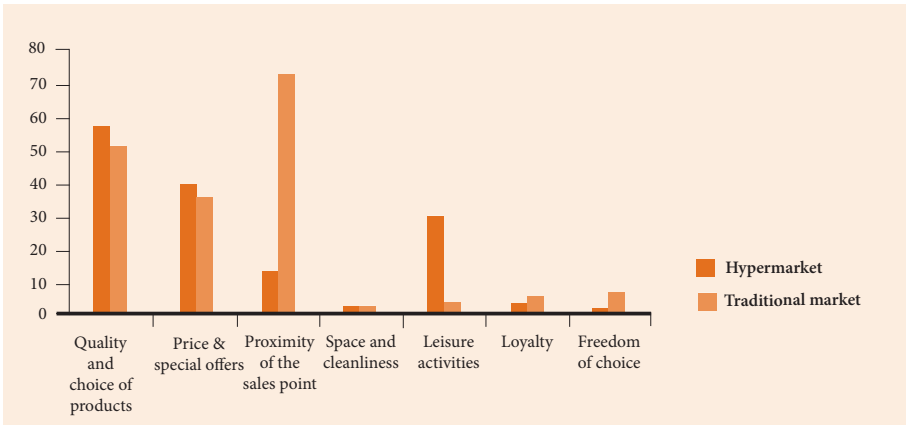
There are numerous grocery shops and open-air markets in Tunisia, which are still the predominant sales points for daily purchases. Consumers use food hypermarkets and supermarkets mainly for weekly or monthly shopping and choose chain stores mainly for product quality and the wide choice of goods (Chart 6).

The development of the large-scale retail trade in the southern Mediterranean countries is clearly inexorable and the sector will soon be the main distribution channel for food products. Traditional and other products will be purchased more and more at chain-store sales points, and this raises a number of paradoxes, which must be resolved if traditional products are to be promoted through this distribution channel.

Consumers who buy traditional products seek the authenticity, tradition and typicality that are perceived in products specific to particular regions or areas (Aurier *et al.*, 2004; Hamimaz, 2009). In France these products are strongly linked to the traditional “farmers’

market” type of distribution channel, where producers sell their produce directly to consumers; the presence of these regional products in supermarkets is considered to denature them. The fact that products are rooted in tradition and culture must therefore be highlighted on supermarket shelves even more than elsewhere through marks (brand names, labels, designations, etc.) but also by means of other extrinsic attributes.

Chart 6 - Why consumers choose the various types of sales points in Tunisia (in % of respondents)



Source: Tessier et al. (2010).

The action to develop traditional products in the emerging countries is generally aimed at export markets, since it is considered that only foreign markets offer an opportunity to develop this type of product and that in the mass production field the emerging countries are not competitive in terms of price. We are of the opinion, however, that, given the changing dietary patterns, the established effects of food on health, the prices of raw materials and the development of tourism and the modern distribution sector, the local market now offers interesting prospects for developing traditional products.

Traditional product markets

Traditional forms of trade do not disappear with the advent of large-scale distribution chains – some researchers have even observed a revival of local and farmers’ markets in industrialised countries such as France and the US (Laisney, 2011). And they certainly are not disappearing in the Mediterranean countries, where trading is an “art” and the social and spatial forms of the marketplace, the souk, continue to thrive (Mermier and Peraldi, 2011).

As regards purchasing food products, the local market or souk is still the preferred venue of many households on the southern shores. These markets are generally supplied either directly by the producers themselves or by wholesalers through wholesale markets. The advent of the large-scale retail trade can be a vector for developing and organising the various food chains, as previous research work has shown (Reardon *et al.*, 2010), for the sustainability of traditional product production systems is closely related to the

added value generated by the sale of the products for all of the actors in those chains. It is a major pillar of the virtuous circle (FAO, 2009).

Under the auspices of the FAO, and with FAO funding, many countries have studied the potential for developing certain local products. And in the Mediterranean region countless projects have been launched – in Morocco, Algeria, Tunisia, Lebanon, Turkey, etc. – to promote regional-speciality products. In many cases the goal is for these projects to conquer export markets in the medium or long term.

We consider that this gearing to the export market needs to be reviewed in view of several trends:

- the issues at stake in sustainable development are prompting consumers to adopt a “local” consumption pattern – to become “local-food fiends” in both North and South;
- the improvement of the purchasing power of local consumers is prompting them more and more to seek quality products that are wholesome and respect the environment;
- the development of the local large-scale retail trade is leading to centralised purchasing, which can be seen as an alternative to exports;
- the inevitable rise in energy costs is making it necessary to seek to shorten the distances travelled by food products.

All of these factors are arguments for giving precedence to local markets. Particularly since the performance of traditional product production systems depends mainly on interaction with local consumers, “experts”, who will prompt producers to maintain perfect product quality and to propose coherent and relevant innovations.

Adapting traditional products to the large-scale retail food trade

If the large-scale retail trade is to develop it must necessarily aim to organise purchases on a mass-market scale in order to achieve the economies of scale that are necessary to enhance competitive position (Reardon *et al.*, 2010). This results in:

- the centralisation of purchases (creation of purchasing pools and consolidation warehouses),
- the improvement of logistics (standardisation of pallets and transport and warehouse management),
- the purchase of supplies direct from producers (*preferred suppliers*),
- the establishment of standards and terms of supply (specifications, delivery schedule, etc.).

A retail chain bases its choice of supplier on two factors: 1) the goods needed – depending on the firm’s product policy; 2) the supplier’s visibility in terms of reputation and competence. In the large-scale retail trade purchasing is done in two phases. The first consists of referencing the supplier, and the second concerns the purchasing per se,

which depends on the orders received from the various sales points (Filser, 1989). The role played by the purchasing pool in building up the store's assortments of goods varies according to the strategy and legal structure of the chain (integrated legal entity or non-integrated) and allows department managers varying leeway for procuring supplies direct (Daumas, 2006).

Indeed most retailers have developed private brands, which were modelled on leader brands to begin with according to the "me-too product" principle but soon developed with the offer of specific ranges to certain market segments such as the organic product, health product or regional product sectors. These private brands are a major source of profit margins and customer loyalty as the result of a price squeeze policy, and they are also perceived by consumers as a factor that boosts retailer legitimacy with regard to certain social topics such as organic/biodynamic production, regional-speciality products or fair trade (Beylier *et al.*, 2010). If a retailer is to agree to include traditional products on the shelves there has to be a demand on the local market and both the products and the producers must be visible. Research that has been conducted in many countries shows that consumer attitudes to local, traditional or regional products are favourable (Aurier *et al.*, 2004; Hamimaz, 2009). So the visibility of the products and their suppliers must be enhanced through the brand connected with the retailer (the private brand) or the collective brand.

The preconditions for the success of Geographical Indication (GI) products in supermarkets generally concern the organisation of the chain and the structuring of supply. The Agen prune example described by Carpenter and Petzold (2010) (Box below) provides a means of identifying the preconditions for the success of this GI product in French supermarkets.

"Regional speciality" branding

Marketing researchers agree that marks serve as a guide for assessing the quality of a product. The purpose of these marks is to reduce the risk perceived on purchase and to compensate for the consumer's lack of expertise and of commitment. The quality marks most widely used are brand, price, physical appearance of the product, product reputation of both the product and the store, and the guarantees offered.

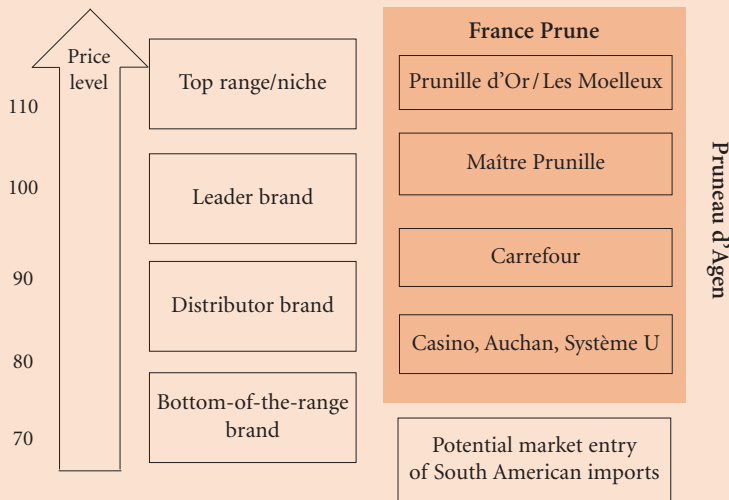
Practitioners and researchers consider that the brand is the best means of highlighting the quality of products and differentiating them from those of rival firms. Although legally a brand is any mark which distinguishes a firm's range of products, it is only of value in terms of economic efficiency if it achieves "exclusive, positive and outstanding significance in the minds of the majority of customers" (Kapferer, 2000). Building up the semantic identity of a brand is often a lengthy and costly process. Faced with major brands on most markets, small agro-food firms have to find a way of differentiating themselves other than through a brand.

Highlighting the specific quality of products is one means of building up competitive advantage. The branding of traditional products must emphasise their specificity (origin, tradition, label, recipes, know-how, etc.). It can be done in various ways – through the brand, the official quality mark or the staging of the packaging. For packaging is the primary vector of communication in the self-service environment. As far as traditional products

Example of Agen prunes in the large-scale retail trade

In an environment of strong competition for access to retailers' shelves in France given the growing share reserved for private brands, "Pruneau d'Agen" prunes, a Protected Geographical Indication (PGI) product, are managing to hold their own and to build the prune sector as a whole.

The "Pruneau d'Agen" PGI, which was obtained in 2002, meets a set of specifications requiring a sufficiently high level of quality to ensure a relevant and sustainable competitive position compared to the South American imports in particular (Carpenter and Petzold, 2010). The "Pruneau d'Agen" PGI label includes a variety of brands depending on retailer as illustrated below.



Source: Carpenter and Petzold (2010).

Typical "Pruneaux d'Agen" range of prunes presented in the large-scale retail trade

France Prunes, which is the hub of the industry, is a cooperative employing 700 people and accounting for 65% of French prune production; 90% of production meets the PGI requirements. It covers the entire price range through different brands. France Prunes owns two brands in addition to its private brands – Maitre Prunille, a leader brand offering "PGI", "Organic", "Fibre", "Pleasure" etc. varieties, and Prunille d'Or/Les moelleux, a top-of-the range brand with innovative packaging.

Carpenter and Petzold's analysis shows that the success of the brand is due mainly to the presence of a major actor who federates producers, implements the marketing strategy and offers a brand range that is adapted to distributor requirements.

are concerned, in addition to serving the usual functions of protecting and communicating, packaging must also provide a means of maintaining the traditional regional nature of the product. Research has shown that consumers who buy this type of product expect simple packaging that is not too sophisticated (Fort and Fort, 2006). And Camus' research (2004) also confirms that the authentication process is an integral part of communication techniques involving the staging of products on the shelf and the discursive use of the packaging through information on the origin, history, production methods, producer or labels, all of which are means of confirming the genuine nature of the goods.

Collective “regional specialty” branding

As regards collective marks for building quality, certain researchers consider that these marks fulfil the same function as brand names, despite the fact that they are very different in legal and economic terms. They add further value that is independent of the product value, that is to say, they add brand capital.

A collective brand is a brand used simultaneously by various firms (producers or processing firms) without necessarily owning it. It is a means of federating all of these firms by giving them common notoriety and a common image in consumers’ minds. There are two types of collective brands – the simple collective brand, which is owned by an association of producers and controlled by the association itself, and the collective certifying brand, which is owned by an independent entity which cannot use the brand, and a different independent entity is in charge of control.

Many initiatives have been launched in various regions in France (either by communities or by private firms) to build and promote regional collective brands (Box below) with a view to achieving a position comparable to regional private brands. The objective is threefold: 1) to improve brand visibility with wide range of products; 2) to offer stores turnkey concepts; and 3) to create a structure at the interface of collective brands. Regional collective brands play a crucial role as facilitators in the relationship between small producers and distributors, either as a simple commercial banner for ad hoc operations, or as a veritable guarantee of genuine traditional regional specialties. The strategies pursued by collective brands vary in particular with regard to the requirement that the producers should be established and the raw materials obtained in the region concerned. The negotiation of the specifications and the control and governance of these brands must be rigorous if the action is to be coherent and relevant – the only possible way to enhance the image of the brand and create brand capital.

The massive intervention of public institutions in the promotion of the products and services of their respective regions is now giving rise to regional marketing, which is somewhere between the marketing discipline and political science and which calls for new paradigms in the marketing concept.

Regional collective brands

Industrialists in many regions take up the challenge of uniting under a common brand. These regional brands have decided to club together to approach retailers, the aim being to improve brand visibility with a multi-regional range in order to propose turnkey concepts to stores and create a structure at the interface of collective brands. Examples are *Produit en Bretagne* (“Made in Brittany”), *Bravo l’Auvergne!* (“Well done Auvergne!”), *Bienvenue en Gourmandie* (“Welcome to Gourmetland”), *Produit en Limousin* (“Made in Limousin”), etc. There are now over 20 regional collective brands in France ranging from the “Made in Brittany” brand (1993) to the “Made in Limousin” brand (created in 2011). These associations of industrialists are determined to highlight their regional know-how in order to compete with the typical regional-specialty brands that retailers have launched as their own private brands – such as Carrefour’s *Reflets de France* (“Highlights of France”) or Leclerc’s *Nos régions ont du talent* (“Our regions have talent”).

Source: Razafinjoelina (2010).

Regional private brands

The principle of regional private brands is relatively simple. The retailer identifies a small or medium-sized enterprise (SME) in each region or area that is renowned for its know-how and competence and “subcontracts” the production of a regional specialty to that firm according to the specifications in effect (Protected Designation of Origin – PDO – or PGI or label) complementing those specifications with the chain’s own specifications. The various French distributors have developed their own regional brands such as Carrefour’s *Reflets de France* (“Highlights of France”), Leclerc’s *Nos régions ont du Talent* (“Our regions have talent”), Cora’s *Patrimoine Gourmand* (“Gourmet Heritage”) or Système U’s *Savoirs U* (“U Know-how”).

The strategy of these distributors on which the construction of the image of their respective private brands is based can vary. Some underline the locality of the private brand by working with local producers, while others highlight traditional recipes and know-how or the superiority and wealth of aroma and flavour.

The selection of regional private brand supplier is based on stringent criteria concerning product quality but also on the notoriety of the firm in its area. Audits are carried out by the retail group to ensure that the SME’s production equipment and capacities can be relied on to supply an impeccable product and service (Messeghem, 2005). SME-retailer cooperation is based on the pooling of skills – concerning organisation and innovation in the case of the SME and concerning marketing, merchandising and long-term commitment in the case of the retailer. Carrefour’s *Reflets de France* (“Highlights of France”) brand now has over 300 regional-speciality references in France and holds a dominant position on the regional-speciality market as a national brand whose brand capital is close to that of national brands (Fort, 2005). What is more, the SME-retailer relationship is exceptionally long in duration – there are actually very few terminations of contract (Messeghem, 2005). Sustainability of the relationship between the SME and the retailer helps to build new marketing skills through a learning process that is beneficial for the SME.

Case study in Morocco and Tunisia

Numerous projects have been launched in Morocco and Tunisia to develop GI products and have concerned mainly organising producers and drawing up specifications, GI governance, the role of public policies, etc. We shall now take a closer look at the process implemented to market those products, taking Moroccan argan oil, a product with high value added, and the Maltese orange in Tunisia, a staple, as examples.

The “*Argane*” PGI in Morocco

The argan forests of Morocco, which UNESCO has classed as a biosphere reserve, are a wooded region of 800,000 ha. Argan oil, which is renowned for its cosmetic and nutritional properties, is produced from the kernel of the fruit of the argan tree, a tree endemic to southern Morocco. It is known as “green gold” or “oil of a thousand virtues”, and the argan oil trade has grown dramatically. Almost 300 tonnes of the oil produced are exported per year, and argan oil is one of the most expensive on the market (almost €160 per litre). This treasure from southern Morocco was awarded a PGI in 2010 – the first to be awarded in Africa!

The Association Marocaine de l'Indication Géographique de l'Huile d'Argane (AMIGHA – Moroccan Association of the Argan Oil Geographical Indication) was created in January 2008; it is based on a structured cooperative sector and dynamic industrial firms. As an inter-trade body, the Association was able to carry the PGI project from the planning stage right through to the awarding of the geographical indication (2003-2010). Negotiations are currently underway between Morocco and the European Union for international mutual recognition and protection³. The “*Argane*” PGI is now operational and protected and can no longer be used to describe oil whose production does not comply with the specifications of the PGI; nor can the designation be registered as a trademark.

In order to use the designation, operators, and in particular cosmetics laboratories, must prove that they use only PGI-certified argan oil. Although the primary objective of the actors involved in this project was to promote sustainable local development, recent research has shown that poverty has not decreased in the region concerned and that the project has had little effect on the local population. The women's co-operatives – 56 cooperatives with a total membership of 2505 women (Conseil Général du Développement Agricole, 2010) – do not have any land for reforestation, yet the members' main aim is to produce oil in order to earn money (Romagny, 2010). Access to the raw material is thus becoming increasingly difficult. The PGI does of course guarantee that at least one stage in the production of the oil is carried out in the argan forests, but this is already the case with the gathering of the fruit and crushing of the nuts. Furthermore, the product has been built up mainly on the basis of Northern consumer and tourist demand, a fact which removes this “pure”, “sterilised” oil from the traditional family edible oil it claims to be.

There are currently about 40 industrial companies marketing their production outside the argan forest area (and 60% of production is for export). The largest private oil production units are in the vicinity of the major cities, outside the PGI area. They have developed brand names based on the image of the natural and traditional production methods in Morocco. The developers have succeeded in uprooting and denaturing the product by continuing to present it as a product which is local, natural and traditional and which is based on ancestral know-how (Simenel *et al.*, 2009). The PGI is scarcely mentioned on the websites of these companies or in the brand names. The fact is that the bulk of the value added does not remain in the PGI area.

In addition to these economic aspects, researchers are alerting opinion to the fact that argan trees are gradually being destroyed as the result of over-harvesting in order to meet growing demand. The advent of the PGI has resulted in depleted supply on the local market, and local consumption of argan oil has virtually stopped except within the family circle of right holders. The retailers, in particular the Marjane group, have opened negotiations with certain cooperatives with a view to obtaining supplies.

3 - M'Barek Chbani, *Libération*, Thursday 13 May 2010.

Home-craft and regional-speciality operation in the Marjane group in Morocco

The Marjane group has been involved in a programme with the Moroccan Ministry of Agriculture for over a year aiming to assist the producers of regional specialities. The group has recruited a staff member who is in charge of monitoring and developing relations with producers. The operation has been launched in three stores in three regions – the east, centre and south of the country, the objective of this country-wide operation, which, for the time being, concerns argan oil and argan-based cosmetics, honey and saffron, being to give these products visibility on the shelves of the Marjane stores. The partners are producer cooperatives, with which the group has agreed to distribute a certain quantity of the products concerned, which are sold under the cooperative’s own brand. The specifications are very flexible and do not require any certification or quality mark. In order to improve labelling and affix a bar code the group has handed over some of its own codes, which the cooperative can use directly on its products. Invoicing and payments are the areas where the main difficulties are encountered by the cooperatives in these partnerships, since they are unable to adapt to the retailer’s requirements. The chain is also speeding up payment in an effort to come closer to direct sale conditions.

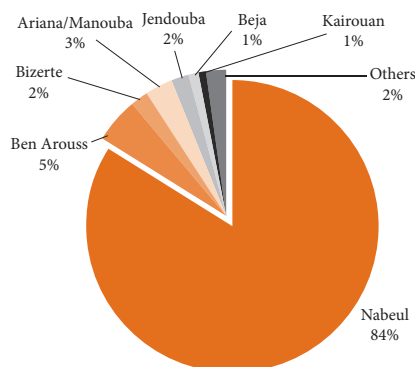
These products present extremely well in the stores and are proving a great success with customers, and a home-craft and regional-speciality operation is currently underway in the stores concerned with a view to further enhancing their visibility.

Source: Interview with Mr. Bendidi, Marjane food purchasing manager, 8 April 2011.

Maltese oranges in Tunisia

The Maltese half-blood oranges grown in Tunisia are a Tunisian regional product that is well-known on both the local and the international market. They are a variety that is associated more with Tunisia, which is the only producer and world exporter, a veritable regional speciality, whose exceptional qualities are expressed essentially in the Cap Born peninsula and in several hot regions in the north and centre of the country (Chart 7).

Chart 7 - Geographical distribution of the production of Maltese half-blood oranges in Tunisia



Source: Groupement interprofessionnel des fruits, 2004.

The orange groves in the region cover an area of 14,000 ha, 45% of which is planted with Maltese half-bloods generating an annual production of 180,000-200,000 tonnes, i.e. 85% of national production. Citrus production in Cap Bon reached the 230,000 tonne mark in the 2008 farm year (compared to 181,000 tonnes in 2007), i.e. an increase of 20%. and Maltese half-blood production amounted to 120,000 tonnes, 22,000-25,000 tonnes of which were grown for export.

These oranges have been well-known in France and the Middle East in the last 50 years for their specific features: very juicy (very suitable for processing into juice); orangey-red in colour, fairly sweet; very few pips; distinctive aroma. Despite considerable potential, the product costs 30% to 50% more than ordinary oranges, and the quantities exported have levelled off. The difficulties are due mainly to product quality problems and the fact that the organisation of the sector is unsuited to export on a very competitive market. Furthermore, the fact that producers are disorganised and lack logistic means prevents them from controlling the marketing of their produce and thus highlighting the intrinsic qualities of the fruit.

What is more, the GIF (fruit inter-trade group) in charge of promoting Tunisian products chooses to highlight the juicy quality of these Maltese oranges, thus placing them in direct competition with other oranges which are much less expensive (Spanish oranges, Moroccan oranges, etc.), instead of vaunting the more specific qualities, which make it a differentiated product on the market (Hassainya, 2009).

Two avenues must be pursued if the Maltese orange is to be adapted to markets. The first concerns food security and sustainable development, which are two powerful sales arguments, particularly in negotiations with the biggest clients in Tunisia. Improving export performance also necessarily involves creating intermediate platforms⁴, and efforts are underway to reform the fresh product distribution circuits. This reform includes plans to create a platform market in the Greater Tunis area, where national products can be developed, new distribution bases established and the necessary attention devoted to quality, grading and packing. Traceability and the transparency of transactions will contribute to food security and will help to regulate the internal market and to enhance the visibility of quality for exports.

The second avenue is being explored through studies of the possibility of creating a PGI for the Maltese half-blood range from the Cap Bon area. This PGI project, which is financed by the World Bank, consists of:

- taking measures to exploit the producers' quality potential in order to secure a competitive position on export markets;
- delimiting and specifying production areas;
- enhancing the coherence of the geographical indications by basing that coherence on what makes an area original and thus on the competitive determinants of the product of that area.

4 - "Tunisie, (r)évolution Verte : les exportations s'emballent" ("Exports soar in the Green [r]evolution in Tunisia"), *Jeune Afrique*, 17 November 2009.

The PGI project is revealing difficulties in connection with coherent strategic positioning and communication that is adapted to strategic choices. For the reputation that the Maltese oranges grown in Tunisia enjoy on both local and foreign markets is connected more with their intrinsic quality and the coherence of communication than with their association with a specific geographical origin. What is more, a PGI would necessarily exclude part of production and any producers located outside the area, and the fact that there would then be two Maltese oranges – one with a PGI and one without – would be liable to cause confusion over the quality of the product.

The institutions' efforts should focus more on improving product quality and on structuring supply more efficiently both on domestic markets, through organised distribution, and on export markets.

Conclusion

Projects for developing traditional products in the Mediterranean region and throughout the world are presented as an essential tool for agricultural and local development. With the abundant aid of international bodies (such as the World Bank, the FAO, etc.), many initiatives are being launched throughout the world to set up systems for protecting and developing traditional products and regional specialities by means of Geographical Indications. This zeal can sometimes result in incoherence and can be counterproductive. Furthermore, most of these initiatives concern the upstream stages – the organisation of production, the identification of products' potential, the negotiation of specifications, or the drafting of national and international regulatory instruments – but few projects focus on commercial feasibility at market level.

There are two conflicting trends in the development of food markets. The first concerns the widespread model of the consumption of standardised, non-regional mass products, which are cheap and are the product of industrial mass production. The second, which is the result of local production models, is the development of traditional local products, which are quality goods that are made by small local production units (Rastoin, 2009). The latter trend is emerging mainly in western and rich countries, but in poor and emerging countries it unfortunately tends to be eclipsed by mass-consumption products.

If the Mediterranean Diet is to be rehabilitated in these countries, action is imperative to promote traditional products by developing organised distribution so that it will increase its market share every year and hold its own with the traditional retail trade. Public policies are also essential, which must be based on measures to promote local traditional products by organising the marketing of those products and creating collective regional brands, as is being done in France, for example.

Irrespective of the market targeted, a marketing approach must be adopted in order to ensure that products are constantly adapted to the market. Of course, the purpose is not to copy the offensive strategies of the major industrial brands but to build up an efficient, relevant and coherent marketing system. Since small producers and SMEs cannot afford the investment required to develop products and generate value added, they must group together to achieve that goal and mobilise policy-makers.

The first solution is to organise producers in groups or cooperatives or associations and to provide them with a marketing manager and the means for building up the range and making it stand out from the other alternatives present on the market. Partnerships with local retailers are necessary in order to promote traditional products under private or collective brands but also through distributor-brand production of traditional, local and regional-speciality products. Lastly, the role played by regional institutions can help to launch and create regional collective brands and thus group the best products of an area or region under one umbrella brand, which can subsequently offer a variety of other products, services or specific competencies and thus serve as a regional marketing tool.

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6 PART SIX

LAW
and trade



LEGAL PROTECTION OF MEDITERRANEAN PRODUCTS

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The legitimacy of a mark referring to a *terroir*¹, or local area, depends on the relationship of trust between consumers and producers. There is no objective proof attesting to the authenticity of a particular know-how. Historical depth depends on temporal and spatial awareness. A relationship of trust crystallises in the name or mark used to designate a product. Marks acquire legitimacy on the basis of the reputation of a product or *terroir*, which is built on know-how and history relating to practices. The values of cultural, symbolic and commercial usage that have been built up over time in specific places depend on subjective relationships. Economists refer to these types of attribute as “credence goods”, since consumers cannot verify their features (Valceschini and Blanchemanche, 2003).

Supported either by the public authorities or by private actors, quality marks are strictly voluntary: displaying a logo or benefiting from an official mark does not mean that a product is exempted from the primary stage of meeting fundamental health requirements, which is compulsory for any product that is marketed. Health requirements are imposed according to the health rules in force at the national and international level (CIHEAM and EFSA, 2007), and operators who skip this statutory threshold quality stage are liable to penalty.

Distinctive quality is thus complementary to the statutory threshold quality; from the legal point of view it is not a precondition for marketing a product (CIHEAM, 2007). However, certain practices become norms that cannot be ignored, particularly in the case of the marketing standards introduced by the large-scale retail trade, which is in a position to impose quality standards on its suppliers such as GlobalGAP (Good Agricultural Practices) or IFS (International Food Standard) norms. These private voluntary standards, which are intended to reassure consumers, formalise the stages of the value

¹ - As stated by UNESCO, the French word “terroir” is difficult or even impossible to translate. To cite UNESCO’s definition, it is a determined geographical area, defined by a human community, which generates and accumulates along its history a set of distinctive cultural traits, knowledge and practices based on a system of interactions between the natural environment and human factors. The know-how involved carries originality, confers its typical nature, and enables recognition of the goods and services originating from this specific geographical area and thus of the people living within it. These areas are living and innovative spaces, which are more than just about tradition. – T.N.

chain by means of specifications. Third-party certifying bodies and monitoring procedures guarantee that these private standards, which actually function as world market norms, are complied with. Agro-food companies which conform with these norms bear the economic costs involved.

Quality marks are economic, political, cultural organisational and identity-related issues, and in this context they are regarded as symptomatic indicators of the spread of the marketing model of well-known origin and quality brands. Ranges of distinctive marks are built up and economic strategies go hand-in-hand with legal strategies. Marks develop as the result of competition and are a factor that complicates the ranking of the brands of products placed on the market (Henson and Humphrey, 2010).

The present paper, which combines a historical and critical approach, examines the circumstances in which these quality and origin marks emerge and spread. Multi-actor initiatives based on private or public standards rely on the economic reasoning of differentiation and market segmentation. Distinctive marks are attractive in terms of possible competitive advantages and the asset of protecting market positioning, since they bestow an exclusive title, which excludes competition. Distinctive marks are governed and managed by administrations, the guardians of doctrine, and have been the subject of compromise throughout their history. France and Europe are the bedrock of designations of origin designed to guarantee the protection of brands that are reputed for their producers' practical know-how. *Roquefort* and *Parmesan* are emblematic of these leading trade names, which are protected against imitations by national law. Since the early 1990s, there have been shifts in meaning and practice between protection through intellectual property rights and quality control procedures.

Analysis of European policies and the policies of the southern Mediterranean countries shows that legal tools and efforts to comply with the corpus of global trade rules have been developing as the result of the spread of the origin and quality model. The ability to modify standards and to steer the direction of their development is a challenge raised by international competition.

The history of institutional compromises

At the beginning of the 20th century: designations of origin – a compromise constructed by the food-chain actors

There is a wealth of historical, anthropological, economic and legal literature relating the circumstances in which designations of origin originated in France – theses, books and research programmes attest to the historical originality of this movement. Anthropological studies underline how these designations have been constructed (Marchenay and Bérard, 2005), and research conducted in the context of the Dolphin and Syner-gi programmes has emphasised the specific governance models that are characteristic of these marks. It was in France at the beginning of the 20th century, following a series of economic crises, that the wine-growing sector organised with a view to obtaining recognition of the legitimate origin of a *terroir* or local-speciality product through legislation. After 30 years of conflict, revolts and lawsuits, the *Société*

des viticulteurs de France (French wine-growers' association) vested itself with the organisational means for fighting imitations and enforcing the boundaries of an area that give a wine its special features. After the first law in 1905, which authorised the administrative zoning of production areas, the legislative decree of 30 July 1935 was the first piece of legislation to confer the status of Controlled Designation of Origin.

The social compromise concerns the fact that exclusion is determined by the delimitation of rights, which are evaluated according to the description of practices laid down in specifications that are negotiated at length by the stakeholders. The fact that the criteria of the product brand are connected with a *terroir* or local area “comprising both natural and human factors” makes it impossible to transfer these rights, since the right is assigned with the ownership of the land or with the right to farm the land. A designation of origin is an inalienable collective right (no sale, no licence). Customs, traditions and a geographical delimitation are laid down in specifications which are registered by the public authorities (Pollaud-Dulian, 1999). Products are differentiated according to qualitative organoleptic parameters, the production process, social history and area of origin. The ability to organise plays a key role in both the attribution and the registration of the designation, which requires a high level of collective organisation and is the result of a social compromise that is supported by regulations attesting to the connections between *terroirs* and natural and human factors. Furthermore, it is a mark which guarantees consumers the origin of production and the natural and human features on which the product's reputation is based. The fraud control authorities can thus intervene if a third party usurps the name.

In economic terms, this right confers a marketing monopoly for an indefinite period, since it is linked to the use of the name of the evolutive community of right holders (the State grants the right to successive producers). The producers who hold this exclusive right are protected from competition and at the same time work as one body to defend this intellectual property. In order to preserve market power they can set a price higher than the competitive price if necessary. Since there is no obstacle to trade and the rights are clearly defined, the allocation of resources is effective in theory and contributes to enhancing prosperity in general (Coase, 1960). The economic reasoning is based in theory on a reward within the framework of market rules and general well-being. Of course, in order to encourage the market as a whole, the reward must not develop into an illegitimate economic rent.

In political and social terms the State is theoretically neutral: it guarantees that this arrangement is based on a normative foundation. The social compromises are internalised in ways of thinking and acting which secure recognition of the rights. But, with globalisation, the hard-won rights and advantages that have been acquired in the course of the history of the sector at the national level lose their legitimacy unless they are recognised at the world level.

In the second half of the 20th century: internationalisation of protection (WTO-compatible)

Once the collective references have been stabilised at the domestic level, the will to obtain international protection of the designation of origin presupposes that the rules be transposed into wider frameworks. The acceptance of principles, norms, rules and

procedures (such as the definition or construction of an effective registration system and the practical implementation of a globalised anti-fraud police force) is a lengthy process which necessarily involves formalising the arguments that are put forward in working groups and special committees and at multinational conferences. These bodies become in turn arenas where collective preferences are developed and interpreted. The will to construct a globalised architecture results in a legal and economic mechanism, which is confronted with the complexity of legal options and sovereign choices. Negotiations are thus both technical and political.

The World Intellectual Property Organisation (WIPO) is the multilateral organisation which has been managing appellations of origin since 1958, the date when the Lisbon Agreement was signed: the Member States found a compromise on the definition and scope of protection including translations and additions (“form”, “type”, etc.). “An appellation of origin is the geographical designation of a country, an area or a city that designates a product that originates from that place and whose quality or specifications are linked totally or mainly with the geographical environment, including natural and human factors” (WIPO, 1958). This definition confirms the links between the designation of a product with specific qualities and features and a place in the systemic sense of the term (natural and human factors). It provides the opportunity to obtain protection for an appellation of origin amongst the contracting parties to the Lisbon Agreement through a unique registration procedure, while respecting national legal traditions. But the Lisbon Agreement is limited in scope due to the limited number of countries that have signed it and to the absence of legal sanctions in the event of usurpation. With its 26 signatory countries it is the legitimate framework at the international level for appellations of origin and geographical indications. Since there are no mechanisms for imposing sanctions, the feasibility of creating a multilateral register of geographical indications that would be managed under the auspices of the WIPO, as is the case with trademarks, is being evaluated at regular meetings (WIPO, 2008).

In order to enhance effectiveness, oversight of the international legal rules initially administered by the Intellectual Property Offices (the Lisbon Agreement is administered by the World Intellectual Property Organisation) was transferred to the GATT authorities in charge of trade rules. The major world powers are taking part in these new arrangements, in particular the United States and the European Union, which are seeking to guard against piracy at the international level. The objective is to acquire a more forceful protection system equipped with a monitoring facility and effective means of implementation by combining commercial and legal issues at the global level. It took 10 years of negotiations for the ‘Dunkel Draft’ to be drawn up at the conclusion of the 1994 Uruguay Round; it comprised an Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), which also contained articles on “geographical indications”.

It was no longer the 26 countries parties to the Lisbon Agreement – reduced to 16 if one subtracts the EU countries which adhered to it – but 54 States which signed the TRIPS Agreement. What is more, the agreement contains corrective procedures and action to effectively ensure that rights are respected. The States must make provision for procedures and measures as well as the penalties applicable in the event of deliberate

imitation of trademarks or brand names. In the establishment of legal machinery regulating intellectual property differentiated timescales apply in the member countries depending on their level of development. This legal and economic machinery is constructed in compliance with the fundamental principles of the World Trade Organisation, which are those of non-discrimination, national treatment, and equivalence. If the principles and rules are not complied with, “border measures” are adopted by the TRIPS Council, which is in charge of monitoring the implementation of the agreement and verifying that the States fulfil the obligations deriving from it. Last, but not least, in the event of conflict over compliance with obligations, a State can file a complaint with the Dispute Settlement Body. This system of order and sanctions is based on the codifications regulating the principles of the world market.

The multilateral framework of world trade establishes the regime of intellectual property rights relating to trade. The standard-setting doctrine of free trade is accompanied by the recognition of exclusive rights, which are administered through a corpus of legal rules including geographical indications. The new international definition given in Article 22 of the TRIPS Agreement is less stringent than that of the Lisbon Agreement: “Geographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin”. The conditions for granting protection no longer depend on the combination of natural and human factors, since the article merely states cases which are substitutable (reputation, quality or other characteristic). The geographical area proving the origin of the name is conceived in the broad sense, since it ranges from a “locality” to a “*terroir*” of a member country.

To put it plainly, a national territory can be assimilated to a *terroir*: “Ceylon tea”, “Columbia coffee”, or “Greek feta” are practical examples of the changes taking place as the result of compliance with the definition of the TRIPS Agreement. Since 2007, for instance, the European Union has agreed that the word “Feta” is to be reserved exclusively for producers from Greek regions, in accordance with the WTO definition. The British cheese “Yorkshire Feta” or the “Good ewe’s-milk Feta” sold by Roquefort Société can no longer be marketed under these brand names. The advantage that Greece has been granted for using and referring to the word “Feta” is endorsed by legal arguments relating to the specific reputation and overtones suggested to consumers by this name (Greek verbal and figurative connotations).

States, which are guarantors of rights but also actors in economic growth, change the boundaries and levels of protection of products of repute. As both the judges and arbiters of regulatory frameworks, they are faced with conflictual policy choices and political decisions.

21st century: macro-economic bargaining and institutional rulings

The trial of strength between the European Union and the United States is symptomatic of the differences in opinion and the difficulties encountered in harmonising bodies of prescriptive rules on which compromises have been found at the national level. These

countries come up against the first point in the negotiating mandate laid down by the ministers of trade at the Doha Ministerial Conference in 2001: the establishment of a multilateral system for notifying and registering geographical indications is as yet unresolved. The European Union argues that the registration system should have binding legal effects in every member state in order to extend protection to the international level, whereas the United States envisages an information base with no legal effect. This American point of view is understandable for historical and cultural reasons: the law of geographical indications is codified in the Trademark Act (US CODE, 2010), which is enforced by the Patent and Trademark Office (PTO). The American certification marks and collective trademarks are regarded as geographical indications which meet the WTO standards without the need to establish any new codification. From the US point of view, any binding system would contradict the policy of free trade, would constitute over-regulation and would give rise to new procedures, new rules and new machinery, which would be costly and ineffective (Babcock and Clemens, 2004).

In the absence of multilateral progress regarding the notification and registration of geographical indications, the Dispute Settlement Body plays an increasingly important role and influences national policies. The complaint filed by the United States against the European Union in 1999 illustrates the head-on confrontation between the countries of the New and the Old World. The United States – the countries of the New World – considered that its national legislation met the world trade requirements of economic flexibility. The European Union was suspected of setting standards which would contradict the principle of free trade and would be disguised forms of protectionism. A panel of the WTO Dispute Settlement Body agreed with the complainants and, in 2006, obliged the European Union to change the EC Regulation on designations of origin of foodstuffs (EC Regulations No 2081/92 and 692/2003, amended by EC Regulation no 510/2006); this was followed by application rules in December 2006 (EC Regulation no. 1989/2006) in order to comply with the principles of reciprocity and equivalence prevailing in the WTO. As a result of this panel decision in practical terms, third-country producers are now entitled to register a geographical indication in the European Union. “Colombia coffee” was thus one of the first foreign geographical indications to be entered in the European register in 2007. Since then, the European administration in charge of registration has been processing numerous applications from third-country producers. It has also had to open its inspection structures to independent third-party bodies which are in a position to carry out assessments and controls and to recognise when trademarks and geographical indications can coexist (Ilbert and Petit, 2009).

This attack on Community regulations on designations of origin of foodstuffs actually targeted the historical institutional arrangements established in Europe. WTO guidelines and the rulings made by the WTO panels have led to the alignment of national legal machinery. The reforms that have been carried out by the INAO (the French national origin and quality institute) since 2006 are a practical example of current national transposition measures: control procedures by third-party bodies are now added to the traditional checks carried out by the food-chain professionals themselves and the applications for registration of national AOCs (controlled designations of origin). This results in multiple additional constraints for producers. The reform of legal and economic

machinery to make it “WTO-compatible” has shifted the balance in the social compromises that have been built up over the years.

Market asymmetry and power struggles

Competition for the status and power of reputation is asymmetrical, since the economic circumstances and legal statuses of the various countries are not conducive to equilibrium: countries such as the United States and the European Union, which have reputation goods to defend and which have protection systems, are strengthening their positions and confirming their comparative advantage, since they enjoy the attributes of wealth and power.

The Mediterranean countries of the European Union – the benchmark market for Geographical Indications

In the absence of an international registration system, the European Union with its population of almost 500 million distributed over 27 countries is the only market with an efficient registration system for geographical indications. By August 2011, the European Union had a total of 1032 registered geographical indications, not counting the 71 indications awaiting registration. The southern European countries predominate with 76% of the registered geographical indications. They account for 83% of the PDOs (Protected Designations of Origin), 71% of the PGIs (Protected Geographical Indications) and 22% of the TSGs (Traditional Specialities Guaranteed). The vast majority come from Italy (230 products), followed by France (184), Spain (150), Portugal (116) and Greece (88). Then there is Slovenia with 5 products and Cyprus with just one. The number of geographical indications almost doubled in the period from 2000 to 2011. The main products registered in the European Union by August 2011 were fruit and vegetables (27%), cheeses (20%), meat products (13%), meat (12%) and oils and fats (11%).

According to a survey on the value of PDO and PGI agricultural products which was presented to the EU Advisory Committee on Quality of Agricultural Products, the value of the PDO-PGI product market was estimated at €14.5 billion in 2008. As regards products other than wine, cheese accounts for almost 38.7% of that total, meat and meat products 25.7%, beer 16.3%, fruit and vegetables 6%, bakery products 5.1%, and olive oil 1.6%. This market is highly concentrated on the 5 Mediterranean countries of the European Union.

The Geographical Indications market accounts for slightly over 1% of the total food market in Europe as a whole but almost 3% in the southern countries. It has a high growth rate: over 5% per year during the 2000–2004 period, whereas food expenditure amounted to 1% on average. The 2010 survey – updated for the Advisory Committee – confirms these data and gives an estimated rate of increase of 2.8% for 2007 (Origin, 2011).

Quality and origin marks have been undeniably successful on the foodstuffs market. Although the market is limited, it is steadily growing and is unaffected by price volatility. For quality-marked products allow differentiation on export markets and generally have high demand elasticity compared to similar products, even though they are increasingly exposed to competition. The recent rapid development of labels such as the “organic”

Table 1 - Number of quality products officially recognised at the European level

Countries	PDO	PGI	TSG	Total
Austria	8	6	0	14
Belgium	3	5	5	13
Cyprus	0	1	0	1
Czech Republic	6	19	4	29
Denmark	0	3	0	3
Finland	3	1	3	7
France	82	102	0	184
Germany	32	54	0	86
Greece	65	23	0	88
Hungary	4	4	0	8
Ireland	1	3	0	4
Italy	163	85	2	250
Lithuania	0	0	1	1
Luxembourg	2	2	0	4
Netherlands	5	3	1	9
Poland	6	14	8	28
Portugal	58	58	0	116
Romania	0	0	0	0
Slovakia	0	7	2	9
Slovenia	1	1	3	5
Spain	79	68	3	150
Sweden	1	3	2	6
United Kingdom	16	19	2	37
Total	515	481	36	1032

Source: Qualigeo, updated on 31 August 2011.

label shows that official quality marks meet consumer expectations. Studies carried out in the European Union show that consumers are quite willing to pay more for distinctive products that are identifiable. Dairy farmers in the *Comté* cheese-producing region are paid 10% more for their milk compared to the price paid for ordinary milk (Colinet *et al.*, 2006). French cheeses that are protected by a geographical indication fetch 2 euros

more per kilo on average than other French cheeses (Barjolle, Réviron and Sylvander, 2007). Analyses show that these marks are tools for creating value as well as for area management and long-term economic development. Both farming activities and rural area and landscape management benefit from the establishment of a designation of origin. The origin and quality policy pursued through the “quality package” in the context of European agricultural policy strengthens the protection of PDOs and PGIs, particularly when the products are used as ingredients in processed foods. The report adopted by the Committee on Agriculture of the European Parliament also proposes that registration procedures be simplified (Commission of the European Communities, 2011).

A regulated market – the fight against “unfair” practices

The major downside of the success of reputation goods becomes apparent when it comes to protecting designations of origin on international markets. Usurpation is frequent and takes on various forms. Some firms deliberately mislead consumers by taking over the entire brand name of a designation, distorting the brand name phonetically or using it to create Internet domain fields based on the name. In other cases the imitation is indirect and takes advantage of what a picture evokes – a champagne bottle is engraved on home cinema loudspeakers, for example, or a «House of Cognac» sells clothes. The means of the INAO in France are too limited for the institute to be equal to the task it has been assigned. With a budget of only €240,000 committed to fighting international counterfeits (Clerc, 2011), cases of fraud are multiplying and firms are vesting themselves with their own legal departments in order to contend with the problem. This is the case in particular with *Champagne*, *Roquefort*, or *Cognac*, for which dozens or even hundreds of cases of fraud are reported every year (over 1000 cases have been handled for *Cognac* in the last five years according to our enquiries with the operators).

In Italy, the Nomisma research centre has carried out a survey to assess the imitation of Italian agro-food products on the retail market in the United States (Fondazione Qualivita, 2007). The analysis identified 36,177 Italian-sounding products, of which only 3849, i.e. 10% of the total, are actually Italian. Italian-sounding products have an estimated value of \$17.7 billion, only 8.6% of which (\$1.5 billion) are genuinely Italian products. The study, which covers various types of distinctive mark (PDO, GI), Italian geographical place names, Italian proper nouns or Italian words, classes products according to 7 types of imitation.

The cheese sector is no doubt the sector most exposed to counterfeit. A recent study by Coldiretti states that *parmigiano reggiano* is the most falsified product in the world: it becomes *regianito* in Argentina, *parmesão* in Brazil, *parmeseano* in Latin America, and *parmesan* throughout the world. A website survey highlights the fact that imitations are to be found on the virtual storefronts of the most renowned American firms. Gorgonzola, asiago and la fontina cheeses are produced, for example, by Stella Cheese in Illinois; the commercial firm of BelGioioso, in Wisconsin, also offers parmesan, provolone, pecorino romano and American grana, a cheese the same shape as *Grana Padano*. The list continues with numerous examples of products with most original descriptions and presentations: “ricotta with milk” – as if it were possible to produce cheese without it! Firms invent Italian-sounding names (BelGioioso, Colonna, Frigo, Stella, Sorrento...) or play on references to the history of immigration and even on Italy’s green-white-red national

Table 2 - Forms of usurpation of Italian products on the United States market

Model	Type	Examples of imitation
Imitation of Italian GIs	Imitation of protected designation	Parmesan, Romano Cheese, Chianti, Provolone, Mortadella
	Reference to Italian geographical areas	Tuscan, Florence, Neapolitan, Genovese
	Use of the word Italia and its derivatives	Italia, Italy, Italiano, italian
Imitation of Italian products and brands	Italian product, not listed in the American dictionary	Gelato, pane, mascarpone, pomodori
	Italian product listed in the American dictionary	Pizza, pasta, caffè, ricotta
	Use of Italian surnames and first names	Alberto's, Capuzzo, Di Lallo
	Use of Italian words	Sole, amore, capitano

Source: *Fondation Qualivita*.

colours. It is only afterwards that one discovers that the firm is part of a foreign multinational and has nothing to do with Italian tradition.² There are also counterfeits in the prepared meat product sector: mortadella, soppressata or speck (smoked ham). Some countries allow products such as “Parma ham” produced by Maple Leaf Consumer Foods and “San Daniele” ham produced by Santa Maria Foods to be marketed.³

Working through a company, Buonitalia, the Italian Ministry of Agriculture has set up an observatory with the collaboration of the Institute for Foreign Trade with a view to monitoring North American markets and has also created an electronic platform (<http://www.trueitalianfood.it>), where new cases of piracy of Italian PDO and PGI products can be reported. A support service is provided for producer groups where infringement lawsuits are called for, as in the case of Parma and San Daniele ham and Asiago, Montasio, Taleggio and Provolone Val Padana cheese.

In view of the costs incurred in legal proceedings, producers form associations in order to strengthen the protection systems. Origin, an association which groups about 100 producers of origin and quality products throughout the world, plays a key role in efforts to ensure that national GI protection is extended and strengthened. The Association lobbies the WTO and the EU and, for the last five years, has been fighting for measures

2 - Cf. <http://www.belgioioso.com>; <http://www.sorrentocheese.com/>; <http://www.colonnabrothers.com>

3 - Cf. <http://www.santamariafoods.ca/>; <http://www.mapleleaffoods.com>

to strengthen the binding international register and to simplify registration applications as well as for the recognition of *ex officio* rights. It is pressing for action to strengthen the protection provided for geographical indications through international standards to combat unfair trading practices which damage their reputation.

Furthermore, the European Union is developing reciprocal protection agreements with a view to promoting the convergence of protection rules and systems. The trade agreements and cooperation agreements signed with the southern and eastern Mediterranean countries contain specific paragraphs on intellectual property rights: geographical indications are one of the components of the Association programmes concluded with the European Union (Berlottier, 2009).

Lastly, in May 2011 the European Commission adopted a strategy to reintroduce customs controls in order to combat trade in goods that contravene intellectual property rights. A new proposal for a regulation is to be put forward. In the absence of the implementation of the WTO agreement on intellectual property rights or the Lisbon Agreement, the European Union is seeking to include new rules conducive to backing up actions for damages in the event of infringement of the geographical indications cited in the Anti-Counterfeiting Trade Agreement (ACTA). The latter agreement grants new implementing powers and includes the criminal and civil liability of infringers.

Southern and eastern Mediterranean countries achieve compliance

Since the beginning of the 1990s, the southern and eastern Mediterranean States have been creating national machinery in line with the standards that have been constructed by high-tech countries. The legal protection of originating brands is a preliminary which strengthens the institutional fabric: the bilateral trade agreements signed with the United States and the European Union comprise a chapter on intellectual property rights containing definitions and specifying how protection systems are to be implemented. Algeria, Egypt, Morocco, Turkey and Tunisia have set up national machinery for protecting distinctive marks including a special section on geographical indications. Other countries such as Lebanon, Jordan, or Syria are working on national regulations, which have not yet been endorsed. By creating the Arab Society for Geographical Indications in 2008, the 24 countries of the Arab League have demonstrated the political will to encourage the passing of laws in alignment with international standards in order to gain competitiveness on world markets (CIHEAM, 2008).

This legal machinery is guided by governments which are bringing their regulations into line with global standards in order to meet the requirements for access to international markets: marks, geographical indications, labels and prestige-enhancing statements are being established by the national authorities. It is thus a top-down process which governs the acquiring of protection rights, the guiding principle being competitiveness.

Creating national legal machinery will not suffice, however, to guarantee the viability of the right at the national and international level. The southern and eastern Mediterranean countries lack monitoring machinery at the domestic level, and the institutions do not have the means of guaranteeing that the rights that have been granted comply with the

The quality approach in Morocco - boosting exports and fighting piracy

Morocco, on the southern shore, has embarked on a course of action to promote and diversify agricultural products as a lever for rural development and a means of boosting exports. The country has now opted for a labelling system as a priority approach in the context of the new strategy set forth in the government's Green Plan, and more specifically in the context of the second pillar of that plan.

The three official marks

The "Law on distinctive origin and quality marks for agro-foodstuffs", which was adopted on 23 January 2006 (Act 25/06) and entered into force in 2008, classes the products concerned in 3 categories: animal products, plant products, and processed products derived from the first two categories. The Act defines three "official" marks, i.e. geographical indication (GI), designation of origin (DO) and agricultural label (AL). It also lays down the requirements for the recognition and protection of these marks, stipulates how certified products must be labelled, and specifies what constitutes an infringement as well as the penalties applying in the event of non-compliance with the statutory provisions. Furthermore, it contains provisions for creating a national commission on distinctive marks. Each of these marks has its own logo, which a national committee within the Department of Agriculture is in charge of allocating to products that have been recognised. These "official" marks are a guarantee of origin and quality both for the domestic market and for foreign outlets; they serve the dual purpose of boosting exports and also guarding against counterfeits bearing labels of origin.

Recognised products

A total of 11 products have been recognised or are awaiting recognition to date: the "Argan" IG from the Sous Massa Drâa region, which has been registered by the Moroccan Association of the Argan Oil GI; the "Tyout-Chiadma" olive oil PDO from the Marrakesh Tansift el Haouz region, registered by the Tyout Olive Oil Production and Marketing Cooperative; the "Berkane Clementine" GI from the Oriental Region, registered by the Berkane Clementine PGI Association; the "Taliouine Saffron" PDO from the Sous Massa Drâa Region, registered by the Sous Massa Drâa Regional Council; the "Tafilet majoul dates" PGI from the Meknes Tafilalet Region, registered by the Tafilet Oasis Association for Promoting Terroir Products and Organic Farming; the "100-day lamb" Agricultural Label registered by the National Association of Sheep and Goat Farmers; the "Béni Guil lamb" GI from the Oriental Region, registered by the National Association of Sheep and Goat Farmers; the "Sefri Ouled Abdellah pomegranate" GI from the Tadla Azilal Region, registered by the Abdliya Association for the Production and Marketing of Ouled Abdellah Pomegranates; the "Aït Baâmran prickly pear" GI from the Souss Massa Drâa Region, registered by the Cactus Aït Baâmran Economic Interest Grouping (EIG); the "Chefchaouen goat's cheese" GI from the Tangier-Tetouan Region, registered by the National Association of Sheep and Goat Farmers; the "Kélâat m'gouna-Dadès rose" PDO from the Souss Massa Drâa Region, registered by the Ouarzazate Regional Agricultural Development Office. Following the law and its implementing regulations, one of the major lines of the new export support strategy is to build up a visual identity conveying the "Moroccan Product" brand image for the main categories of Moroccan products intended for export but also to convey that image on the domestic market and thus encourage Moroccan consumers to develop a sense of pride.

specifications. In Turkey, applications are submitted by regional administrations, chambers of trade and industry, district governors' offices, or even private enterprises. The simplified registration procedure has certainly played a role in the multiplication of the number

of geographical indications, but since there are no control or monitoring procedures the quality of products sold under a brand name can vary widely, depending on the operators marketing them (Tekelioğlu, 2010). Outside Turkey, access to the market of the European Union – the only major market with an effective register that can protect geographical indications – is difficult. The situation to date is that Turkey applied in 2010 to have a product entered in the EU register – the *Antep Baklavası* (sweet pastry from Gaziantep). And in October 2010 Morocco applied to have *Argane* (Moroccan argan oil) registered. This geographical indication has been meeting with legal difficulties connected with the rights of prior users of the brands. Negotiations are underway to find possibilities of performance in return. The absence of prior reciprocal agreements is slowing down the practical implementation of recognition on the European register. Unlike China, which has negotiated a pilot project with the European Union (the “10+10” project) with a view to encouraging reciprocal applications for the protection of 10 geographical indications in the partner’s jurisdiction, the southern and eastern Mediterranean countries do not constitute a sufficient market for reputed European brands such as *Roquefort*, *Comté*, *Grana Padano*, or *Parma Ham* to gain from being protected on their markets in return for the registration of Argan oil on the European market.

As is the case in the construction of rights and the organisation and coordination of inter-trade bodies, market differentials are undermining domestic protection and slowing down access for the southern and eastern Mediterranean countries to international recognition.

Outlook and conclusions

The need to protect reputation goods is combined with the political will to supply public goods such as rural and regional development, the protection of biodiversity and heritage, measures to highlight the know-how and products of specific areas, social responsibility and food security. As relays and vectors of these changes, geographical indications become both market tools (for combating counterfeit products) and levers in the political, economic, social and environmental context.

In parallel with national policies geared to protecting emblematic products, regional authorities and public research and cooperation bodies are studying the feasibility of creating an umbrella brand, which would cover the geographical indications of the countries around the Mediterranean. This approach is based on a strategy for mobilising the resources and competencies of small firms that are established in the area of activity and are seeking to differentiate specific products protected by geographical indications. In a competitive market that is steered by very large firms, the umbrella brand would be a means of acquiring a critical size in order to enhance visibility and efficiency. This approach, which is based mainly on the principle of aggregation, is generally adopted by the regions, as is the case with the *Sud de France* (South of France) or *Pays Cathare* (Cathar Region) brands. Certain regions in the southern countries are planning to create a Mediterranean label on the *Arc Latin* scale (see Box below).

The advantage on the Mediterranean scale would be to build up significant volumes of products while investing in promotion and in innovative firms in order to enhance the region’s competitiveness. The main drawback of this regional marketing approach lies

in the difficulty in administering brands whose implementation criteria are subject to national rules and in the difficulty in finding modes of coordination which guarantee a stable reputation (Ilbert and Rastoin, 2010).

The contribution of the Novagrimes project to the debate on the creation of a Mediterranean label

The Novagrimes project (*Innovations Agricoles en Territoires Méditerranéens – Agricultural Innovation in Mediterranean Regions*) is part of the Mediterranean strand of the European structural policy for the 2007-2013 planning period. Its purpose is to implement concrete, innovative and collective measures which highlight the specific features of Mediterranean agriculture on the basis of the experience of the various partners (Provence-Alpes-Côte d'Azur Region, Puglia Region, Region of Sardinia, Murcia Region, Thessaly Region, and the MAI-M of the CIHEAM). Through work on the *Mediterranean label* the project is considering the feasibility of a regional quality brand for the recognition of typical products.

Advantages

A Mediterranean label would bring both socio-economic advantages (better market insertion and creation of new outlets for firms, enhancement of product quality, a reliable product traceability system, improvement of producer incomes and of regional revenue) and sociocultural benefits (strengthening of social bonds, contribution to the regional emergence process, response to the demands and needs of growing urban populations, possibility for rural areas to retain their populations and thus maintain a dynamic and competitive rural fabric, development of new relationships of trust with consumers).

Disadvantages

However, disadvantages have also become apparent in the course of the debate: the fact that the label would overlap with other systems already in place at the European, national or regional level, the extreme diversity of products and food chains, actors and viewpoints, the diversity of institutional protection machinery and the ensuing difficulties in establishing governance at the level of the Mediterranean Basin as a whole, in conflict arbitration and in efforts to manage and promote the label.

From the operational point of view, a structure would need to be set up at regional or State level in order to ensure that the label is properly operated and protected, to coordinate the traditional actors in the various food chains and to undertake promotional measures to ensure that the initiative is not perceived as an umpteenth brand which would not resolve the concerns of food-chain actors and consumers.

The ability to meet these social expectations of quality, security, sustainability and transparency raises questions of choice in terms of redistribution (Pronk, 1997) and democratic dialogue. Some collective initiatives evidence modes of organisation that are based on collective learning, networks and exchange:

- short food chains (collective purchasing groups, citizens' movements, etc.) are forms of commerce which promote local markets and localised systems;
- direct sales networks (in which remote cooperatives are linked up, etc.) participate in globalised trade while escaping the monitoring culture established by distinctive marks;

- autonomous citizens' observatories provide technical information on quality and prices (consumer movements, etc.).
- Access to information and to networking activities is one of the cornerstones of this type of organisation. There are a number of potential avenues for consolidating this type of collective action.
- The first solution is to encourage autonomous networking in order to build up controlled and sustainable "supply and demand". Local or farmers' markets or solidarity networks are possible alternatives to the solutions designed exclusively for export markets.
- Citizens' responses are many and varied, and this can be encouraged through an exchange platform equipped with an internal evaluation system in order to guarantee confidence (such as the eBay model, which records the history of sellers' rankings).
- Lastly, another solution would be to limit the number of labels or brands in order to strengthen drives to serve the public weal. This latter proposal is certainly the most difficult to implement, as has been demonstrated by the Australian government's plan to ban branding and logos on cigarette packages: the legislative bill, which is to be discussed by the Australian Parliament at the end of 2011, could prejudice brand owners' rights. The government's decision to opt for public health could be described as a non-tariff barrier from the point of view of the WTO free trade rules (Origin, 2011). New compromises will thus have to be constructed...

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AGRICULTURAL GLOBALIZATION AND MEDITERRANEAN PRODUCTS

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Since ancient ages, Mediterranean means exchanges. People around the Mediterranean basin have exchanged legal structures, habits, raw materials and agricultural and food products. Focusing on the latter, products like *garum*, olive oil, wine, cereals, raisins, silk..., have been distributed across the Sea following all the possible directions via barter trade, via colonization and via trade. A set of common habits, illustrated by the Mediterranean Diet, emerged as the result of these exchanges. Over time, the gravity center of the Western world turned westwards; and nowadays, globalization implies exchanges scattered all around the world. Nevertheless, the Mediterranean Sea still witnesses a huge shuffling of goods among its shores.

In this chapter, the focus is put in the current situation of Mediterranean agricultural trade. To discuss on this topic and its different matters of interest, the chapter is divided in various sections. First, the current situation of agricultural trade is set as a starting point, highlighting the position of Mediterranean Countries (MCs) and the main developments taking place in several Mediterranean products. After that, the discussion turns to international negotiations, in particular the multilateral trading system and Doha negotiations; the role of Non-Tariff Measures (NTMs), with an illustration affecting several agricultural goods. Later, the focus is put on the bilateral relationships between the two sides of the Mediterranean Sea, and finally the role of EU policies and the CAP on softening impacts of further trade liberalization. Finally, a number of remarks conclude the chapter, with focus on combining trade integration in the region, with active rural development policies that adapt to people's needs. After all, the European Neighborhood Policy on Agriculture and Rural development is in process of definition by the EU to improve rural livelihoods, to contribute to food security and to develop institutional capacities.

Agricultural trade in the world and in the Mediterranean region

This section highlights the main developments affecting trade in agricultural products, with a special emphasis on Mediterranean products. In the next paragraphs, a brief description of agricultural trade is carried out, while the next pages expand on the situation for the Mediterranean interests, namely the description of trade among Mediterranean countries and the most relevant aspects regarding the pattern of trade for a number of Mediterranean products present at the Mediterranean Diet. This section supplies a background for interpreting the role of trade barriers and international trade negotiations, which will be carried out in the following sections.

Trade in agricultural goods

Due to the global crisis, global goods trade decreased in 2009 for the first time since 2001¹. The reduction in volume accounted for 12% and it confirmed the declining trend begun in 2007. Overall, merchandise exports (fob) accounted for 11,787 billion US\$.

This reduction was uneven across the different product categories. In fact agricultural goods suffered the less significant cut as they only declined by 3%. This proved its resiliency to the economic crisis. Major cuts happened to fuels and mining products and, especially to manufactures, which contracted by 15.5%.

Another remarkable fact is that the share of agricultural trade in total goods trade remains below 10%. Overall, the value of agricultural exports accounted for 1,168,847 million US\$ in 2009 (fob values).

Globally, the two main agricultural exporters and importers are the EU and the USA. Considering both intra and extra-EU trade, the EU ranks first both in exports and imports. If only extra-EU trade is considered, the USA are the top world agricultural exporter (119,584 million US\$ in 2009, fob values) and the EU is the top world agricultural importer (140,773 million US\$ in 2009, fob values). Adding their respective shares – as importers or exporters – they represent about 20% of current agricultural trade, while in 2000 they accounted for about 25%.

This reduction is due to the emergence of a series of countries increasing their participation in global agricultural markets. An outstanding case is China, increasing yearly by 11% its exports and by 16% its imports between 2000 and 2009. Currently China is the fifth agricultural exporter and the third importer. Other countries are more specialized either on exports or either on imports activities. Instances of export-orientated countries are Brazil, Argentina, Thailand, Indonesia and Australia, while Japan, the Republic of Korea, Mexico and India are import-dependent countries.

1 - The figures in this sub-section were collected from the International Trade Statistics (WTO) in December 2010 and January 2011.

Reference to the position of Mediterranean Countries

Referring to agricultural trade in MCs, the most outstanding feature is their reliance on imports. In fact, out of all the CIHEAM member states, only France and Spain show clearly a positive agricultural net balance in the recent years, accounted in monetary terms. While Turkish situation is nowadays more or less balanced, the rest of countries show persistent imbalances along the second half of the last decade. Moreover, for the most of the countries – i.e. Albania, Algeria, Egypt, Greece, Lebanon, Malta, Morocco, Portugal, Tunisia and Turkey – the net trade balance has worsened over the period 2005-2008. The Table 1 depicts the main figures on agricultural trade for CIHEAM countries.

Table 1 - Agricultural net trade balance in CIHEAM countries (in thousand US\$)

	2005	2008	Net trade as a % of total agricultural trade (average 2007/2008)
Albania	- 405 996	- 780 353	- 84.24%
Algeria	- 3 827 343	- 7 709 345	- 97.55%
Egypt	- 2 778 927	- 6 837 982	- 60.97%
France	11 818 222	14 871 858	13.06%
Greece	- 2 160 698	- 3 905 706	- 27.94%
Italy	- 6 830 547	- 7 761 663	- 10.41%
Lebanon	- 1 078 496	- 1 753 142	- 66.36%
Malta	- 348 176	- 517 163	- 75.65%
Morocco	- 949 893	- 3 238 262	- 45.15%
Portugal	- 3 116 419	- 4 515 285	- 32.50%
Spain	3 737 624	4 886 566	7.32%
Tunisia	- 208 491	- 1 001 942	- 21.82%
Turkey	2 863 425	288 223	- 1.88%

Source: authors' calculations based on FAOSTAT data.

The bilateral balance between the EU and the MCs has also tended to be more and more favorable to the EU in the last couple of years (Abis and Tamlilti, 2011). In the field of EU-MCs trade, a discussion on the role of the Euro-Mediterranean Agreements and the trade preferences for Mediterranean countries is made in subsequent sections of this chapter.

Another remarkable fact to highlight is the concentration of agricultural trade around the Mediterranean Basin. The MCs suppliers of agricultural products to the EU are

Turkey, Morocco, Israel and to a lesser extent Egypt and Tunisia. These five countries supplied over 90% of EU agricultural imports from the MCs in the last decade, being Turkey the major origin. On the other hand, Algeria is by far the EU's top customer: it alone absorbed about 25% of EU agricultural exports to the MCs in the same period.

Extra-EU actors are significant suppliers in the fast growing import market in the MCs (CIHEAM, 2010; Abis, 2011a). The United States ranks the leading trading partner as a source of agricultural products at Turkey, Egypt, Jordan, Morocco and Algeria, mainly based on grains, in particular wheat, maize and soybeans. Imports are also growing from Brazil, which exported around 6 billion dollars in 2008 to the Arab region (mainly beef, soybeans and sugar); and from Russia and Ukraine, which are forecasted to become major partners in the Mediterranean regions, in wheat trade. Dependency in the Mediterranean region on cereal imports is fostered by demography, by a dramatic change in consumption patterns (with a trend to withdraw from the Mediterranean Diet) and by the supply constraints (water scarcity and low productivity in rain-fed areas).

Exporting interests by Southern Mediterranean countries

Let us consider the trade evolution and main trends of two typical Mediterranean products, namely fruits and vegetables and olive oil. These products are relevant for the exporting interests of Southern Mediterranean Countries, in particular in the EU markets. We wonder about the complementarity of MCs and the EU in the supply of such products, given the fact that they are usually shown as sensitive in the bilateral trade negotiations, within the Barcelona Process-Union for the Mediterranean.

Following Wu Huang (2004), fruits and vegetables (F&V) have claimed an increasing share of world agricultural trade, from a nominal value of \$3.4 billion (10.6%) in 1961 to nearly \$70 billion (16.9%) in the early 21st Century. Besides, the variety of products has increased. Bananas, apples, oranges, and tomatoes accounted for over 30 percent of the total fruit and vegetable trade in the 1960s and 1970s, but by the end of the 1990s they accounted for less than 20 percent. Fresh grapes, fresh vegetables, frozen potatoes, tree nuts, and other fruit and vegetable products are entering world trade channels in increasing quantities.

A geographic segmentation of global trade in these products is also noticeable. Most trade in F&V occurs within a few geographic regions – the European Union (EU), the North American Free Trade Agreement (NAFTA) countries, and Asia. Typically, each one of these regions has high-income consumer countries, with nearby supplier countries – be it developing or developed – having suitable climates or other factors for producing. For example, imports within the EU flow mostly to the United Kingdom, France and Germany, and the largest exporters are Spain (for its produce) and the Netherlands (through whose seaports many of the exports are shipped).

There are also remarkable F&V trade flows from MCs such as Morocco or Turkey. To complete the picture of trade for these products, it may be worthwhile to refer again to the discussion on trade preferences and also to the discussion on the specific commercial policies implemented by the EU in some goods. These discussions are carried out in next subsections of this chapter.

Apart from intra-EU supplies, the EU principally buys vegetables from its Euro-Mediterranean partners. As an instance, in the period 2005-2009 the MCs supplied in average about over 40% of the vegetables imported by the EU. With regard to fruits, for the same period close to 17% of fruits imported by the EU were originated in the MCs.

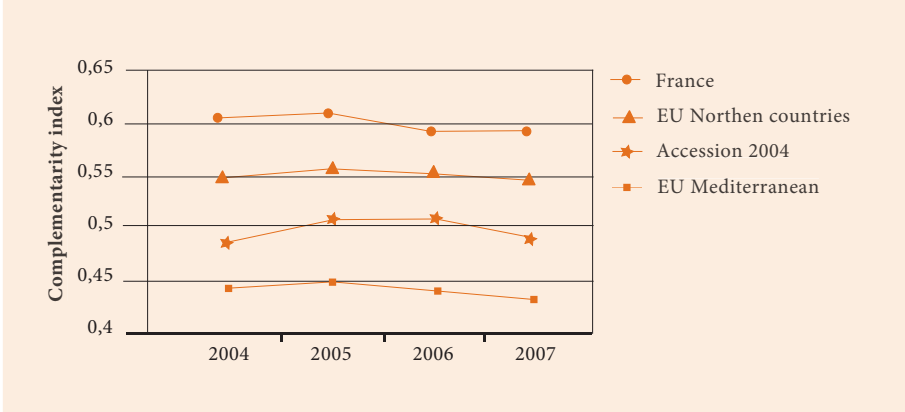
There are a number of F&V to which the MCs are in fact the only suppliers of the EU, according to Comext data corresponding to the period 2006-2009. Virtually all the potatoes imported into the EU are originated in the Euro-Mediterranean partners, mainly Egypt, Israel and Morocco; the same holds for tomatoes, product to which Morocco alone holds more than 60% of EU imports in value. With the addition of the other MCs, the percentage rises to 95%. In the case of cucumbers, the joint Euro-Mediterranean partners' share into the European imports market goes to 90%, being Turkey on top with about two thirds of total imports.

Turning into fruits, the preponderance of Mediterranean products out of all the extra-EU imports is not so outstanding, although there are several marked exceptions. For instance, Tunisia holds about 50% of dates' imports value, and the ten Euro-Mediterranean partners jointly account for 83% of dates' imports value. For figs, Turkey is the main EU provider with above 90% of market share. However, in the case of citrus fruits, MCs do not dominate the European market so clearly, mostly due to off-season imports from the Southern Hemisphere. In fresh oranges and fresh grapefruits, about 30% of extra-EU imports are originated in Euro-Mediterranean countries. For lemons and limes, the percentage lowers to 20%. Yet, in the case of fresh mandarins and clementines, the total Euro-Mediterranean market share rises to 50%.

From these figures one could wonder about the degree of complementarity between the EU and its Southern partners². Previous researches have calculated the MCs-EU complementarity and shown that it is stronger for Belgium, Germany, Holland and France (Dell'Aquila and Velazquez, 2004). More recently, Martinez-Gomez and Arrieta (2009) assess the complementarity between Morocco and the EU. Some remarkable facts may be highlighted. First of all, considering all the agricultural trade Morocco does not show the same complementarity with all the countries of EU. In fact, the authors identify four "categories" or groups of countries within the EU, according to their affinity with Morocco. The highest affinity occurs between Morocco and France, probably because of historical causes. Another group could be called "EU Northern Countries", which exhibit a large complementarity, but less than in the French case. The following category is formed by the European Mediterranean countries (Spain, Italy, Portugal and Greece) registering the lesser complementarity. Finally we can place in the intermediate situation the group of new EU countries after mid 2000's enlargement. The Chart 1 plots the complementarity index for agricultural trade.

2 - Trade complementarity can be measured by the cosine measure COS_{ij} (Linnemann and Van Beers, 1988). In this indicator, value "1" indicates maximum of complementarity level; on the contrary, value "0" means the minimum level of complementarity. It is calculated combining the trade data vectors (imports to country j and exports from country i) for two trade partners; the two vectors are compared by determining the cosine of the angle between them in the n -dimensional commodity space. The underlying concept consists on checking to what extent the imports from one partner mirror the other partner's exports.

Chart 1 - Evolution of agricultural trade complementarity index between Morocco and the EU (2004-2007)

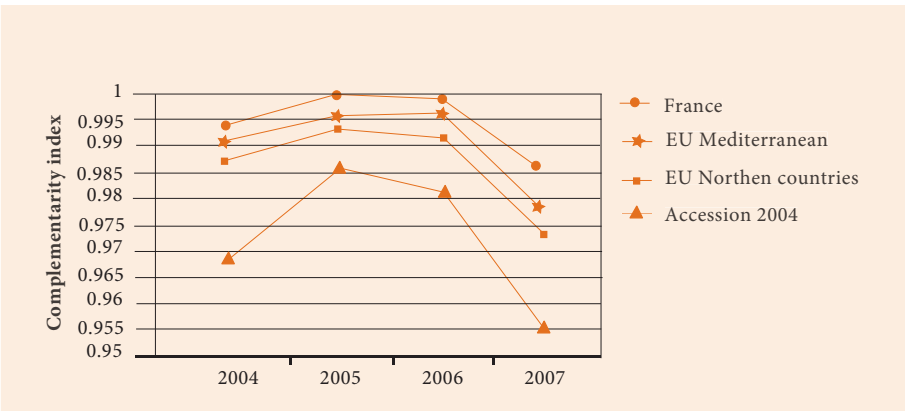


Source: Martinez-Gomez and Arrieta (2009).

A second fact to highlight is that when complementarity is measured only for F&V trade, the complementarity index results in a very high value. Moreover, the group formed by Mediterranean countries climbs to a higher position, paradoxically, at similar level that France. Perhaps such findings could be explained by some entrepreneurial strategies consisting on the diversification of purchases to keep a good portfolio of products, to fill out domestic supply.

Another crucial element to take into account regarding trade in fruits and vegetables in the Mediterranean area is the role played by Non-Tariff Measures. In section 4 we discuss about their implications.

Chart 2 - Evolution of fruits and vegetables trade complementarity index between Morocco and the EU (2004-2007)



Source: Martinez-Gomez et Arrieta (2009).

A case study: entry prices on fruits and vegetables imports

The EU protects some of its fruits and vegetables through the entry price (EP) system. In many cases, the system is applied on a seasonal basis and is subject to special provisions for certain suppliers, such as EP reductions and tariff-rate quotas (TRQ). The EP system itself has received a certain degree of attention in the literature related to the implementation of the Uruguay Round agreements (Swinbank and Ritson, 1995), as well as in the analysis of bilateral preferences granted by the EU to Southern Mediterranean Countries (Grethe *et al.*, 2006). Discussions of the EP system have renewed interest in the context of multilateral trade negotiations, as it is still considered an instrument not fully in line with the spirit of tariffication.

The EP system consists of a two-tiered tariff. When the border price of exports to the EU is above or equal to the EP, an *ad valorem* duty is charged; whereas exports priced below the EP level must pay a supplementary specific tariff after being taxed by the *ad valorem* tariff. The amount of the specific tariff depends on the relationship between the EP level and the border price for the consignment. For some products and origins, reduced EP are applied. Thus, Jordan and Morocco have agreed with the EU to a reduction of the EP for tomatoes, cucumbers, zucchini, artichokes, oranges, and clementines; while both Egypt and Israel have been granted an EP reduction for their exports of oranges. It is worth mentioning that, except for Jordan, the EP reduction only applies to a given quantity, and the preferential EP is accompanied by a reduction (often elimination) of the *ad valorem* component of the tariff.³ Table below shows estimates of the *ad valorem* tariff equivalents of the EP system for tomato as applied in the period 2004-2006 on Moroccan tomatoes (García Álvarez-Coque *et al.*, 2010).

Calculated *ad valorem* equivalents for Morocco (in percentages)

	Ad valorem Tariff Equivalent In-quota	Ad valorem Tariff Equivalent Out-of-quota	Binding TRQ?
January	0	46.9	Yes
February	0	52.2	Yes
March	0	48.4	Yes
April	0	44.4	Yes
15-31 May	0	49	Yes
June	11,5	11.5	-
August	12,2	12.2	-
October	0,7	68.6	No
November	69,2	72.7	Yes
1-20 December	0	62.1	Yes
21-31 December	0	51.6	No

Source: García Álvarez-Coque *et al.* (2010) based on TARIC Database (European Commission).

3 - The review of the EU-Morocco agricultural protocol, not in force at the time of writing this chapter, eliminates TRQs for Moroccan artichokes and oranges, and agrees to a reduction of the EP for three new products: peaches, apricots and table grapes. No TRQ is foreseen for them.

Differences in equivalent tariff out-of-quota and in-quota cause the emergence of a quota-rent. Chemnitz and Grethe (2005) claimed that this system encourages non-competitive behaviour among traders and provides incentives to collusive arrangements in order to obtain much of the preference rent.

The aforementioned paper by García Álvarez-Coque *et al.* (2010) assessed the impact of eliminating EP constraints applied to tomato. The proposed model was of a partial equilibrium nature and took seasonality into account. The impact of phasing out the EP system was measured in terms of the loss in domestic EU sales resulting from the elimination of the system. A significant impact was found for some periods of the year, in particular for tomato imports from Morocco. This was true for the period between October and April, with the greatest impact occurring in October, when EP elimination would reduce EU domestic tomato sales by 12%. At the same time, third-country export gains are also concentrated in specific periods: notably, Moroccan tomato exports in November, 1-20 December, January to April, and 15-31 May. The simulation results indicate that EP could be significantly lowered in several periods of the marketing year without substantially affecting trade. Nevertheless, this conclusion does not contradict the hypothesis that the system helps to stabilize prices in certain periods of the marketing year. The most recent review of the Agricultural Protocol between Morocco and the EU, agreed by the end of 2010, foresees the maintenance of the EP for tomato, though TRQ are significantly increased.

While olive is currently grown in many regions of the world, it is the Mediterranean area where it is grown the most. Close to 90% of olive oil production comes from the Mediterranean basin: Spain, Tunisia, Greece, Turkey, Italy and Syria are its main producers. Besides, it has an intrinsic and traditional link with the Mediterranean area and probably olive oil is the most typical food in the Mediterranean Diet.

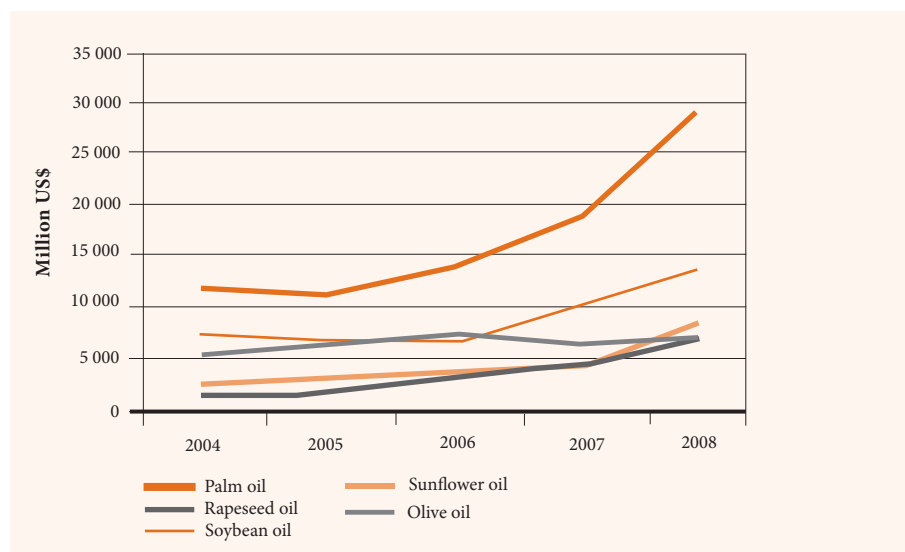
In spite of the recent widespread interest in the Mediterranean Diet, a noteworthy fact is the loss of market share of olive oil out of the total trade in agricultural fats and oils. In value, olive oil accounted for about the 13% of fats and oils market share in 2004, while in 2008 this weight lowered to 7.4%. In terms of quantities traded, the other main vegetable oils experienced a two-digit growth whereas olive oil volume traded reduced by about 10% for the same period 2004-2008.

The evolution of the values globally imported of different vegetable oils is depicted in the Chart 3. The plot shows the sharp growth of the value traded in vegetable oils other than olive oil, chiefly in the case of palm oil.

In the international market of olive oil, a small group of countries dominates the global market. Considering the average of the period 2006-2008, Spain (over 40% of exports share) and Italy (about 25% of exports share) account for around two thirds of worldwide exports. With the addition of Tunisia and Greece, close to 90% of total exports are originated in these four Mediterranean countries. In the imports side, Italy itself is the destination of one third of total imports, whereas the United States share is over 15%. The rest of major importers are split geographically in and out of the Mediterranean basin, such as Spain, France and Portugal, and Japan, United Kingdom and Germany.

Following Lazzeri (2011), a noteworthy fact in this market is that the *per capita* consumption declines in virtually all Mediterranean countries while increases in other non-

Chart 3 - Evolution of world imports value, selected vegetable oils (2004-2008, Million US\$)



Source: Authors' calculations based on FAOSTAT data.

traditional consumer countries. For instance, in the emerging Chinese market imports in 2012 will amount to nearly 63,000 tons and the most optimistic forecasts for the period up to 2015 are as high as 100,000 tons per year. For these countries, the healthy properties of the products are the key determinants of the growing demand and therefore an effort shall be made to ensure quality and to properly inform consumers about the different properties, varieties, origins and applications to a healthy diet. It will allow clearly differentiating olive oil from other vegetable oils.

The WTO response

The previous section highlighted the role of MCs as a market for basic agricultural products and as a source of exports of certain specialty crops. A question emerges on the participation of MCs in the world trading system. Are they adopting a pro-trade position? Most countries in the Mediterranean region have shared a strong interest in taking part in the multilateral trading system. Such willingness reflects a common growth strategy based on an open economy. All the MCs are taking steps to implement the WTO Agreements. This includes the WTO Agreement on Agriculture (AoA) and its commitments to reduce export subsidies, domestic support and import barriers on agricultural products.⁴

The current multilateral trade negotiations began under Article 20 of the AoA, aimed at achieving "substantial progressive reductions in support and protection resulting in fundamental reform". The Doha Declaration (November 2001) confirmed this goal

⁴ - The analysis of trade negotiations and its implications on Mediterranean agriculture has been covered in previous CIHEAM reports. See Akeshbi and García Álvarez-Coque (2001) and García Álvarez-Coque (2006).

pointing to “establish a fair and market-oriented trading system” inserted into a comprehensive Development Agenda. In July 2004, a new deal was agreed in Geneva (the “July Package”) that included an outline (or “Framework”) to be used to complete the “modalities” on agriculture. The Hong Kong Declaration (December 2005) recorded the progress made in the year and a half since then. The July 2008 package was a new milestone on the way to concluding the Doha Round, still under long negotiations. The main task since then is to settle a range of questions that would shape the final agreement of the Doha Development Agenda. Consultations take place among a group of ministers representing all interests in the negotiations.

In spite of the wide range of shared problems in the Mediterranean region, MCs have not followed a single approach as to how framing agricultural and food products in the WTO. Differences in trade policies have been the result of the leeway permitted by the AoA for countries to design their own agricultural policies. The experience of agricultural negotiations shows a variety of positions among MCs with respect the Doha Agenda. While developed MCs, namely the EU member states, argue the need to easy farm reform through maintaining support but reallocating it towards policies of a less distorting nature, developing MCs seem to withstand against farm subsidies and border protection in OECD countries, in particular the EU. In spite of the existence of negotiating groups, the analysis of positions in the agricultural negotiations remains complex:

- A group of MCs (Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain) is part of the European Union and they coordinate their position in the WTO with the rest of the EU Members States. This group of countries belong to what represents the positions defending a “strong CAP”, including softening the transition to less distorting subsidies. It is likely that this position remains strong in the next CAP reforms, in spite of the budget and international pressures on farm subsidies and of the pro-market view in some Northern European countries such as UK and Sweden.
- Israel belongs to the G-10, a group of countries (Norway, Japan, Switzerland...) that gives substantial weight to multifunctional role of agriculture sector in meeting non-trade objectives, with implies reluctance against trade liberalization.
- Egypt is a member of the G-20 group formed by developing countries including China, India and Brazil, among others. They in general favour agricultural liberalisation and reduction of farm support in OECD economies. Some countries in the group believe that improvement in market access should be cautious in poor countries.
- Turkey is a member of another group, the G-33, led by Indonesia, which is focused on proposals for special and differential treatment for developing countries and limited trade liberalization for special products.
- Morocco and Tunisia share some of the objectives of the G-20 and the G-33. However, their participation in country groupings has been mainly through the African Union (which also includes Egypt) and through the G-90. This is an alliance including most members of the African Union, ACP and LDCs grouping. It shares with the G-20 and the G-33 the idea that agriculture plays a critical role in economic development and poverty alleviation. They in general invoke free access to developed countries’ markets.

- New members who joined very recently the WTO (FYR of Macedonia and Albania) would make very little cuts in domestic support.

A point in common in the Mediterranean basin is that no country in the region is pushing for a full trade liberalisation of agricultural markets. Instead, many countries in the region raise the issue of flexible rules for trade liberalization as most countries in the region have vulnerable agricultural regions. Most MCs are under pressure in this respect, but developing MCs also want to export and therefore would like to see the EU markets opened. The Euro-Mediterranean process is a step forward in such direction. In addition, developing MCs aim at achieving the removal of trade-distorting support in OECD countries. EU direct payments have been seen by developing MCs as a signal of the double standard in the interpretation of the world trading system that favours EU farmers with respect to farmers in the South and East of the Mediterranean basin.

The maintenance of agricultural support through minimally distorting policies (“green box”, in the WTO terminology) is a key factor for the continuation of agricultural policies in the region, aimed at rural development and poverty reduction. Once this is accepted, there could be a sign of consensus of interests between the Northern and Southern shores of the Mediterranean basin:

- MCs would like to introduce policies addressed to solve problems of poor rural areas, and which could meet the test of at most minimal trade-distorting support.
- Northern developed countries, basically the EU, are embarked on deep reform towards decoupled support. The current EU debate includes the reform of CAP’ single payment scheme (European Commission, 2010). This may have been helpful to soften the social impacts of adjustments but it is not very effective to promote a sustainable development in rural areas. Territorial policies supporting environmental contracts for sustainable agriculture and knowledge creation keep being advisable in the Southern EU areas.

The “modalities” texts discussed in the WTO commits members to substantial improvements in market access for all products and everyone except least-developed countries will have to contribute by improving market access for all products. This means that all WTO Members in the Mediterranean region will have to make concessions in market access. A question remains on the implementation of the principle of flexibility, to address sensitive products and special products based on criteria of food security, livelihood security and rural development needs. The number of products under such categories remains an issue of the agricultural negotiations.

During 2011 the progress in Doha Round was slow. WTO parties are discussing the chances for a December package that will actually represent a set of partial agreements, far beyond the comprehensive scope that inspired the Round after its launching in 2001. In addition, Doha Round will have little effect on the spread of Non-Tariff Measures, that show growing in trade among MCs.

Non-tariff measures

Consolidating a free trade area in the Euro-Mediterranean region will require a better harmonization of non-tariff measures in order to favour that they foster trade rather than restricting it. The Non-Tariff Measures (NTM) depend on public regulations. A broad classification of NTMs elaborated by UNCTAD can be found in the Table 2. NTMs are often considered to be trade barriers and they are gaining importance as tariffs tend to be eliminated, as it is the case in the Euro-Mediterranean free trade area. NTMs do not necessarily present barriers, which reduce trade as many standards are precisely needed to facilitate trade. For example, the existence of Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) measures is critical for international trade between countries since risks and information issues can be tackled and the resulting benefits potentially lead to welfare gains, in addition to health and safety benefits. In fact, the costs and benefits of the measures need to be considered in order to ensure a balanced analysis of their impact.

Table 2 - UNCTAD classification of NTMs

(A) Sanitary and phyto-sanitary measures (SPS)	Regulations/standards to protect human, animal or plant life or health.
(B) Technical barriers to trade (TBT)	Regulations/standards referring to technical specification of products and conformity assessment systems.
(C) Other technical measures	Pre-shipment inspection and custom formalities not related to SPS/TBT.
(D) Price control measures	Price control measures are implemented to control the prices of imported articles.
(E) Quantity control measures	Restraining the quantity of goods that can be imported. Restrictive licensing, quota, or prohibitions.
(F) Para-tariff measures	Other measures that increase the cost off imports in a manner similar to tariff measures, including customs surcharges, additional taxes, internal taxes, and decreed custom valuation.
(G) Finance measures	Regulating the access to foreign exchange for imports and define the terms of payment.
(H) Anti-competitive measures	Special preferences to a limited group of operators.
(I) Export related measures	Measures applied on exported goods.
(J) Trade related investment measures	Local content measures, which restrict the level of imported components.

Table 2 - Contd.

(K) Distribution restrictions	Restriction on the way the products are distributed through license or certification requirements.
(L) Restriction on post-sales services	Measures restricting producers of exported goods to provide post-sales service in the importing country.
(M) Subsidies	Financial contribution by a government or government body to a production structure, being a particular industry or company.
(N) Government procurement restrictions	Measures controlling the purchase of goods by government agencies.
(O) Intellectual property	Patents, trademarks, industrial designs, lay-out designs of integrated circuits, copyright, geographical indications and trade secrets.
(P) Rules of origin	Regulations and administrative determinations to determine the country of origin of goods.

Source: UNCTAD (<http://ntb.unctad.org/Default.aspx>).

The MCs are in different stages of harmonization of their standards with the EU. It appears that stringency of applying measures by the own MCs seems to be relatively stronger at the borders as compared to a less effective monitoring in the domestic market (De Wulf *et al.*, 2009). In the case of SPS measures there are a number of general problems that affect exporters to the MCs such as *ad hoc* application of shelf life procedures or multiplicity of documents and regulations required in each country. As a result of reforms under the umbrella of the Euro-Mediterranean integration, the average clearance time in most MCs has dropped significantly, but further reduction is needed to enhance economic integration.

Recent research has clearly illustrated the importance of NTMs in trade. Hoekman and Nicita (2008) show that the trade restrictiveness of NTMs plus tariffs is at times twice as high as that of tariffs alone. The importance of the trade restrictiveness of the NTMs therefore suggests that initiatives towards implementing deep integration between the EU and the MCs should pay special attention to reducing these NTMs. Border rejections are indicators of exporting countries to comply with food safety and quality requirements imposed by importing countries. During the period 2003-2008, the Rapid Alert System for Food and Feed (RASFF) reported a total of 1,123 border rejection notifications concerning fruit and vegetables imported from the MCs to the EU (Grazia *et al.*, 2009). This represents an average border rejection frequency of 0.0493 rejections per 1000 tons of imported goods, which does not seem a dramatic figure. The next table illustrates the main products affected by border rejections and the main risk sources for each country of origin. The highest number of border rejections concerns groundnuts in the case of Egypt and Israel, and edible nuts for Morocco, Syria and Turkey.

Table 3 - The absolute number of border rejections per country of origin and hazard category (2003-2008)

Country of origin	Main products	Main risks
Egypt	<ul style="list-style-type: none"> - Groundnuts - Other fresh or chilled vegetables - Oranges, mandarins, clementines and similar citrus hybrids - Fruit, fresh or dried, n.e.s. 	<ul style="list-style-type: none"> - Mycotoxins - Pesticide residues - Illegal trade/improper documents
Morocco	<ul style="list-style-type: none"> - Edible nuts - Other fresh or chilled vegetables - Vegetables provisionally preserved - Vegetables, dried, whole, cut, sliced, broken or in powder. - Vegetables, prepared or preserved, n.e.s. 	<ul style="list-style-type: none"> - Mycotoxins - Pesticide residues - Biotoxins / Heavy metals
Syria	<ul style="list-style-type: none"> - Edible nuts - Vegetables, prepared or preserved, n.e.s. - Jams, fruit jellies, marmalades, fruit or nut purée and fruit or nut pastes 	<ul style="list-style-type: none"> - Mycotoxins - Additives - (Potentially) pathogenic micro-organisms
Turkey	<ul style="list-style-type: none"> - Edible nuts - Fresh or dried figs - Fruit, fresh or dried, n.e.s. 	<ul style="list-style-type: none"> - Mycotoxins - Additives - Pesticide residues

Source: calculations based on Rapid Alert System for Food and Feed (RASFF), data by Grazia et al. (2009).

According to the quoted authors, the main exporting sectors from MCs are less affected by border rejections as a consequence of a higher compliance effort undertaken by exporting countries, including infrastructure, skills, human resources, control and test procedures. In fact, while there are NTMs affecting negatively the trade, the compliance with certain private standards (e.g. GlobalGAP) can bring to producers significant benefits, such as reduced agrochemical use and a framework that guides good agricultural and management practices. Unit costs of compliance decrease overtime, probably caused by economies of scale (Gonzalez-Mellado *et al.*, 2010). When export supply chains are characterized by a high level of atomization, and a scarce degree of vertical integration exports seem to be particularly addressed to low-value markets, which are less exigent in terms of food safety and quality requirements. Some producers are not prepared or willing to change their production system to comply. The lack of qualified laboratories to analyse SPS requirements limits the exporters' ability to guarantee their supplies to the European market. The main effects of these NTMs are increasing direct and indirect

costs in production and exports. Due to NTMs set on the EU market, some olive companies re-orientate their exports to other regions, where standards are not so restrictive and expensive. Therefore, the ability for exporting countries to meet food safety standards imposed by importing countries is endogenously determined by the supply chain organization. When it is well organised, the probable impact of NTMs is lower and probably positive to help export products to comply with requirements of EU markets.

Emlinger (2010) analyses the implications of NTMs in the entry of fruits and vegetables from different sources into the European markets. She points out that Israel's ability to fulfill these requirements is the best, even compared with EU countries. On the other extreme, Tunisia, Syria, Jordan, Algeria and Lebanon show the worst performance in this field.

Agriculture and the Euro-Mediterranean Partnership

As indicated before, the EU and most of the MCs are members of the WTO. Therefore, they participate in the multilateral trading system and assume the obligations of the AoA (including commitments to reduce export subsidies, domestic support and import duties on agricultural products). But, at the same time, the EU and each one of the MCs have also bilateral agreements within the framework of the Euro-Mediterranean Partnership. These Association Agreements include a scope of agricultural trade liberalization. At present, there is more progress of agricultural trade liberalization under the Euro-Mediterranean Partnership than under the multilateral round of negotiations promoted by the WTO.

Agreements

The Euro-Mediterranean integration process in agriculture has witnessed difficulties towards its progression. The main reason is that agriculture, and particularly the F&V sector, has been and keeps on being one of the most conflictive aspects in the relationships between the EU and the MCs (García Álvarez-Coque and Jordán Galduf, 2006; García Álvarez-Coque *et al.*, 2008). Restrictions to agricultural trade flows persist nowadays in the Mediterranean region. Farming organizations in the North are against further market concessions to the South, as they fear that a higher international competition may endanger the subsistence of European Mediterranean farmers.

The strategy followed in the Euro-Mediterranean Agreements includes a series of reciprocal agricultural concessions with the compromise to negotiate, later on, greater concessions on the basis of a product-by-product assessment, while planning their revision targeted at a higher liberalization of agricultural exchanges. Meanwhile a number of intra-Mediterranean arrangements have been activated throughout the Mediterranean region (see table 4). Examples are the Agadir process, the FTA between Turkey and other MCs partners, apart from the other agreements including developing countries outside the Mediterranean region. Until now, the process is far from giving results, as MCs show a little diversified export structure and intra-Med trade is still around 5% of total exchanges.

Table 4 - FTA between Mediterranean countries

Countries involved	Entry in force
Israel-Turkey	1997
Greater-Arab FTA (GAFTA), involving Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestinian Territories, Syria, Tunisia, and other 10 Arab countries	1998
FYROM-Turkey	2000
Albania-FYROM Bosnia and Herzegovina-FYROM Croatia-FYROM	2002
Albania-Croatia Bosnia and Herzegovina-Turkey Croatia-Turkey Albania-Serbia and Montenegro Croatia-Serbia and Montenegro	2003
Bosnia and Herzegovina-Croatia Israel-Jordan upgrade Jordan-Egypt-Morocco-Tunisia (Agadir process)	2004
Palestinian Territories-Turkey Tunisia-Turkey	2005
Morocco-Turkey	2006
Egypt-Turkey Syria-Turkey	2007
Albania-Turkey	2008
Jordan-Turkey	2009

One of the potential advantages of the intra-Med integration is the attraction of FDI, which is still low (1% of total EU's FDI). Such lack of investment attraction seems related to the fragmentation of the regional market as well as the weak business environment and lack of transparency of the regulatory framework.

North-South integration has seemed another appealing strategy for some governments in the Mediterranean region, which includes not only the EuroMed process but also the integration with the USA. This has been the case of Jordan (2001) and Morocco (2006). Since then, the US trade surplus with Morocco has risen from 79 million dollars in 2005 to over 1 billion dollars in 2009, opening a market for US fats, dairy products and cereals. The Box below briefly summarizes remarkable aspects of the USA-Morocco agreement.

The USA-Morocco free trade agreement

USA represents a small share of Moroccan agricultural exports. Nevertheless, a strong political commitment between the two countries led to the signature in 2002 and implementation of the Agreement in 2006.

In the case of agricultural goods, the liberalization process is based on different lists of products with different periods for the phasing out of tariffs. They range from immediate elimination to other products liberalized over a period of 25 years. Certain exceptions – mainly soft wheat – will be out of the elimination scheme. On the other hand, Moroccan goods face no tariff at USA borders. However, NTMs for entering into the USA markets remain.

In figures, between 2005 and 2009, exports from the USA to Morocco increased threefold – from 6.1 to 18.8 billion dirhams, whereas those from Morocco to the USA United States rose only very slightly from 2.5 to 3.6 billion dirhams. The boom in American exports to Morocco is mainly due to increased export of agricultural goods, such as maize and oilseeds.

Source: Akesbi (2010).

Impact of further Euro-Mediterranean liberalization

Tariff concessions imply significant price advantages for the preference-receiving countries (Martinez-Gomez, 2007). However, after the experience of 25 years of commercial preferences, they have not translated into a great impulse for the exports dynamic of the MCs, but simply a continuation of the traditional trade flows from these countries to the EU. In fact, there has been a limited impact of the Barcelona Process on agricultural trade (Abis, 2011b). For instance, in 2009, the agricultural exports from MCs to the EU increased only 7%, although Morocco was an exception, with an increase in exports of 19%. In any case, further consideration can be taken about the potential impact of a deepening of the trade liberalization process, by means of the progressive increase of zero-rated tariff quotas and the reduction of other agricultural trade protection mechanisms.

In theory, progressing in the reciprocal trade openness, as stated in the “road-map” established in the Euro-Mediterranean Conference held in Barcelona in November 2005, will imply an increase of trade flows both in North-South and South-North directions, generating new opportunities to the actors of both sides of the Mediterranean. Clearly there are risks involved in such openness, due to the social consequences arisen from the adjustment required in the less competitive sectors, both in the North and in the South of the region, including the growing risk of food dependency on imports of basic products in MCs. It is, therefore, necessary to modulate in time the opening process and to apply other accompanying policies that can attenuate the social costs.

Quantitative exercises (such as García Álvarez-Coque *et al.*, 2010) suggest that impacts of trade liberalization on F&V market will depend on the nature of the negotiations (bilateral and multilateral); the extent that the European products differentiates with respect to imported products; the season within the marketing year when tariff reductions take place, and the relative competitiveness of the domestic supply, related to a variety of factors. Even though the concessions granted have not yet implied considerable trade flows, certain saturation problems have already appeared in the Community markets. Their severity has been increased by the perishable nature of many of the Mediterranean

products, even with occasional temporary price crashes that affect the profitability of a whole marketing year.

It is difficult to deny that many producing agricultural areas in Southern Europe are in trouble. Rural economies are not exempt of challenges, in many cases due to the aged labor force, the weak entrepreneurship, and the environmental effects related to the preservation of landscape and the management of territory.

With this broad picture of rural areas, the argument of an agricultural liberalization impoverishing Southern European agriculture loses power. It is true that international delocalization of production is taking place outwards the EU. However, this should not be a long-term problem for the European countries as long as their agro-food economy is reoriented to activities that offer a higher added value and are intensive in technology. On a long-term basis, the agro-industrial system of the Mediterranean regions in the EU would profit from exporting technology and services to the MCs and from the integration of the whole Mediterranean food and agricultural system in the European markets. This is a future picture that makes sense to the younger generations.

This economy-wide perspective does not hide the income difficulties currently faced by the agricultural areas specialized in F&V, many of them located in Italy and Spain. The crisis is largely explained by, firstly, a fall in F&V consumption related to changes in life style towards convenience; and secondly, the lagged response of supply when assets are specific and lack flexibility (permanent crops, small farms). This equation results in overproduction. However, there is a third factor of crisis that makes the marketing of horticultural products to be increasingly different from what it was just a decade ago. This factor refers to the growing relevance of the negotiation capability of modern food retailing. Under its power, the producers (farmers, traders and food processors) tend to adjust their production to the strategies of the leading groups.

The role of policies

Most of the effects of globalization can be managed through territorial policies equipped with adequate instruments, like the specific aid scheme supporting Producer Organizations (POs). In following pages we refer to two case studies of policies adopted in the EU with significant impact on small and medium farms. The first example looks at the specific support given by the CAP to producer organizations as a way to improve supply coordination and farmers' insertion into the value chain. The second case refers to the role of the direct aid scheme, which is under continuous discussion.

The role of producer collective action in the marketing of fruit and vegetables

Coordination and organisation are key words when policies tailored to the F&V sector are considered. The F&V Common Market Organisation (CMO), reformed in 2007, draws its support to horticultural farmers on the creation and enhancement of producer organisations. These can be seen as engines to concentrate production given the low level of sales per farm cooperative in Italy and Spain in comparison with other countries in Northern Europe. Still, supply concentration is not enough.

Producer organisations should be considered as an effective way to increase collaboration between growers and other members of the supply chain. All stakeholders share interests in cost reduction, quality upgrading and risk management. If this is recognized, there is a need for policies orientated to undertake collective action approaches within supply chain agribusiness.

The productive and commercial structure of the F&V industry in the EU is not adapting well to the changing market conditions, requiring different products and improved guarantees of quality and environmental standards (García Álvarez-Coque *et al.*, 2007). Nevertheless, situation varies among EU member states. For instance, the Netherlands and Spain illustrate two different situations. Nowadays, 92% of horticultural production in the Netherlands is sold through 22 producer organizations. By contrast, in Spain there are 625 producer organizations that only account for 44% of Spanish F&V production.

Most F&V cooperatives in Spain were created to channel contracting between growers and wholesalers or retailers. This was supposed to reduce the information asymmetry bias against growers and to provide them with insurance against the failure to receive payments, which is still seen as one of the most important concerns for independent growers. However, producer organizations in Spain account for a relatively low total percentage of total marketed production.

Thus, fruit and vegetables cooperatives in Spain have not been very effective in improving growers' market power. Moreover, lack of trust remains a factor in both the relationship between farmers and cooperatives, and between individual cooperatives and the second-tier cooperatives. While normally the cooperative was a solution to the information asymmetry problem, it can re-emerge within a cooperative when there is a lack of trust between the members and the managers of the cooperative.

What remains to be answered is, therefore, the effectiveness of those incentives to encourage a culture of collective action in producing areas. As seen in the Spanish case, the behavior of many cooperatives does not contribute to strengthening their negotiating power vis-à-vis retailers. Among the reasons for this situation is the lack of professional management in cooperatives, which leads to "supply oriented" strategies, strong competition among cooperatives, and lack of transparency in the decision-making process within the cooperatives. Very often, coop members receive pool payments as a residual of the producer organizations earnings net of operational costs and grower payments. They are, thus, disconnected from market prices and price differentials due to quality. Market efficiency is not enhanced by a public scheme that favors structures that can be seen as formed to "crop the aids" instead of to capture benefits from grouping the supply, and by the fact that many private stakeholders that do not belong to associations are not eligible for public support.

CAP reform and Euro-Mediterranean Partnership

Finally, we shall point out that the CAP reform process should facilitate the structural adaptation of the areas that could be more affected by the agricultural liberalization, hence promoting a stronger impulse of the Euro-Mediterranean Partnership. The idea

is to define a CAP that could make compatible the support to the rural world with a wider external openness, including the products from the MCs. Such approach for rural development would have many precise objectives based in the improvement of the commercial and production structures, the quality of food and the environment. Southern Europe receives a considerable amount of public resources that could be spent with more efficiency and equity, even if that would mean a higher degree of co-financing by national and regional administrations. Regarding this subject, the agricultural policy could be integrated as one more component of the regional policy.

Indeed, since the CAP reform in 2003, producer support in the EU is becoming, to a large extent, decoupled from production (and included in a single payment scheme) and this process has been confirmed by the so-called “Health Check” of the CAP in 2008, with the possibility to transfer resources to envelopes considering territorial and environmental payments as well as the strengthening of rural development policies. But further reform of the CAP is needed to address public concerns (such as environment and extensive mountain systems). The transition has to be completed from “decoupling” to “targeting”, and policies to promote strong producers’ organizations and a value chain approach are very much required. The CAP reform proposals for 2013 are referring to a more even distribution of the basic support and the reallocation of the budget to environmental payments, more adapted to the challenges faced by agriculture in the present century (European Commission, 2010).

Conclusion

The progress in the process of creation of a Euro-Mediterranean free trade area should logically incorporate the liberalization of agricultural exchanges. If EU countries currently have a competitive advantage in many industrial sectors and in the continental agriculture itself, Mediterranean Partner Countries also have this advantage for some fruit and vegetable products, so it does not seem reasonable to restrain the reciprocal openness to the manufacture market.

However, a strategic long-term view of Mediterranean agriculture would allow for synergies between both shores of the Mediterranean (IPMED, 2009). This includes: 1) supporting synergies between both shores of the Mediterranean enhancing cooperation between POs in the North with stakeholders in the South; 2) A careful process to trade liberalization that assesses its impacts on traditional farming systems before further moves are carried out; 3) Territorial policies supporting organization, business oriented practices, knowledge creation towards sustainable practices keep being advisable in the F&V sector.

The Euro-Mediterranean integration cannot be seen as a simple Free Trade Area. In fact, the agricultural issues refer to the social and cultural implications of the rural systems across the Mediterranean region, which go beyond trade. A growing concern refers to the negative impacts of trade liberalisation on the farming systems, in particular if liberalisation is not gradual and lacks accompanying policies to support the adaptation of the farming systems. An issue is that of volatility in the global markets of basic products. This can be tackled with an agricultural policy that not only focus on agro-

exporting agriculture but also on improving local systems to allow certain self-reliance and avoid growing food dependency. Strengthened risk management tools have to be devised to soften the effects of price instability on consumers and producers.

By closing its markets the EU hardly contributes to help developing countries in their escape from poverty. The EU can favor policies that combine increased market access for Mediterranean products with the development of domestic capacities in the MCs. Rural people in both sides of the Mediterranean basin are affected by a great deal of common problems, with different intensities but needed of similar approaches. Some of these problems are of a special concern, such as the water scarcity, the opportunity for improving quality and the lack of adequate organisation. Agro-food policies must address to the specificities of the supply chain, which relate to risk management, quality assurance, human capital, logistics and information technology, promotion of consumption and other characteristics that cannot be tackled through traditional subsidies. The EU has a chance in the definition of a future European Neighbourhood Policy for Agriculture and Rural Development (ENPARD) of enhancing the cooperation with Mediterranean Partner Countries, targeting on rural citizens. Not only trade but also international cooperation, with focus on added value, training, innovation and civil society's participation are mostly needed.

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7 PART SEVEN

HEALTH
and food safety



PROTECTING EUROPEAN CONSUMERS FROM FOOD-RELATED RISKS

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The confidence of European consumers and trading partners was badly shaken by the food crises of the late 1990s and early 2000s. In response, the European Commission's White Paper on Food Safety in 2000 introduced the concepts of a science-based food regulatory system and the functional separation of risk assessment and risk management. It laid the groundwork for Regulation (EC) No. 178/2002 which, as well as introducing the General Food Law, established the European Food Safety Authority with its emphasis on scientific excellence, independence, openness, transparency, responsiveness, – many of the factors deemed to be lacking during the BSE and dioxin crises in particular.

Since its founding in 2002, EFSA's remit of risk assessment and risk communication has not changed but its work has evolved to encompass many different areas of food safety. Today, EFSA provides scientific advice on potential risks associated with the food chain such as contaminants in food, biological hazards, genetically modified organisms and food additives but also in areas such as nutrition, environmental risk assessment, risk/benefit assessment and animal welfare assessment.

This article begins by exploring the historical context of food safety in Europe, giving examples of how these and other issues have shaped the way in which public bodies have addressed food safety and consumer protection over the last hundred years. A detailed explanation of EFSA's role follows, including an overview of the ways in which EFSA co-operates with partners in Europe and beyond. EFSA's collaboration with Mediterranean countries under the European Neighbourhood Policy is also examined.

The second part of the article focuses on EFSA's work in the field of nutrition, starting with an overview of the EU's strategy in this area and then looking at how EFSA collects and analyses data from Member States to provide scientific advice on dietary habits in Europe. This work is key, not only for understanding the extent to which consumers are exposed to potential hazards such as contaminated food, but also for providing policy makers with information about the nutritional intakes of different populations, allowing

them to set targets regarding healthy diets. Another important aspect of EFSA's role in this area is the scientific substantiation of claims regarding the nutritional and health benefits of foods. The article gives a detailed insight into the regulatory context of health claims and explains EFSA's approach to assessing them. Specific examples of the Authority's assessment of health claims related to the Mediterranean Diet are also given.

The final part of the article explores the second pillar of EFSA's remit – risk communications. It explains the tools EFSA uses to better understand the needs and concerns of European consumers, such as the Eurobarometer survey on consumer perception of food-related risks, and highlights the challenges the Authority faces in communicating these risks to diverse target audiences. In this regard, co-operation with Member States is key and EFSA's Advisory Forum Communications Working Group, a network of risk communicators from national food safety agencies in the 27 Member States, supports delivery of consistent, coherent messages about food safety issues across Europe.

The EU food safety system

A look at food safety over the years

Food safety is an issue that has concerned humans for many hundreds, if not thousands, of years. Even in ancient Rome, fines existed for the sale of meat that had not been inspected by the appropriate authorities. Over time, as humans accumulated more knowledge on the sources of food-borne illnesses and developed more advanced techniques for food preparation and preservation, specific food safety laws were introduced to protect consumers. In Europe, as early as 1836, Denmark created a list of permitted substances for food colouring to guard against contamination from harmful colours and dyes, and in 1842 the Council of Madrid passed food safety regulations covering foods from animal sources. Thus, gradually food production and processing was subjected to more regulation and monitoring and the surveillance of food safety was delegated to specialised bodies and agencies.

The story of food safety in the EU has moved on significantly since the beginning of European integration in the 1950s. After the signing of the Treaty of Rome in 1957 and the establishment of the European Economic Community, the free circulation of goods between Member States made food products from other countries easier to obtain. However, the production and storage of food relied largely on traditional methods and the majority of products were not transported across great distances as preservation techniques remained simple and transport networks were limited. Still at this point, no standard continent-wide food safety measures existed in Europe; instead, national governments introduced and enforced their own rules.

As living standards and the wider economy improved in the 1960s, the selection of foods on offer in EU countries expanded and the way in which food was sold and preserved began to evolve. Food was increasingly pre-packed and this played a crucial part in keeping food fresh and safe. The 1960s also saw the creation of the Common Agricultural Policy (CAP), which began as a mechanism to subsidise the production of basic foodstuffs and to promote self-sufficiency and food security. Over time, the CAP has developed to encompass other issues such as food safety and the environment.

With the development of intra-Community trade, the journey food took before arriving on the average European's plate became longer and more complex, thus increasing the chances of unwanted bacteria and other harmful organisms finding their way into food products. With relatively undeveloped hygiene systems and little capacity for microbiological testing, food poisoning posed a greater threat to consumers' health than it does today.

In this context, the first significant pieces of legislation on animal health entered into force in 1964, addressing both intra-Community trade in bovine animals and swine and health conditions for the production and marketing of fresh meat. These new rules, limited to requirements for fresh meat, signalled a harmonised approach to animal health that Member States were bound to follow; over the next decades, further hygiene legislation was developed and implemented for other food groups, including eggs, milk products, poultry meat, fishery products and game meat.

At the international level, in 1963 the World Health Organisation (WHO) and the Food and Agriculture Organization of the United Nations (FAO) established the Codex Alimentarius Commission, a body which sets standards relating to international food and feed safety.

In the 1970s, security of supply was no longer an issue in the EU and worries about food started to take a new form. In 1971, the EU established harmonised hygiene requirements for the treatment of poultry meat in slaughterhouses, storage and transportation. The EU also laid down health rules for imports of cattle, swine and fresh meat.

As a contingency measure to guard against the possibility of food crises, in 1979 the EU set up a Rapid Alert System for Food and Feed (RASFF). The system – which is still in place today – aims to provide the responsible authorities in Member States with an effective way of exchanging information when there is a risk to public health from a food or feed product.

By the 1970s, pesticide use became more widespread with the emergence of large-scale farming practices and technological advances in farming. Although it was clear that pesticides played an important role in modern agriculture, the threat that they posed to humans, animals and the environment when used improperly meant that strict rules and controls needed to be developed to regulate their use.

At the same time, food additives and flavourings started to become an integral part of the modern food chain as localised production declined and large scale manufacturing grew. Manufacturers needed help in prolonging shelf lives and making processed food more tasty and attractive. However, these chemicals had to be carefully regulated to ensure that they did not adversely affect human health. For that reason, a whole body of EU legislation has been built up to regulate pesticides, additives and flavourings.

The 1970s was also the decade in which the first harmonised legislation on food labels was introduced. These rules covered the compulsory information operators had to include on labels, such as the name of the product, the list of ingredients, the use-by date and so on. Over the following years, this legislation has been revised; the last revision concerned labelling of potential allergens such as nuts, cow's milk, mustard and shellfish.

In the 1980s farming reached a crisis point in Europe, with over-production leading to the infamous surpluses in food production. The need to redress such problems would later prompt a series of reforms to the EU's Common Agricultural Policy, and a shift to thinking more about quality, as opposed to just quantity, of food produced in the European Union.

The 1990s saw a considerable shift in consumers' perception of food. In light of several food crises in the 1980s and early 1990s (see below), citizens questioned what they were really eating and how much confidence they could have in the products that were being sold to them. The 1990s also led to the establishment of several national food safety agencies within Member States, a model that has continued in recent years as the EU has enlarged.

EU legislation was added to and amended, in line with scientific and technological developments, so that by the mid-1990s there was a comprehensive set of Directives on food hygiene for specific food types. While these laws were an important part of ensuring food safety, they were often regarded as complex and cumbersome by those who had to apply them. Therefore, the Commission began to reflect on how to improve the hygiene legislation so as to heighten consumer protection and also clarify and simplify the rules which food producers had to follow.

The publication of the commission's *White Paper on Food Safety* in 2002 marked an important milestone for EU policy in this area. In this paper, the European Commission outlined an entirely new approach to EU food safety legislation. One of the main principles set out in the White Paper was that EU food safety rules should apply "from farm to fork". This means that every single step in the food production chain – from farming to retail – is covered by EU food safety legislation. More responsibility was placed on food operators for ensuring that products reaching EU consumers were safe for consumption. The legislation that followed the White Paper – the General Food Law (2002) – established a clear separation between scientific risk assessment and risk management in the EU food safety system and created the European Food Safety Authority (EFSA).

The White Paper also paved the way for a complete overhaul of EU food hygiene legislation. In 2004, the "Hygiene Package" was adopted, replacing the numerous hygiene directives with a harmonised, simplified and comprehensive set of rules on hygiene which were to apply at every stage of the food chain. This legislation, which entered into effect on January 2006, laid down general rules on food and feed hygiene, as well as specific hygiene rules for food of animal origin.

In addition to the hygiene legislation, new rules also entered into force in January 2006 on food and feed controls. Controls are essential in ensuring that EU food law is fully complied with, and that products put on the EU market meet the required safety standards.

How is the EU food safety system organised?

Although measures have been in place for a long time to better protect consumers from potential food safety concerns, isolated food safety incidents affecting large numbers of people nevertheless continue to happen even today. The recent outbreak of a rare

strain of *E.coli* in Germany and France is a case in point; others include the contamination of wine with glycol in Italy and Austria in the 1980s, BSE or “mad cow disease” in the UK in the 1990s, the Belgian dioxin crisis in 1999 and the discovery of melamine in milk from China in 2008. These examples show that food safety should not be taken for granted, but requires constant vigilance.

Moreover, as the recent *E.coli* outbreak has shown, food safety issues are not confined to national borders and can quickly escalate to an international and even global level. The EU is the biggest importer and exporter of agricultural products in the world; in 2010 this trade was valued at almost €175 billion¹. The EU is part of a global market for food with a wide range of sources where any single food product may contain ingredients from across the world. As food safety standards may differ considerably between countries there is a need to ensure that consumers are protected from risks associated with exposure to harmful products in the food chain.

The food crises in the 1990s, particularly those involving BSE and dioxins, caused considerable public concern and damaged consumer confidence both in the European food supply and in the capacity of public authorities to fully protect consumer interests. It was against this background that a recast of the European food safety system was undertaken, first outlined in the EC *White Paper on Food Safety*.

Under the legislation that followed the White Paper (the General Food Law 2002), EFSA was set up as an independent risk assessment body to provide the EC, the European Parliament (EP) and Member States with timely scientific advice on risks in all the fields which impact directly or indirectly on the food chain. EFSA is also tasked with the communication on risks associated with the food chain. The core principle underlying this new system is that the decisions risk managers take to protect consumers are grounded in robust scientific advice provided by an independent risk assessment body. The Authority’s remit is strictly to deliver opinions and advice, not to legislate or inspect, which are the responsibility of risk managers: the EC, the EP and the Member States.

The legislators – the EC, the Member States and the EP – also acknowledged the fact that the food chain is a continuum and that food safety issues cannot be tackled in neatly packaged boxes. Rather, the food chain is closely interconnected and food safety must be addressed in an integrated manner by all parties. Everything that happens in the field, on the farm, in the animal, in plants, in the environment can affect the nutritional value and safety of what ends up on our plates. This means that a large number of different stakeholders, from farmers, food producers and retailers to risk assessors and policy makers, each have a responsibility to ensure that food is safe and to promote consumer confidence in Europe’s food.

While its primary focus is on EU Member States, EFSA thus also promotes closer collaboration on food safety issues within the Mediterranean region in the framework of the EU neighbourhood policy.

Another element of the EU food safety system with implications for neighbouring countries and trading partners is the EU’s Rapid Alert System for Food and Feed

1 - European Commission, DG Trade: http://trade.ec.europa.eu/doclib/docs/2006/june/tradoc_129093.pdf

(RASFF), established in 1979. The RASFF covers not only EU Member States but also the countries of the European Free Trade Association (EFTA). The task of the RASFF is to provide risk managers within the EU – Member State national authorities and the EC – with a tool to exchange information about serious risks detected in food or feed. This information helps all Member States to act rapidly and in a co-ordinated manner in response to the corresponding health threat. The RASFF plays a particular role in the monitoring of trade in foodstuffs.

EFSA is responsible for scientific risk assessment in the area of food and feed safety, nutrition, animal health and welfare, plant protection and plant health. The Authority's work covers all stages of food production and supply, from primary production through to consumer exposure.

EFSA's risk assessment work is carried out by Scientific Panels, each of which is composed of highly-qualified experts in scientific risk assessment. All experts are appointed through an open selection procedure on the basis of proven scientific excellence. They are drawn from diverse backgrounds and offer a wide range of complementary skills and experiences in relevant areas of science. By working together in a collegial way, EFSA experts provide independent scientific advice to support risk managers in making timely, informed decisions to protect consumers. The Scientific Panels are supported by EFSA's Scientific Committee which provides guidance on scientific matters of a horizontal nature. The different areas in which the Panels work are:

- Animal health and welfare;
- Food additives and nutrient sources added to food;
- Biological hazards;
- Food contact materials, enzymes, flavourings and processing aids;
- Contaminants in the food chain;
- Additives and products or substances used in animal feed;
- Genetically modified organisms;
- Dietetic products, nutrition and allergies;
- Plant protection products and their residues;
- Plant health.

What is the role of EFSA?

EFSA has been tasked with two missions: independent risk assessment of risks directly or indirectly associated with the food chain and risk communication in all areas of its mandate.

Risk assessment is a specialised field of applied science that involves reviewing scientific data and studies in order to evaluate risks associated with certain hazards. The results of such reviews and evaluations by EFSA's scientific experts are delivered as "opinions" on specific issues. To carry out this work, EFSA draws upon the combined knowledge

of experts from leading scientific institutes and organisations across Europe. These experts apply best-practice risk assessment techniques in fields as diverse as toxicology, veterinary medicine, chemistry, statistics, biology and epidemiology to help protect EU citizens from food-related risks.

Since its creation the Authority has delivered hundreds of scientific opinions and reports on a wide variety of potential food safety issues, covering areas as diverse as allergenic food ingredients, nutrition, health claims, genetically modified organisms (GMOs), animal health issues, contaminants in food and pesticides.

In addition to carrying out scientific risk assessments, EFSA also establishes networks with national bodies to support specific scientific projects in the area of data collection and monitoring. For example, the Task Force on Zoonoses Data Collection, a pan-European network of national representatives and international organisations, plays a key role in the work of EFSA's Zoonoses Data Collection Unit which collects, analyses and reports data on zoonoses, anti-microbial resistance, microbiological contaminants and food-borne outbreaks. The reports of this Unit rely on data provided from national-level authorities and help risk managers across Europe to monitor reduction targets for different diseases. Work of a similar nature is carried out by EFSA's Dietary and Chemical Monitoring Unit which analyses data provided by Member States on food consumption and chemical occurrence in food and feed for exposure assessments at European level.

Under Article 36 of EFSA's Founding Regulation, the Authority is also able to draw on support for data collection (as well as preparatory scientific work or technical assistance) from a list of competent organisations in the Member States that are approved to assist the Authority in its tasks. Where relevant, EFSA will award grants to these organisations through calls for proposals.

Alongside its risk assessment work and data collection, EFSA also engages in risk communications on issues associated with the food chain, another key pillar of its mandate. This type of communication is delivered through different online and offline communications tools including its corporate website, participation in events and conferences, a variety of publications and information materials, press events and information for the media such as press releases and news alerts.

EFSA engages in regular dialogue with its stakeholders and many of EFSA's scientific outputs are subject to public consultation. To facilitate this co-operation, EFSA established a Stakeholder Consultative Platform to ensure that those directly affected by its work are kept informed of new developments and to help co-ordinate input into EFSA's work from interested parties.

In broad terms, EFSA's main objective for communications is to explain the outcomes and the implications of its scientific work from a public health perspective to all stakeholders and the public at large. EFSA seeks to keep all interested parties informed by communicating on risks in an open and transparent way and based on the independent scientific advice of its scientific experts, thereby contributing to building public confidence in the way risk is assessed in the EU. However, the Authority recognises that scientific results cannot always be easily converted into simple guidelines or advice that non-scientists

can easily understand. Bridging the gap between science and the consumer is therefore a key challenge which EFSA addresses by close co-ordination of its communications with national food safety agencies in the Member States. Consumer information needs on food, nutrition and food safety are very diverse in the EU; food safety agencies in the Member States play an important role in ensuring that these needs are met.

To be able to meet these responsibilities, EFSA follows a set of key principles when communicating, details of which are contained within its Communications Strategy 2010-2013. It aims to analyse public perception of food-related risks, explain and contextualise risk, reach out to different audiences and promote consistency and coherence of risk communication across Europe through close co-operation with other risk assessment bodies and risk managers at a Member State and European level (see below section “Understanding European’s perception of food”).

How does EFSA work?

In line with its key values of openness, transparency, excellence, independence and responsiveness, EFSA follows a workflow that runs from the moment the Authority receives a request for scientific advice or initiates its own activity, to the moment it publishes and communicates its scientific findings. This ensures that all requests are treated in a consistent, transparent and objective way and makes EFSA’s internal processes clear for the benefit of EU risk managers, stakeholders and consumers alike.

As the Authority carries out most of its work in response to direct requests from risk managers, EFSA’s Mandates Review Committee screens all requests on a weekly basis, considering the type of scientific output required and allocates the requests to one or more suitable Scientific Panels. The secretariat supporting the respective Panel will examine each request to ensure they are clear, complete and a common understanding is reached with the requestor of what is expected. Where an application is made to EFSA in relation to a regulated product submitted for market authorisation (e.g. a food additive or a GMO), EFSA validates the completeness of the application and may request more scientific information from the applicant.

Once the request has been clarified or the market application validated, the Panel (or Panels) involved in the work establishes a Working Group to carry out the risk assessment and to draft a scientific opinion. The Working Group comprises relevant experts from the Panel and, where appropriate, external experts known to EFSA with specialist experience in a given scientific area. Crucially, in this process the Authority also checks each scientist’s Declaration of Interest to identify potential conflicts of interest, thereby eliminating experts who could possibly compromise the independence and hence the credibility of the subsequent assessment. Before starting an evaluation, the Panel may also decide to meet with other stakeholders to listen to their views and share its planned approach for the risk assessment.

Once the Working Group has completed the draft opinion it is submitted to the Panel. Panels adopt opinions by consensus; however minority opinions may be expressed if individual experts do not agree with the views of their other Panel members which are then recorded in the final opinion. Before final adoption of an opinion by a Panel, EFSA

may also decide to hold an open public consultation in order to gather new data, information or views to support the development of the draft, especially on issues with a high level of stakeholder interest and/or for opinions outlining guidelines for risk assessment in a given field (for instance, environmental risk assessment for GM plants).

All of EFSA's scientific outputs are published on the EFSA website. In addition, EFSA may also choose to accompany this publication with more proactive communications. Communications activities may include media relations, development of special content for the EFSA website or specific EFSA publications or discussion at scientific or stakeholder events. The Communication Directorate co-ordinates its activities with national authorities to help ensure European consumers receive coherent messages on issues that concern them and in a format that they understand. EFSA also co-ordinates its activities with the European Commission to ensure coherence in communications, in particular where risk assessment findings may have implications for risk management and ultimately consumer protection.

Co-operation in Europe and beyond

For the EU's food safety system to work effectively, it is critical that all partners work closely together. EFSA works with partners and stakeholders throughout Europe and beyond. These include institutions with which the Authority has a legal obligation to work with under Community rules and which can request scientific advice from EFSA, i.e. the EC, the EP and competent authorities in the Member States.

Through its Advisory Forum network EFSA works with national food safety authorities responsible for risk assessment. The Advisory Forum connects EFSA with representatives of the national food safety authorities of all 27 EU Member States, Iceland and Norway as well as observers from Switzerland and the EC.

Members of the Advisory Forum work together to address European risk assessment issues common to all parties. They use the Forum to advise EFSA on scientific matters, its work programme and priorities and to address emerging issues early on. 'Focal Points' act as an additional practical interface between EFSA and national food safety authorities in the Member States.

Other networks and specific projects where EFSA plays an important role include the Instrument for Pre- Accession Assistance which supports candidate and potential candidate countries in their preparations for joining the EU (see below), and international co-operation through involvement with bodies such as the Codex Alimentarius Commission (CODEX), the World Organisation for Animal Health (OIE), the Organisation for Economic Co-operation and Development (OECD) and the World Health Organization (WHO).

EFSA also works closely with food safety agencies from other countries around the world. For example, in 2009 EFSA and the Food Safety Commission of Japan signed a Memorandum of Co-operation for the promotion of scientific collaboration on data collection and data sharing. This followed an earlier agreement EFSA made in 2007 with the US Food and Drug Administration on the sharing of confidential scientific information.

Interview - EFSA's Focal Points in Member States: Greece

Dr Eirini Tsigarida, Director of Nutrition Policy and Research at the Hellenic Food Authority, sees the main strength of the Focal Point network as being the facilitation of exchange of information between the Member States themselves and between Member States and EFSA. Through the Focal Point network, quick questions can be sent to the group on a whole range of issues, be it an enquiry about new methodologies for the quantification of trans-fatty acids, requests for data on sterols in food or the sharing of new studies in the field of food safety or nutrition.

The Focal Point network also plays an important role during food safety incidents, allowing the affected Member State to brief the network about the incident and provide background information to help other Member States. The network also offers support to the Member State concerned in addressing the issue. According to Dr. Tsigarida, in the case of Greece, such information is then disseminated on a case-by-case basis to national ministries, research institutes and universities, as well as to consumer organisations and the food industry.

Regarding collaboration with EFSA, Dr. Tsigarida explains that the Greek Focal Point has a dedicated section on its website for the publication of information coming from EFSA; for example on the recent call for scientific data to support the Authority's re-evaluation of aspartame. Such information is summarised in Greek and linked to the EFSA website for further consultation. Interested parties can also directly contact or even visit the Focal Point to obtain more detailed information. Similarly, on a case-by-case basis, EFSA's scientific opinions are summarised in Greek and published on the website of the Focal Point, helping to raise awareness about EFSA's work amongst the Greek scientific community and other interested stakeholders. The Greek Focal Point also hold seminars and workshops to explain to interested parties the work and scientific activities of EFSA and how they can become shortlisted as a competent organisation with EFSA to respond to calls for proposals to assist the Authority in its tasks (under Article 36 of EFSA's Founding Regulation).

The Authority also frequently organises and participates in events on scientific topics within its areas of expertise. For example, in June 2011, EFSA organised a scientific colloquium on emerging risks in plant health to discuss the emergence of pests not previously considered a threat to plant health in the EU. The colloquium was attended by risk assessors, risk managers, scientists and stakeholders from 31 countries, coming from as far away as Georgia, Canada and Japan. Representatives of regional entities like the European and Mediterranean Plant Protection Organisation also attended. Such events enable EFSA to update partners and interested parties on new scientific developments within its remit as well as to gather feedback, information and different points of view on ongoing work such as guidance documents or risk assessments.

EFSA also regularly reaches out to other important stakeholders, including civil society (e.g. consumer groups or non-governmental organisations), market operators (e.g. farmers, food manufacturers, distributors or processors) and science professionals, for example through the Authority's stakeholder consultative platform.

To assist EFSA in its work, the Authority maintains a database of external scientific experts who can provide relevant expertise to its Scientific Committee, Scientific Panels, EFSA networks and respective working groups. Qualified scientists with backgrounds in areas such as food and feed safety, nutrition, toxicology, chemistry, animal health

and welfare, plant protection or plant health are invited to apply. This pooling of scientific excellence across Europe helps EFSA to deliver timely scientific advice of the highest standards to support the policies and decisions of EU risk managers. The database also helps the Authority to respond more effectively and flexibly to a growing workload, particularly in cases where very specialised, unexpected and urgent work may be required.

EFSA programme with pre-accession countries

Within the framework of EU enlargement, EFSA is running a Commission-funded Programme for the Candidate² and the Potential Candidate Countries³. The overall aim of the programme is to promote the understanding of the Authority's work, share expertise and create information exchange mechanisms, and to ensure that the national authorities of the beneficiary countries can participate effectively in the activities of EFSA both prior to accession and following accession to the EU. Through previous programmes EFSA has already supported the building up of risk assessment and risk communications capacity in these countries.

The objectives of the Pre-Accession programmes are to:

- Prepare the competent bodies in beneficiary countries active in the fields relevant to the work of EFSA, the EC and Member States for their future participation in EFSA networks.
- Help create communication and information exchange systems that will enable future participation of the beneficiary countries in EFSA networks.
- Transfer knowledge on methodologies used in the fields within the remit of EFSA, in particular on risk assessment and data collection.
- Support the beneficiary countries in their communication activities linked to risk assessment.

These activities involve, for example, the participation of the Candidate countries in EFSA's networks and technical meetings as observers and in participation in training seminars and study tours to the EU Member States. The Potential Candidate countries also participate in training seminars and study tours to the Member States and in some EFSA technical meetings as observers.

EFSA co-operation with Mediterranean countries under the European Neighbourhood Policy

The European Neighbourhood Policy (ENP)⁴ aims to forge closer ties with countries to the South and East of the EU and in particular with countries from the Mediterranean. Through this policy, the EU seeks to promote greater economic development, stability and better governance in its neighbourhood. EFSA considers this type of international co-operation in food safety to be particularly important as an increasingly globalised

2 - Turkey, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Montenegro.

3 - Albania, Bosnia & Herzegovina, Kosovo (UNSC Resolution 1244), Serbia.

4 - Neighbourhood countries: Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Palestine (Occupied Territory), Syria, Tunisia, Ukraine.

food trade can expose European consumers both to new hazards and also to recurring hazards (for instance preventing the possible re-entry of BSE into the food chain from a country outside the EU).

EFSA has already arranged various seminars for the ENP countries on food safety in conjunction with the EC. The first of these seminars, held in 2009, focused on general issues of food safety and the role of the EFSA. The following seminars in 2010 covered the handling of food emergencies and crises in the food chain. The seminars gave EFSA and the Commission the possibility to build ties with national food safety authorities in the ENP countries; they, in turn, received insights into the EU approach to handling a food safety crisis and into the functioning of the EU's RASFF.

In June 2007, EFSA hosted a dedicated conference with CIHEAM entitled: "*Identity, Quality and Safety of Mediterranean Food Products*". The conference had two objectives: to present the numerous issues relating to the regional identity and safety of Mediterranean agricultural and agrifood products and to discuss policies and technical measures that may be promoted in response to the different challenges encountered in the field of Mediterranean food.

More recently in September 2011 a joint workshop, organised by the European Commission Directorate-General Health and Consumers (DG SANCO), the European External Action Service (EEAS) and EFSA, was held in Brussels with representatives from Southern Mediterranean countries⁵. They discussed animal health and welfare issues and regional policies to support trade in products of animal origin. The objectives of the workshop were to take stock of ongoing and planned activities in animal disease management that are aimed at expanding trade in products of animal origin in the Southern Mediterranean region. The workshop provided an opportunity to strengthen collaboration between the different veterinary services and expert organisations in the region and to identify shared priorities to guide future programming under the EU Neighbourhood Policy. It was attended by approximately 25 representatives from the competent veterinary authorities in the 10 Mediterranean Neighbourhood countries.

EFSA's work in the field of nutrition

Overview

The EU strategy on nutrition

The European Commission has established a Community Strategy in the field of nutrition to address problems associated with excess weight and obesity. By 2015 the World Health Organisation (WHO) predicts that more than 700 million people worldwide will be obese or overweight⁶. Already today, 20% of children and adolescents in Europe fall into that category. Even in Greece – the heartland of the Mediterranean Diet with its traditional emphasis on healthy eating – the latest WHO statistics indicate that 26-30% of adults are obese. Chronic lifestyle and diet-related diseases are a significant cause of mortality and morbidity across Europe and there is a clear need for co-ordinated,

5 - http://ec.europa.eu/enlargement/taix/dyn/taix-events/library/detail_en.jsp?EventID=45933

6 - <http://www.euro.who.int/en/what-we-do/health-topics/disease-prevention/nutrition/facts-and-figures>

effective and science-based nutrition policies. Governments of the Member States and the EC are introducing strategies to address this important public health issue, which continues to take up a growing proportion of spending on public health. The focus is on actions that can be taken at local, regional, national and European levels to reduce the risks associated with poor nutrition and limited physical exercise. Unless action is taken, in the long term these risks are expected to increase the incidence of chronic diseases in the EU and to reduce the quality of life of many citizens.

EU action⁷ in this area can complement work undertaken at national, regional or EU level. For instance, it could relate to the functioning of the internal market (e.g. labelling requirements, authorisation of health claims or food control procedures) or be part of more specific frameworks such as the Common Agricultural Policy or EU initiatives in the field of educational, regional or media policy. EU interventions follow a multi-sector approach and involve stakeholders, in particular the food industry. Moreover, given the growing number of policies and initiatives aimed at improving diet and physical activity, the Commission has a central role to play in the monitoring and assessment of ongoing work. The work done by EFSA in the field of nutrition provides policy-makers with science-based advice to help inform their decisions and policies in this field.

The actions undertaken by stakeholders in this field should follow three principles. Firstly, individuals are ultimately responsible for their lifestyle. Secondly, consumers can make rational decisions only if they are well informed. Finally, an effective response requires the integration of all relevant policy areas, from food to sport, education and transport (horizontal approach); and the integration of different levels of action (vertical approach).

The work of EFSA in the field of nutrition

EFSA's overall task in the field of nutrition is to provide Europe's public policy-makers with scientific opinions and advice which can serve as a basis to inform their nutrition policies. EFSA has two units that deal directly with the field of nutrition – the Nutrition Unit, which supports the Scientific Panel on Dietetic Products, Nutrition and Allergies (NDA), and the Dietary and Chemical Monitoring (DCM) Unit. The NDA Panel provides scientific advice on which policy-makers at EU and national level can base regulatory decisions, develop nutritional policies, set diet-related public health targets and develop educational health programmes on healthy diets. The DCM Unit collects, collates and analyses data on food consumption and chemical occurrence in food and feed.

The NDA Panel deals with issues such as the assessment of the scientific substantiation of health claims, the setting of dietary reference values, the provision of guidance on how to establish food-based dietary guidelines or the setting of tolerable upper intake levels for vitamins and minerals. For example, the Panel assesses whether claims on possible health benefits of foods are substantiated by scientific evidence. This evaluation then serves as a basis for risk managers to decide on the authorisation of claims in the EU (See p. 387).

The NDA Panel also provides the most up-to-date and comprehensive scientific advice on nutrient intake and supports the EC and the Member States in establishing nutritional policies, setting diet-related public health targets and developing consumer information and educational programmes on healthy diets.

7 - http://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf

The work of the DCM Unit supports the risk assessment activities of the NDA Panel but also of the Authority's other Scientific Panels and its Scientific Committee. As well as underpinning the development of EFSA's scientific advice on dietary exposure to food hazards, the Unit collects data on food consumption. For instance, EFSA maintains a Comprehensive European Food Consumption Database, which contains data for a number of EU countries. The Unit supports EFSA in its efforts to harmonise the methods used by Member States to collect food consumption data. The Authority's long-term objective is to collect detailed and harmonised food consumption data that are representative of individuals of all ages across the EU.

Dietary habits in Europe: Collecting data related to food consumption

In co-operation with Member States, EFSA facilitates access to and analysis of harmonised data (e.g. data that are comparable across Member States) on food consumption, thereby supporting risk managers in making informed decisions to protect and promote consumer health; for example, in assessing how dietary intakes of salt compare with targets set for healthy diets.

EFSA's work to date

Combining information on the occurrence of food contaminants with food consumption data enables risk assessors to gauge consumer exposure to certain hazards. Such assessments also allow scientists to make recommendations for the prevention, reduction and monitoring of these hazards in the food chain. For example, EFSA monitors acrylamide levels in food and carries out related exposure assessments. Acrylamide is a carcinogenic and genotoxic chemical compound that typically forms in starchy food products subjected to high-temperature processing.

Harmonised EU-wide data collection facilitates the sharing of information across countries and can highlight differences in food consumption between Member States, thus providing policy-makers with important information. One example of such differences was revealed in the opinions on marine biotoxins that the Authority prepared to help protect high consumers of shellfish. EFSA's work showed that consumers in Belgium, rather than those in the Mediterranean countries, eat the largest portions (over 100g) of shellfish.

The food consumption data collected by the Authority enables EFSA to estimate consumers' exposure to food hazards – a fundamental part of the Authority's risk assessment work. EFSA's first milestone in this field was the publication, in 2008, of its Concise European Food Consumption Database. This database compiled information on food consumption by adults in Europe that was elaborated at country level according to broader food categories (e.g. milk and dairy-based products) and sub-categories (e.g. cheese). This database was the precursor of the Comprehensive European Food Consumption Database.

In contrast to the concise database, the Comprehensive European Food Consumption Database provides information to support further refinement of exposure estimates: dietary surveys and consumption data are divided by country, consumer age group, food

type and frequency of consumption. In addition, the data are reported in grams per day, as well as in grams per day per kg of body weight. This depth of information plays a key role in the evaluation of possible food-related risks and consumers' exposure to food-borne hazards. In particular, summary statistics from the database enable quick screening for chronic and acute exposure to substances that may be found in the food chain.

EFSA has already put the comprehensive database to good use: in April 2011, data from Member States on the occurrence of acrylamide in food was combined with individual dietary information from the database to establish exposure to acrylamide through food. Acrylamide is a chemical compound that typically forms in starchy food products during certain types of cooking at high-temperatures, such as frying, baking and roasting; it is known to be both carcinogenic and genotoxic (i.e. it can cause damage to the genetic material of cells).

What's on the menu in Europe (EU Menu)

National dietary surveys are conducted in many European countries and their results are used in EFSA's Comprehensive European Food Consumption Database, but because of differences in how the information is collected it is currently not possible to carry out EU-wide analyses or comparisons on food consumption across Member States. Therefore, following a proposal endorsed by its Advisory Forum, EFSA is coordinating the design and implementation of the first pan-European food consumption survey. Named "What's on the menu in Europe?" this project, carried out in close co-operation with Member States, aims to harmonise data collection on food consumption across Europe.

The objective of "EU Menu" is to provide standardised information on what people eat across Europe. It will allow more efficient and accurate exposure assessment and support risk managers in their decision-making. EU Menu will also assist policy-makers in assessing the nutritional status of population groups, setting targets regarding healthy diets and monitoring progress. Thus, EU Menu will contribute to safer food and healthier diets for European citizens. Pilot projects have been launched in several countries, including Greece and Portugal, to test the proposed guidelines for carrying out the surveys.

Advice on nutrition-related issues

The European Union has rules governing the labelling of foodstuffs aimed at giving European consumers comprehensive information about the composition of the food they eat. Labelling helps consumers to make informed choices when buying their food. In addition, EFSA's advice on dietary reference values underpins nutritional policies, the setting of diet-related public health targets and the development of consumer information and educational programmes on healthy diets.

Dietary reference values and dietary guidelines

Healthy diets are those providing adequate amounts of energy and a balanced supply of nutrients. Dietary Reference Values (DRVs) indicate the amounts of individual nutrients that people need for good health and well-being, depending on their age and gender. DRVs represent a complete set of nutrient recommendations and reference values that can be used as a basis for food labelling and for establishing food-based

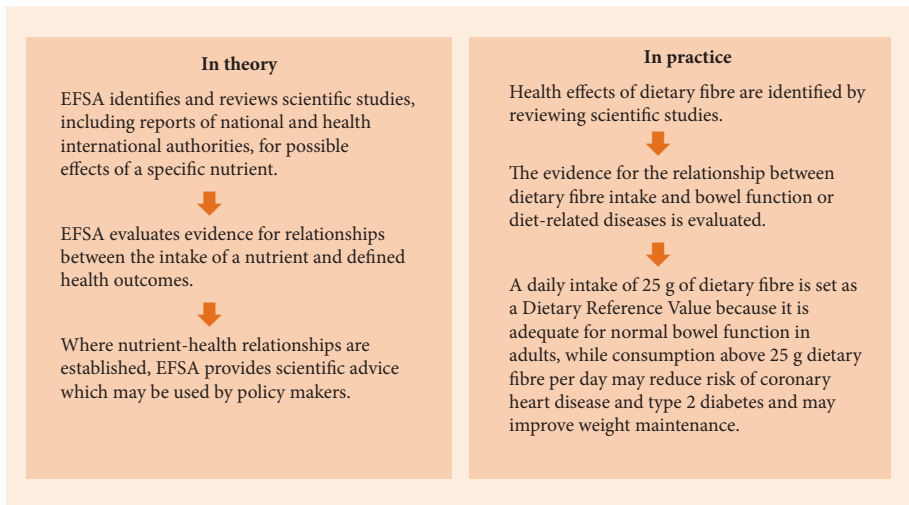
dietary guidelines. Food-based dietary guidelines translate nutritional recommendations into simple messages about food and diet that can help consumers decide what to eat and how to make healthy dietary choices.

Following a request from the EC, the NDA Panel has to date laid down general principles for DRVs as well as DRVs for carbohydrates, dietary fibre, fats and water and has published a draft opinion on DRVs for protein for public consultation:

- A reference intake for total carbohydrates ranging from 45 to 60 percent of the total energy intake for both adults and children was established.
- A daily intake of 25 grams of dietary fibre was considered adequate for normal bowel function in adults.
- A reference intake range for fats of 20 to 35 percent of total energy intake was established.
- For water (from all sources) a daily intake of 2.0 litres was considered adequate for women and 2.5 litres for men.

The Authority is also in the process of setting DRVs for dietary energy (calories), and vitamins and minerals.

Figure 1 - How EFSA sets Dietary Reference Values



Providing advice for setting nutrient profiles

To carry nutrition and health claims in the EU, a food product should comply with certain nutritional characteristics, or “nutrient profiles”. The use of nutrient profiles aims to avoid a situation whereby nutrition or health claims could mask the overall nutritional value of a food product and potentially mislead consumers in making healthy food choices in the context of a balanced diet. EFSA was asked by the EC to give advice on the setting of such nutrient profiles taking into account: dietary recommendations

and public health implications; the role and importance of foods in the diet; and the variability of dietary habits and traditions across Europe while also allowing for product innovation by food manufacturers.

The nutrient profile of the overall (habitual) diet is an important determinant of health and the nutrient profile of a ‘balanced’ diet is defined by science-based recommendations for intakes of energy and nutrients. As diets are composed of multiple foods, overall dietary balance can be achieved by combining foods with different nutrient profiles; it is not necessary for each individual food to meet the nutrient profile of a ‘balanced’ diet. Individual foods can influence the nutrient profile of a consumer’s diet, depending on the nutrient profile of the particular food and the level of intake. Thus, when classifying food products as eligible to bear claims, the potential of the food to adversely affect the overall dietary balance is the main scientific consideration. This consideration relates in particular to nutrients for which there is evidence of a dietary imbalance in EU populations that might influence the development of overweight and obesity or diet-related diseases such as cardiovascular disease or other disorders. They include nutrients that might be consumed in excess of dietary recommendations as well as those for which intake might be inadequate.

Ensuring that claims made on food are scientifically substantiated

A nutrition claim states or suggests that a food has beneficial nutritional properties, such as “low fat”, “no added sugar” or “high in fibre”. A health claim is any statement on food products or in the advertising of food products suggesting that health benefits can result from consuming a given food, for instance that it can help to maintain blood cholesterol levels or enhance learning abilities. In order to regulate the use of these claims for foods, EU decision-makers adopted harmonised EU-wide rules which ensure that any claim made on a food label or in advertising in the EU is clear and substantiated by scientific evidence. To protect consumers, the Regulation on nutrition and health claims prohibits any information which is false, ambiguous or misleading and stipulates that all health claims have to be authorised prior to their use after a scientific assessment of the highest possible standards carried out by EFSA.

The EU regulation distinguishes the following health claims:

- “function” claims which refer to the role of a nutrient or a substance in (i) growth, development and body functions, (ii) psychological and behavioural functions, (iii) slimming and weight control, satiety or reduction of available energy from the diet;
- claims related to a disease risk reduction;
- claims related to child development or health.

While EFSA’s role in the authorisation process is to assess the scientific basis of health claims, it is the responsibility of the EC and Member States to decide on the final authorisation of these claims taking into account also other legitimate factors relevant to the matter under consideration.

In its scientific assessment EFSA considers:

- whether the specific substance for which the claim is intended is identified unambiguously;
- whether the claimed effect is a beneficial physiological effect;
- and whether the claim is substantiated by generally accepted scientific evidence.

The Authority is in constant dialogue with stakeholders to explain how it carries out its work and has prepared a number of guidance documents to assist applicants in preparing their applications.

By the end of 2011, EFSA had assessed around 3,000 health claims which had been submitted to the Authority for scientific evaluation. The vast majority were assessed under Article 13 of the Regulation relating to 'general function' claims with the remaining applications, submitted under Article 14, on disease risk reduction and child development. EFSA determined whether these claims were supported by sound scientific evidence, thereby assisting the EC and Member States in the establishment of a list of claims authorised for food in the EU. This work will enable European consumers to make informed choices about their diet.

The outcomes of evaluations were favourable when there was sufficient evidence to support the claims.

Favourable claims included those claims related to:

- specific dietary fibres and blood glucose control, blood cholesterol, or weight management;
- live yoghurt cultures and lactose digestion;
- antioxidant effects of polyphenols in olive oil;
- walnuts and improved function of blood vessels;
- meal replacement and weight control;
- fatty acids and function of the heart;
- the role of a range of sugar replacers (such as xylitol and sorbitol) in maintaining tooth mineralisation or lowering the increase of blood glucose levels after meals;
- carbohydrate-electrolyte drinks/creatine and sports performance;
- water-soluble tomato concentrate and blood flow;
- vitamins and minerals.

Unfavourable opinions were expressed in cases where the information provided did not allow a relationship between the food and the claimed effect to be established. Reasons included:

- lack of human studies with reliable measures of the claimed health benefit (such studies are central to the establishment of a cause and effect relationship between the food or substance concerned and the beneficial health effect claimed);

- lack of information to identify the substance on which the claim is based (for example, claims on “probiotics” rather than a specific bacterial strain, or on “dietary fibre” without specifying the particular fibre);
- lack of evidence that the claimed effect is indeed beneficial to the maintenance or improvement of the functions of the body (for example, food with “antioxidant properties” and claims on renal “water elimination”);
- lack of precision regarding the health claim being made (for example, claims referring to terms such as “energy” and “vitality”, or claims on “women’s health” or “mental energy”);
- claims referring to food categories which were considered to be too broad to be linked to the specific effects claimed (such as “fruits and vegetables” and “dairy products”);
- claims on overall diets for which no information was provided on the amounts required to achieve the desired effect, appropriate characterisation of the food items or food groups in the diet and no reference to the macronutrient composition (including dietary fibre) of the diet was provided.

EFSA observed that the main reasons for claims to be rejected were because the claimed effect(s) could not be scientifically substantiated as being beneficial to human health or that the respective foods or food constituents were not sufficiently characterised to be clearly identifiable.

Examples of such unfavourable decisions can be seen in EFSA’s scientific opinions on health claims related to “fruits and vegetables” or to the “Mediterranean Diet”. In the case of the health claim submitted for fruits and vegetables, it was unclear what type of fruits or vegetables were required to obtain the claimed effects and in what quantities they needed to be consumed. Moreover, it was considered that the significant differences in the nutrient composition and energy density of different fruits and vegetables precluded accepting a health claim covering “fruits” or “vegetables” indiscriminately. Neither was the beneficial character of fruit and vegetable consumption clear from the submitted studies, i.e. no cause and effect relationship could be clearly established.

Similarly, a health claim relating to a beneficial effect of the “Mediterranean Diet” on cardiac function was rejected because a cause and effect relationship could not be established between the consumption of a “Mediterranean Diet” and the claimed effect on the basis of the data presented to EFSA. Scientific substantiation could not be established because the “Mediterranean Diet” was not adequately defined. Indeed Member States submitting the claim characterised this type of diet as being “based on high consumption of fruits, vegetables, cereals, pulses, nuts and seeds; moderate consumption of dairy products, fish, poultry and eggs and little use of red meat; low to moderate amount of wine; olive oil is the main cooking and dressing oil”. However, quantitative amounts and appropriate characterisation of the food items or food groups in the diet had not been provided, and no reference to the macronutrient composition (including dietary fibre) of the diet had been made. Moreover, reference to wine as one of the components of the “Mediterranean Diet” was contrary to the provisions of the EU regulation which specifies that no food products containing more than 1.2 percent alcohol by volume should be allowed to bear health claims.

On the other hand, the specific claim that polyphenols in olive oil and other olive products protect low density lipoprotein (LDL) particles from oxidative damage was accepted as scientifically substantiated. Polyphenols in olive were sufficiently characterised; protection of LDL particles from oxidative damage was considered to represent a possible beneficial physiological effect; and the data presented in support of the health claim clearly established a cause and effect relationship.

Today, under the regulation on nutrition and health claims in the EU, any claim relating to a food item, food constituent or diet needs to be submitted to EFSA for a formal assessment and be scientifically substantiated before being possibly endorsed and authorised.

Understanding European's perception of food

Alongside the work it carries out in scientific risk assessment, EFSA also has a mandate to communicate on risks associated with the food chain. This is a challenging task given the diversity of EFSA's target audiences, which range from the individual European consumer through to consumer organisations, food producers and retailers, scientists, politicians and policy makers at the Member State and European level.

Science does not stand still and our scientists continue to extend the boundaries of our knowledge in all fields of endeavour. Scientific and technological innovation that can have an impact on food, such as nanoscience or cloning, can also bring communication challenges. Communicating more effectively the risks and benefits of new technologies is always challenging as there will be gaps in information and areas of scientific uncertainty that need to be addressed.

Moreover, attitudes to food do not just revolve around food safety. Factors such as taste and consumer preferences, food consumption patterns, food quality, food supply, animal welfare concerns, etc., all of which differ slightly from Member State to Member State depending on the individual, social, economic and cultural context, must be taken into consideration when choosing how to communicate about food and possible food-related risks.

The information revolution has helped to make consumers more knowledgeable on food and nutrition issues and our citizens are increasingly empowered in relation to their health. They take values such as organic, free-range, animal welfare, ethics, environmental impact and fair trade into account in their food choices. Consumer acceptability of products from cloned animals illustrates this. The Flash Eurobarometer on cloning of animals published in October 2008 showed that more than 60% of respondents had moral objections to the technology and a similar proportion indicated that they would be unwilling to buy meat or milk from cloned animals. Experience gained from the animal cloning debate shows that, as well as safety issues, ethical considerations must also be taken into consideration and that public consultation and stakeholder engagement are critical for informed discussion on sensitive technologies.

In order to be able to provide clear and effective communications on all of these issues, it is critical for EFSA to understand consumers' perception of food-related risks. To this

end, the Authority commissioned a specific Eurobarometer survey on consumers' perceptions of food-related risks in 2006 and 2010 to assess and monitor consumer attitudes and concerns over time.

Eurobarometer surveys are regularly conducted on behalf of the European Commission and other EU institutions to monitor public opinion in Member States. The surveys address major topics concerning European citizenship such as enlargement, health, culture, information technology, environment, the Euro currency and defence. The results of the two Eurobarometer surveys commissioned by EFSA in 2006 and 2010⁸ have helped to inform EFSA's approach to communications with its key partners and stakeholders as well as the public at large.

Eurobarometer survey on food-related and nutritional risks

Public perception of food risks is a relatively recent area of research, an area in need of more systematic data collection across the EU Member States. The first Eurobarometer on "Risk Issues" commissioned in 2006 by EFSA and DG SANCO, the European Commission's Directorate General for Health & Consumers (formerly known as Health & Consumer Protection), attempted to fill the gap and provided baseline data which have been utilised as a reference point for future research.

In 2010, EFSA commissioned its second Eurobarometer survey to assess how consumer views on food-related risks have evolved over the past 5 years.

The aim of the 2010 survey was to gain insights into consumer concerns about food and risks associated with the food chain, and the level of consumer confidence in public authorities on food related issues. The survey was carried out in all 27 Member States among a representative sample of 26,691 individuals aged 15 or older. Their responses represent the views of more than 500 million European consumers.

General findings: perceptions, concerns, sources of information, effectiveness of public authorities

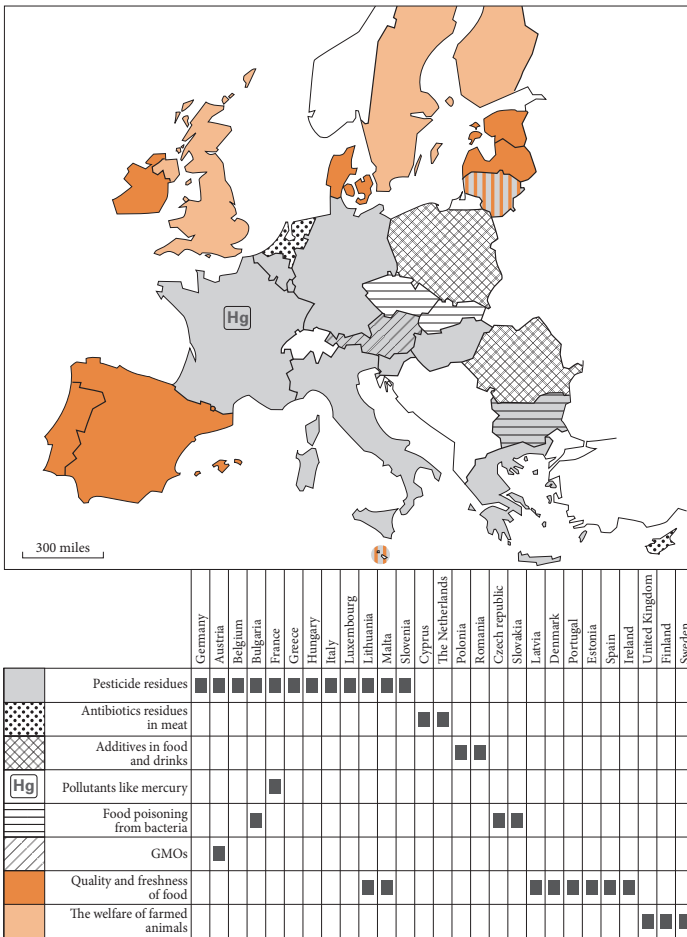
The main result of the 2010 Eurobarometer survey was a positive and important one, namely that the majority of Europeans associate food and eating with enjoyment, citing experiences such as selecting fresh and tasty food or the pleasure of having meals with family and friends. About a third of respondents were concerned about the safety of food, particularly chemical or bacterial contamination, and about a quarter related food with health issues such as calories and nutrients. In terms of public confidence in information sources on food-related risks, the survey found that EU citizens expressed the highest level of confidence in information obtained from doctors and other health professionals (84%). National and European food safety agencies (EFSA) and EU institutions drew a relatively high level of confidence at 64% and 57% respectively, with national governments at 47%. EU citizens ranked the economic crisis and environmental pollution above health risks from food as issues that are likely to affect their lives.

In terms of public concerns about food-related risks, no single widespread concern about food-related risks was mentioned spontaneously by a majority of respondents – 19%

8 - EFSA : <http://www.efsa.europa.eu/en/riskcommunication/riskperception.htm>

cited chemicals, pesticides and other substances as the major concerns, while one in ten answered that there was no problem at all with food. When prompted about possible food-related issues, three in ten respondents said that they were “very worried” about chemical residues from pesticides in produce and cereals, antibiotics or hormones in meat, the cloning of animals for food products, and pollutants such as mercury in fish and dioxins in pork. Some respondents also mentioned bacterial contamination, and nutritional risks such as weight gain and lack of a healthy diet as very worrying issues. It is interesting to note (see Chart 1) that concerns about food quality are raised by consumers in both the North and South of Europe. With Denmark being the only exception, respondents who expressed the highest levels of worry about “quality and freshness of food” fall into two clear categories: i) from Member States that have joined the EU since 2004 and ii) from Mediterranean countries (Portugal, Greece, Italy and Spain).

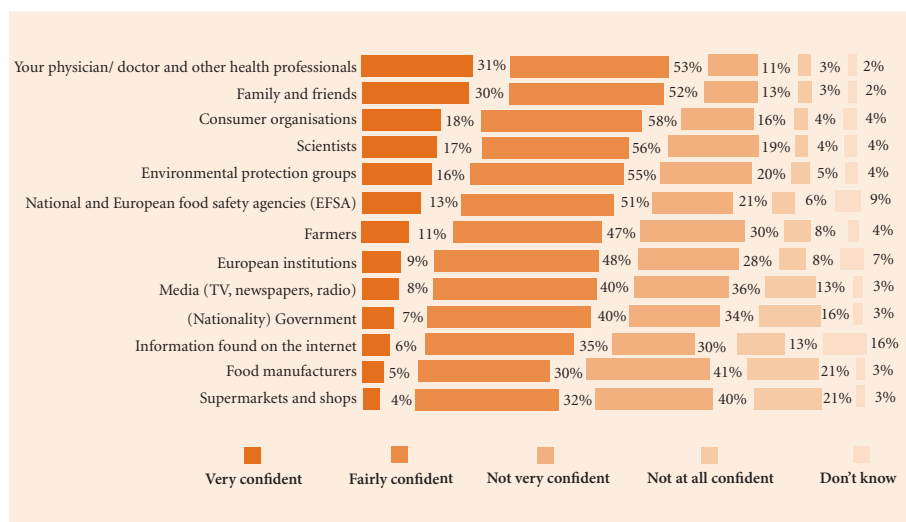
Map 1 - Main concerns about food-related risks in the EU by Member State



Note: Responses given to the prompted question: “Please tell me to what extent you are worried or not about the following issues.”
 Answers: Very worried; Fairly worried; Not very worried; Not at all worried; Do not know.

More than eight in ten Europeans trust doctors and health professionals to give them reliable information about food-related risks; a similar number trust their family and friends. More than seven in ten said that they had confidence in consumer organisations, scientists and environmental protection groups, and about two thirds trust national and European food safety agencies as sources of information on food and related risks (see Chart 1). Almost half of European citizens trust information from their national government on food safety.

Chart 1 - How much confidence do EU consumers have in sources of information about food risks?



Compared with the previous such survey commissioned in 2006, more respondents agreed that public authorities do a lot to ensure food safety in Europe, are quick to act, base their decisions on scientific evidence and do a good job in informing people about food-related risks. Most Europeans would like to see public authorities play a bigger role in ensuring that food is healthy and in informing people about healthy diets and lifestyles.

Risk communications

Through its risk communications activities, EFSA seeks to raise awareness of its role in the European food safety system and to further explain the implications of its scientific work. EFSA aims to provide communications on food safety issues that are:

- appropriate – based on a thorough understanding of the target audience;
- consistent – requiring EFSA to work with other communicators in the EC and Member States to ensure knowledge is shared and key messages are aligned;
- accurate – evidence based and true to the science;
- timely – to provide risk managers and all interested parties with advice as soon as it becomes available to inform their decision making processes.

To ensure public confidence in food safety, EFSA communicates on risks in an open and transparent way. This approach serves to strengthen the perception of EFSA as an authoritative and trusted autonomous voice.

To make sure that its messages are conveyed consistently and to address key public concerns, EFSA seeks to involve risk managers, stakeholders and other risk assessors in the Member States in the risk communications process. Co-ordination of communications is critical; to be effective, risk communications must explain and contextualise risk appropriately and make it as relevant to the target audience as possible. In defining its communications approaches, EFSA takes into consideration:

- the scientific significance of the risk assessment results;
- the nature of the risk (e.g. emerging, possible, identified and confirmed);
- the potential public health impact;
- public perception and anticipated reactions;
- the legislative and market contexts, as appropriate.

To further increase the coherence of risk communications across the EU and beyond, EFSA is supported by a Working Group on Communications, which was established in 2003 by the Authority's Advisory Forum to consider communication – and in particular risk communication – on matters within the remit of EFSA. The Advisory Forum Working Group on Communications (AFWGC) works with the communications departments of the national food safety agencies to build a more collaborative and informed approach to communicating risks in the food chain and to promote coherence of food safety messages across the EU. This effort also includes the development of Risk Communications Guidelines that can be used by the competent authorities in Member States to address communications challenges. Drawing on concrete case studies, the guidelines can help Member States to benefit from the lessons learned by each other, and also provide hands-on advice on the appropriate use of certain communication tools, e.g. social media.

EFSA's Working Group on Communications: Portugal

Dr Maria João Seabra, Head of Communication Support and Assessment at the Portuguese Food Safety Authority (ASAE), believes that collaboration with EFSA is vital for the communications activities of ASAE. ASAE draws on the information and communications it receives from EFSA, which are translated and published on the ASAE website, and relies heavily on the Advisory Forum Communications Working Group (AFCWG). If colleagues from EFSA or other countries are seeking an update on a particular situation in Portugal such as *E.coli*, or want details about local diets or to exchange experiences of inspecting restaurants and ways of publishing the results, the AFCWG offers an easy way of contacting the right person, Ms Seabra says.

Conclusion

The series of food crises in the late 1990s, described in the opening section of this article, led to a recognition amongst European public authorities and policy makers that the EU food safety system in place at the time needed to be recast. The introduction of the General Food Law in 2002, which laid down a “farm to fork” approach to managing risks in the food chain, separated the functions of risk assessment and risk management, leading to the creation of EFSA. This new approach for dealing with food safety in the EU sought to ensure the highest levels of consumer protection and restore confidence of consumers and trading partners. Today, almost 10 years after EFSA published its first scientific opinion, this approach is well established with the advice that the Authority provides to risk managers underpinning the laws and regulations in place to protect European consumers from food-related risks.

As this article has demonstrated, EFSA does not arrive at its scientific advice in isolation. Indeed, the structure of the Authority and the way it organises its work ensures that all relevant scientific expertise and the latest scientific information is taken into account before its Panels reach their conclusions. Importantly, this extends to the relationships EFSA fosters with experts and scientific organisations in EU Member States and beyond. The series of seminars on issues such as food crises or animal health and welfare, held in conjunction with Mediterranean countries in the context of the European Neighbourhood Policy, provides a good example of this type of collaborative work. The views and opinions of other stakeholders, such as consumer and environmental non-governmental organisations, academia and industry, are also considered by EFSA through frequent public consultations and stakeholder workshops.

No single area of EFSA’s work highlights more clearly the need for co-operation than that of data collection. With the establishment of the European Food Consumption Database, the data provided by Member States on food consumption and occurrence of contaminants in food allows the Authority to give advice on the risks associated with exposure to certain food hazards as well as analyse nutritional trends in Europe. In the future, with the completion of the ‘EU Menu’ project, the Authority will be able to provide standardised information on food consumption across Europe, a vital resource for risk managers as they monitor and promote public health.

The recent *E.coli* outbreak in Europe underscored the importance of providing clear, consistent and timely communications about the work EFSA carries out. Central to its role as a risk communicator is a strong understanding of how food and risks associated with food are perceived by its many target audiences. The results of EFSA’s Eurobarometer survey on consumers’ perception of food-related risks highlight some of the challenges EFSA faces in terms of tailoring communications to meet the needs of audiences at both a national and European level. This challenge is made easier through the Authority’s Advisory Forum Communications Working Group, a network of risk communicators at Member State-level, which continues to provide valuable insights and support in this area.

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8 PART EIGHT

PUBLIC
policies and
measures



REDESIGNING DIETARY EDUCATION

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The mention of health and nutrition in the Mediterranean region evokes the biodiversity of its genetic resources and a sustainable, healthy and balanced food system, the basic elements of which are shared by the countries of the Mediterranean Basin. The region has produced a dietary model that is renowned for enhancing health and prolonging life. It may be opportune, at this point, also to mention the tradition of dietary advice that has been practised in the region since ancient times. Following the ancient herbalists' recognition of the value of natural sources for building good health, it was Avicenna (Ibn Sina), the Persian-born philosopher and scientist (980-1037), who devoted sections of his 'Canon of Medicine' not only to dietary advice in health and disease, but also to the importance of physical exercise for health and well-being. His recommendations for managing the lifestyle of elderly people included advice on food intake and on the need for regular light forms of physical activity. The 'Canon' was translated and used as a standard medical text in Western Europe for several centuries and is reported to have been still in use in Montpellier, France in 1650. During the same period, the use of "Diet" in the management of health disorders was mentioned in the Salernitan Guide to Health (*Regimen Sanitatis Salernitanum*) which was taught in the Salerno Medical school.

The Giessen Declaration¹ (2005) is a significant landmark in the evolution of the science of nutrition, which directly influences the practice of dietary education (DE); it defines nutrition as "the study of food systems, foods and drinks, and their nutrients and other constituents and of their interactions within and between all relevant biological, social and environmental systems". While contemplating the importance of the Mediterranean Diet in the evolution of DE, one finds it difficult to pin down its actual role and place. It varies between being the source of the principles that provide direction and guidance for the changes that are taking place and being itself the subject of those changes. The examples of DE programmes that successfully exploited Mediterranean-style dietary systems and practices can be credited to the resilience of a dynamic Mediterranean food system in all Mediterranean countries. The system has proved to be versatile enough to embrace the different contexts, conditions, imperatives and demands of modernity without losing the essence of its basic features and hence to guarantee the ability to maintain its continuity

1 - The Giessen Declaration was announced at the 18th International Congress of Nutrition, held in Durban (2005).

in a changing world. The challenge is therefore to be able to promote a sustainable Mediterranean-type pattern for food consumption as the model for the heralded “new food culture” (Reich and Gwozdz, 2011), the aim being for the healthy Mediterranean-style dietary systems to become a shared goal (Lacirignola and Capone, 2010) that is accessible to all, rather than the exception destined for the privileged. This would give Mediterranean countries a comparative advantage in the fight against the progressive global spread of non-communicable diseases (NCDs) and obesity, which has not spared the Mediterranean region and is a cause for grave concern (OECD, 2010).

The increasing burden of non-communicable diseases (NCDs)

- Two out of three deaths each year are attributable to NCDs. Four-fifths of these deaths are in low and middle-income countries, and one-third are in people under 60 years of age.
- Taken as a whole, age-specific NCD death rates are nearly twice as high in low and middle-income countries than in high-income countries.
- NCDs often cause slow and painful deaths after prolonged periods of disability.
- In all regions of the world, the total number of NCD deaths is rising because of population ageing and the globalisation of risks, particularly tobacco use.
- In addition to the long-standing challenges of curtailing infectious disease, this double burden of disease places enormous strains on resource-deficient health systems.

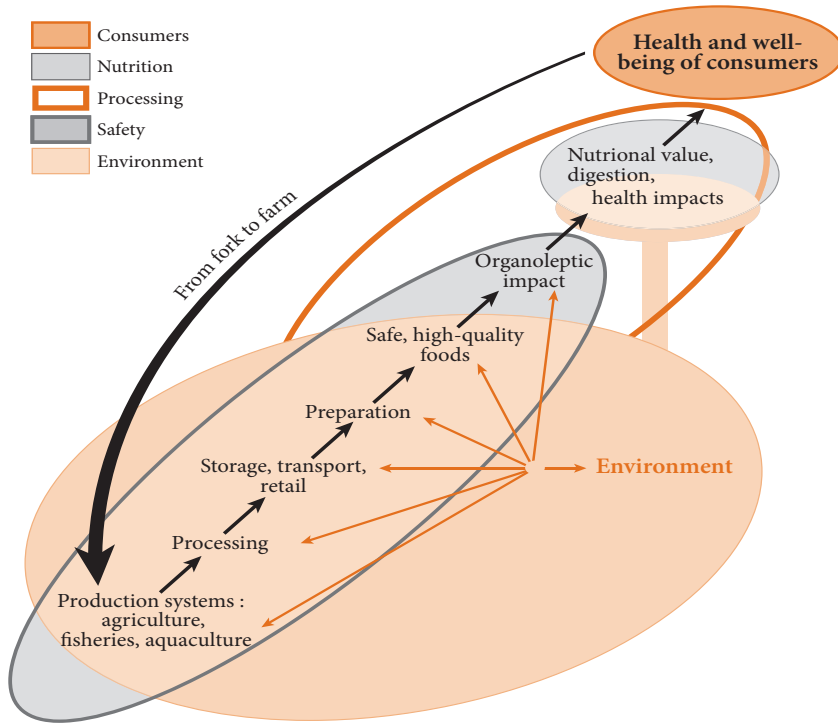
Source: Beaglehole (2011).

Dietary education in a changing world

The purpose of dietary education is to help populations make the right food choices so as to consume a diet that enables them to lead a healthy, productive and socially active life. The changes that have taken place in the practice of DE are reviewed below against the factors that have influenced this evolution. As dietary education has evolved, implementation modalities have changed and innovative initiatives have been introduced adopting creative approaches to the formulation and communication of educational messages. The latter, in turn, build on the newly discovered relations and processes that are based on the outcome of the current understanding of biological knowledge systems (Brunori *et al.*, 2008). The evolution in food production systems, scientific discoveries, changes in life-supporting ecosystems, and the introduction of novel food-processing techniques are some of the factors that influence the food production and consumption continuum, from the producer to the consumer (Figure 1). In facing the challenges of the multi-layered, complex causal web of interdependent factors for diet-related disorders, dietary education programmes necessarily had to integrate approaches involving a wide developmental base that brought in other partners and stakeholders from the various sectors concerned.

The New Nutrition project introduced in the Declaration recognises the complexity of the discipline of nutrition and provides the elements that open up new domains and types of action for nutrition (or dietary) education (Cannon and Leitzmann, 2005).

Figure 1 - Food chain continuum: fork to farm



Source: Christian Patermann, “The 7th Research Framework Programme in the area ‘Food, Agriculture, Fisheries and Biotechnology’”, European Commission, Directorate Biotechnologies, Agriculture and Food, DG Research, 2007.

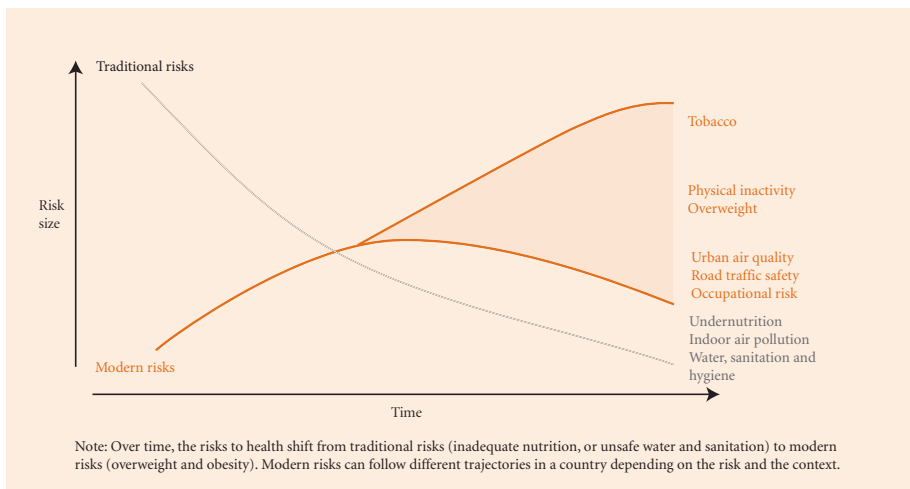
Practice has shown that limiting dietary education to communicating information on what makes up a balanced nutritious diet is not necessarily conducive to an improved state of health and nutrition, since the targeted groups may not be able to put the acquired knowledge into practice for reasons that are often outside their control (Yach, 2011). Thus, concomitant measures to promote healthy lifestyles (WHO, 2009a) and the creation of supportive enabling environments through statutory, regulatory, normative, fiscal or other types of action in the public domain which operate throughout the food production and consumption continuum (Figure 1) have become a necessary adjunct to DE (Padilla, 2010a).

Strategies that are designed to overcome the challenges facing the realisation of the expected impact of food and nutrition information and education programmes continue to evolve and lend form and substance to what can become the “new” approaches to the food and nutrition education programmes of the 21st century. The challenges that represent a real threat to DE programmes in the 21st century include the danger of the irrevocable disruption of the food system and of local biodiversity, the rapid rhythm of modern life that is undermining family cohesion, and the gradual loss of esteem for and disappearance of traditional customs and practices, all of which interrupt the continuity in the “memory” of our Mediterranean food heritage (Padilla, 2010b). A number of

innovative approaches, new actors and new domains for intervention are emerging in current DE programmes. They have all contributed to a dietary education “in the making”.

DE is thus already evolving in response to the demands of a changing world, albeit with some differences in rate of progress between the industrialised countries of the North and the developing countries of the South. The difference can be attributed primarily to the difference in the epidemiological disease situation, which is still in transition in developing countries of the South (Chart 1). The overlap of undernutrition and NCDs (and obesity) in the same communities and even in the same family has called for efforts to rethink health policy with more focus on prevention and for measures to adapt the nutrition education messages to seemingly contradictory situations (Maire *et al.*, 2002). Differences can also concern the gaps that exist in the legal, normative and regulatory frameworks and in the mechanisms for their enforcement and inequity in access to basic infrastructure services and social protection systems. The level of health and nutrition literacy (Vancheri, 2011) is a further contributing factor.

Chart 1 - The risk transition



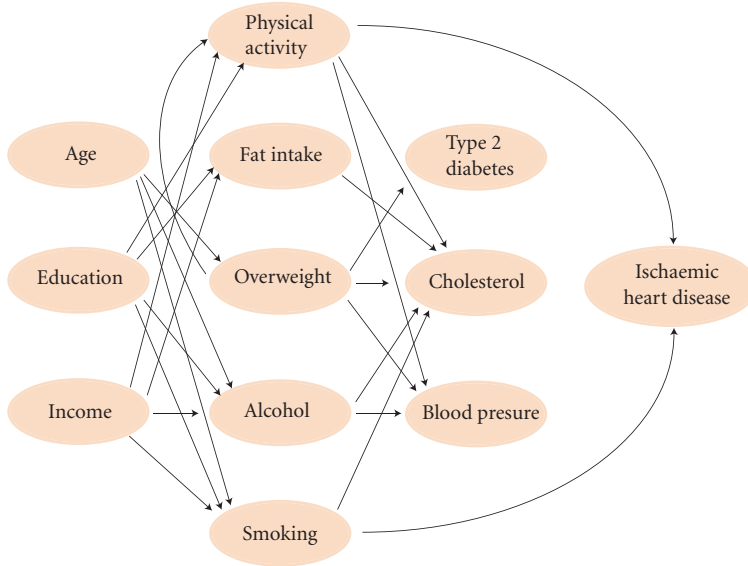
Source: WHO (2009b).

Putting new knowledge and scientific advances into practice

The application of the principles of biological systems (Brunori *et al.*, 2008) in the study and analysis of cause and effect has allowed a better understanding of the role of each of the factors involved in the multi-layered interdependent causal pathways of diet-related problems. This in turn has helped to define their respective roles and inter-connections in a multi-disciplinary dietary education programme (Figure 2).

The old model of disease causation that identified specific causal agents allowed little scope for the view of free individual choice and behaviour as the main determinant of

Figure 2 - The causal chain

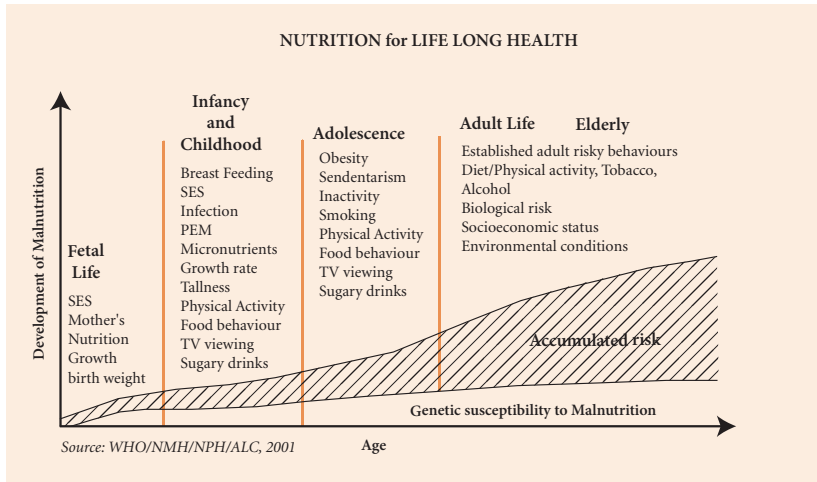


Note: This figure illustrates the major causes of ischemic heart disease. The arrows indicate some (but not all) of the pathways by which these causes interact. Source: WHO (2009b).

health or for population-level health determinants that affect in particular the spread of epidemics and the supply of food. A.J. McMichael (2009) believes that the recent public discussion of the rise of obesity in modern populations is an exemplary demonstration of this argument. Aberrant individual behaviour, fatness genes, and counselling by primary health-care personnel are all relevant, but only as adjuncts to the required government policy. Weight gain has, in modern times, become essentially a population-level problem, indicating a systemic imbalance within society of the typical pattern of daily metabolic energy flows and energy balance (Doucet and Tremblay, 1997). Re-creating living conditions that restore a balanced healthy metabolic energy profile as the standard profile calls for combined action by the health and other sectors in order to avert the foreseeable crisis of a worldwide obesity epidemic. Urban design, transport systems, food production and marketing are among the sectors concerned. Integrated policies and strategies implemented at all levels of society – individual, family, local, national and international – must necessarily recognise that individual choices are shaped by the wider context (Kumanyika, 2010). The simultaneous implementation of DE measures throughout the human life course can minimise the risk of compensatory actions and reinforce and sustain long-term behavioural change (Chart 2).

Working together with multidisciplinary partners

The discipline of nutrition science is in the midst of a revolutionary change. The Giessen Declaration (2005) repositions nutritional science as follows: “the most relevant and urgent work to be done by professionals working in nutrition science and in food and nutrition policy, is in its three biological, social and environmental dimensions all together” and calls for the design of a broad, integrated approach to nutrition-related

Chart 2 - Cumulated nutrition-related risks throughout life

problems. The interdependent nature of relations between the diet and lifestyle-related risk factors (Figure 2) reflects the intersectoral nature of food and nutrition problems and involves an ever-widening circle of stakeholders in their causal web (Vandenbroeck *et al.*, 2007; Finegood *et al.*, 2010). The real challenge facing NCD control programmes is to be able to stimulate a multi-sectoral response and to devise nutrition and health promotion programmes for implementation not only by nutrition educators, but also by the various stakeholders.

It is believed that DE also has a role to play in mobilising the contribution of other sectors to multidisciplinary programmes for achieving shared nutrition objectives on the basis of an understanding of how the potential input of each partner will contribute to the achievement of the shared nutrition goal(s). Relevant ministries and agencies include those for agriculture, food, finance and economy, trade, consumer affairs, development, transport, urban planning, education and research, social welfare, labour, sport, culture, and tourism. The active involvement of civil society is important for fostering public awareness and demand for action and for supporting the implementation of planned activities. Well-formulated food, nutrition and health messages can target various stakeholders and create a synergy between their respective actions, which will address complex and long-acting processes that cannot be managed by single-sector action.

The lead role of health professionals

The health and nutrition specialist continues to play the leading role in the formulation of the messages conveyed in nutrition communication and education programmes (WHO, 2006). Health and nutrition messages serving the purpose of advocacy directed at the political or decision-making levels in the various sectors must necessarily be backed by economic analyses and arguments that clearly indicate – in health and development terms – the potential gains as well as the negative cost of inaction. It has been observed, however, that the health sector is still hesitating to embrace the other stakeholders concerned in a truly multidisciplinary approach to DE and health

promotion. Yet the optimal delivery of the sector's professional role actually depends on the contribution of other sectors towards improving the underlying determinants of population health, and A.J. McMichael (2009) wonders whether this hesitation on the part of the health sector – which carries primary responsibility for nutrition education – is due to the fact that this interdependence is not fully understood. The success of multidisciplinary approaches depends on action to remedy such deficiencies.

Integrating social health determinants

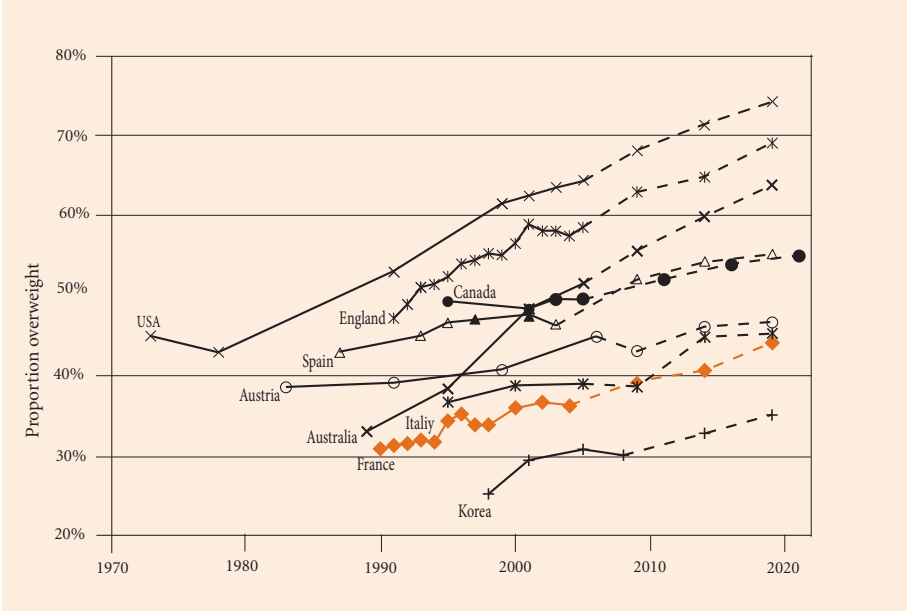
The publication of the final report of the WHO Commission on the Social Determinants of Health (CSDH, 2008) drew attention to the impact of those determinants on the health, nutrition and well-being of populations. They have now been added to the list of enabling and supportive environments that enhance a successful outcome for health promotion and dietary education programmes. Extreme poverty, lack of access to clean drinking water and to other basic infrastructure services and hygienic living conditions undermine DE efforts, since their negative impact constitutes a barrier to the application of the knowledge gained from health and nutrition education/promotion measures. Changes in the social and economic environment have been identified as being the cause of risk factors for NCDs becoming widespread (Beaglehole *et al.*, 2011). Diet and physical inactivity, as well as tobacco and harmful alcohol use are risk factors for NCDs, especially in children. Research evidence has shown that a certain level of health and nutrition literacy (Vancheri, 2011), of income, and of household food security is required for families to be able to apply the teachings of the commonly used food pyramid or dietary guidelines and, in particular, to meet the fresh fruit and vegetable requirements (Stewart *et al.*, 2011; Padilla, 2010a). An appropriate social protection system can guarantee equity in access to food and act as conditions enabling poor households to apply the DE messages and advice. The prolonged association of poverty with NCDs poses a developmental risk and can act as a barrier to the attainment of the Millennium Development Goals (MDGs), in particular the health-related Goals, MDGs 1, 4, 5, and 6. (Beaglehole *et al.*, 2011). Under such conditions, DE will need to be backed by poverty alleviation programmes and social protection systems in order to enable poor families to have access to balanced food intake.

Complementarity between dietary education and health promotion

Research in the fields of health, nutrition and the social and behavioural sciences has accumulated a wealth of details on – *inter alia* – the way people live, the time spent on food-related activities such as meal patterns, food preferences, when, where and what people eat, how food is prepared, the type and frequency of physical activity, and the impact of different lifestyles on the type and quality of foods consumed. The overlap in the respective health and nutrition objectives of activities for promoting healthy diets and improving health status has led to a mutually beneficial joining of efforts between DE and health promotion activities. This is particularly evident in programmes designed for the prevention and control of NCDs (Sassi and Hurst, 2008). The lifestyle risk factors which are identified in the World Health Organisation's Action Plan for the Global Strategy for Prevention and Control of Non-communicable Diseases 2008-2013 (WHO, 2009a) and which are the focus of health promotion (and DE) activities in the various

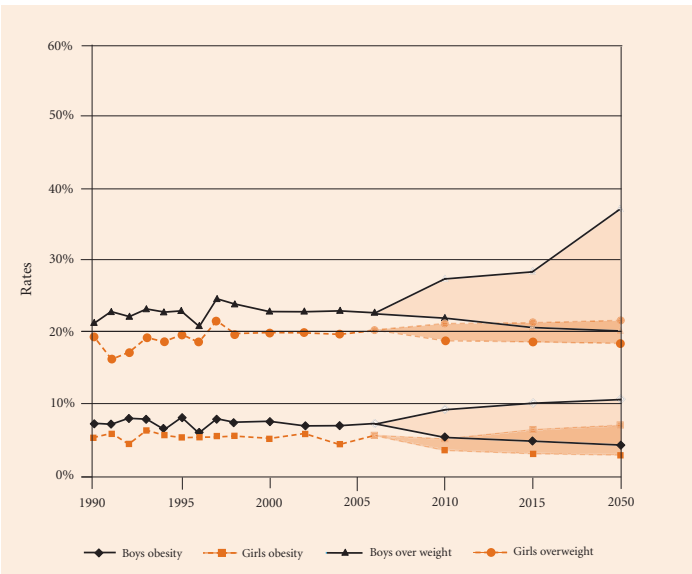
strategies for NCD prevention and control include the use of tobacco, harmful alcohol intake, physical inactivity and unhealthy diets.

Chart 3 - Past and projected overweight rates in some countries



Source: OECD (2010).

Chart 4 - Past and projected overweight and obesity rates for children in France



Source: "Analysis of data from the survey Santé et Protection Sociale 1992-2006, children aged 3-17" (OECD, 2010).

Given the alarming increase in diet and lifestyle-related NCDs, in particular obesity, over the past few decades (Charts 3 and 4), counselling on physical exercise and management of the body's energy balance (Kumanyika *et al.*, 2010) has become an essential component of DE and health promotion programmes. Inculcating the physical exercise habit in children at an early age is regarded as an important component of campaigns for the prevention and control of obesity and other NCDs. The same goes for instilling healthy lifestyle habits in young children. The European-funded community-oriented intervention programme studying the "Identification and prevention of dietary and lifestyle-induced health effects in children and infants" (IDEFICS) aims to help develop new pathways for sustainable health-promoting communities. The data generated will produce guidelines for caregivers.

DE measures throughout the human life cycle

Pregnancy and early childhood

The period of early childhood (9 months of pregnancy and the first two years of childhood) has been identified as the time when the future health of adults in respect of diet-related chronic non-communicable diseases (NCDs) is determined (Victoria *et al.*, 2008). The critical importance of this early formative period in a child's life is based on scientific evidence that traces the aetiology of several of the diet-related NCDs back to pregnancy and early childhood and to the illnesses, nutritional deficiencies and environmental insults suffered during this period of the human life cycle. A shift has thus resulted in the focus of nutrition education in order to include that critical early period of rapid growth (Chart 2). DE programmes that provide advice and guidance on balanced diets for pregnant women and on the importance of the exclusive breast feeding of newborns for at least 4 months are of paramount importance in NCD prevention and control programmes. In recognition of the above, the international mobilisation for the prevention of hunger and food insecurity has focused support on the first 1,000 days of life.

1,000 Days: Change a life, change the future

The programme with the above name was adopted by a group of world leaders and development agencies as a title for the communiqué announcing the outcome of their meeting on 21 September 2011. It emphasises the importance of working in partnership to address the crisis of malnutrition, which has been aggravated by the economic crisis, unstable energy prices and continued food price volatility. Chaired by Hilary Clinton, the meeting that brought together world leaders and development partners was held in New York on 21 September 2011. The 1,000 Days Partners gave themselves 1,000 days to produce results, from September 2011 to June 2013. The same figure also represents the 1,000-day period from pregnancy through to age two, which is critical in shaping a child's life-long health and development. It represents a window of opportunity during which a set of proven nutritional measures can dramatically improve a child's chances of surviving and living a healthy, productive and prosperous adult life. The 1,000-days Partnership serves as a platform for encouraging investment and strengthening policies to improve early nutrition in the developing world and to help achieve measurable

benchmarks in improving maternal and child nutrition with long-lasting positive effects. This is done in alignment with the Scaling-Up Nutrition (SUN) Framework, which is a strategic approach that seeks to coordinate and accelerate international efforts to combat undernutrition (United Nations, 2010) under the leadership of the UN Secretary General and his Special Representative for Hunger and Food Security.

The school-age child

It is in programmes targeting this age group that regulatory measures, innovative initiatives, and successful public-private partnerships have been introduced in DE. Innovation included the application of active and participatory education methods and of modern information/communication technology. The rapid and alarming rate of increase in overweight and obesity among school children is monitored by surveillance systems in northern Mediterranean countries (OECD, 2010). Chart 4 gives the projected figures for France. Obesity at an early age is not only a risk factor for chronic health conditions in later life, but is also associated with problems of poor self-esteem and psycho-social difficulties. Preventing obesity in schools builds on the recognition that achieving and maintaining a healthy weight is not just about a “diet” or “programme”. It is part of an on-going apprenticeship in lifestyles and practices that children can adopt at an early age and keep for the rest of their lives. Schools can help children adopt healthy eating habits and physical activity behaviour, which are the keys to preventing obesity. It is their responsibility to include intra-curricular classes for physical education and provide opportunities for sports activities. The participatory approaches and hands-on experiences that were used in some initiatives take DE one step further, turning theory and knowledge into practice.

The Slow Food Foundation is particularly active in this area, especially in developing countries. Taste education and reviving the “memory of taste” for traditional Mediterranean foods is considered critical for preserving continuity in the eating habits of Mediterranean people. Schools and school-age children across European Union Member States have benefited from a number of regulatory and enabling measures adopted by the European Commission within a strategy for reducing child obesity (Box below). Improving the nutritional quality of school meals, promoting the consumption of fruit and vegetables through the free distribution of fruit in schools, and integrating physical education as an intra-curricular subject are some of the strategies adopted.

Feeding the elderly

With the increase in life expectancy in Mediterranean countries the elderly form a community that is growing in numbers. On-going European-funded research projects are currently studying how diet can promote the health of the elderly and help prevent the development of age-related disease. One of the tasks that have been assigned is to produce a food pyramid for use in DE for the elderly, which meets the special dietary needs of those over 65 years of age (EUFIC, 2011). Knowledge on how a dietary system can impact on and prevent age-related diseases and functional decline will be valuable for DE as well as for a wide range of stakeholders, from the scientific community and health professionals to policymakers and industry. The integration of new knowledge

European school-based measures for controlling obesity

School-based measures can have a wide outreach to children of all social classes and, in turn, to their families. The aim of school DE programmes is – inter alia – to improve children and young people’s eating habits, to provide food and taste education for youngsters and make healthy options available, thus enabling them to make informed food choices. The programmes are co-financed with European funds and are matched by national and private funds. Two major initiatives were launched following the publication of the European Commission’s “Strategy for Europe on Nutrition, Overweight and Obesity-Related Health Issues” in 2007. The EU School Fruit Scheme (Council Regulation [EC] No. 1234/2007 [Articles 103ga and 103h] and Commission Regulation [EC] No. 288/2009 of 7 April 2009) and the EU School Milk Scheme (Council Regulation [EC] No. 123/2007; Commission Regulation [EC] No. 657/2008 of 10 July 2008) aim to provide easy access to fruit and quality milk products in conjunction with awareness activities and educational measures that teach children the importance of good eating habits. Initiated at the start of the 2009-2010 school year with 23 participating Member States, these schemes involved 25 States by the next school year 2010-2011. Eligible aid applicants among educational establishments include nurseries, other pre-school establishments, primary and secondary schools, education authorities, the suppliers or distributors of the products, as well as any public or private body managing the distribution of the products and the associated communication or evaluation activities. Local health authorities are required to endorse the list of products eligible for distribution in schools. The “Drink-it-Up” (<http://www.drinkitup.europa.eu/>) campaign aims to inform Europeans about the benefits of dairy products as a healthy alternative to junk food and drinks. The “Tasty Bunch” campaign under the slogan of “Eat it, Drink it, Move it” disseminates its messages through roadside shows in seven European countries with an information /education approach combining educational activities and games; it is supported by an interactive website, competitions and other events (<http://europa.eu/agriculture/tasty-bunch/>). The “European Schools for Healthy Food” campaign, which began in May 2010, is funded by the DG for Agriculture and Rural Development of the European Commission. It is a project coordinated by the Slow Food Foundation with 10 partner countries including France, Italy and Spain. The “Dream Canteen” initiative, a component of the project, promotes, in particular, the basic values of goodness and sustainability.

Source: “European Schools for Healthy Food” (2010), a European Commission-funded campaign (AGRI.2010-127).

on nutrition and lifestyle into DE for the elderly will help to raise awareness and increase the understanding of the contribution of nutrition to healthy ageing and, in turn, will support the stakeholders in their efforts to improve the health and quality of life of the ageing population (EUFIC, 2011; INPES *et al.*, 2010). DE programmes targeting this age group are expected to guide the consumer in making the right choices from the wide range of food products on the market that claim to be specially suited to the elderly as well as to promote healthy lifestyles and physical exercise.

Integrating environmental concerns

A major concern expressed in various contexts over the past few decades is the balance between man’s health and the biosphere. The Giessen Declaration (2005) added an environmental as well as a social dimension to the science of nutrition and recognises that, “the human species has now moved from being principally concerned with personal and population health and with the exploitation, production and consumption of food

and associated resources to a new period. Now all relevant sciences, including that of nutrition, should and will be principally concerned with the cultivation, conservation and sustenance of human, living and physical resources all together; and so with the health of the biosphere". The physical, nutritional, microbiological, and mental impact of climate change came to the fore on the occasion of the 2009 Copenhagen Conference (McMichael *et al.*, 2009). The realisation that the perpetuation of current eating patterns is placing a huge burden on the environment has exacerbated existing concerns about food security and the sustainability of the food supply system (Rastoin and Ghersi, 2010; European Commission, 2011). This calls upon DE programmes to integrate a dimension that is directed at promoting the consumption of sustainable diets, protecting natural resources and reducing waste. Diets that are protective and respectful of biodiversity and ecosystems are culturally acceptable, accessible and affordable and nutritionally balanced and safe, and at the same time optimise natural and human resources (FAO, 2011a). The Mediterranean Diet is an example *par excellence* of a sustainable diet. Reasserting the value of the food heritage of Mediterranean countries can become the mainstay of efforts deployed to preserve environment-friendly Mediterranean eating practices (Padilla, 2010b). DE is thus expected to convey a number of messages that promote sustainable diets and the ethics of food consumption as applicable and relevant to each country and location and, more importantly, to raise awareness about current environmental issues such as carbon and water footprints. European initiatives to create networks among Mediterranean countries around environmental themes such the "Eating City" project, the "Ecopolis" project of the Sustainable Earth Alliance², the move by the Mediterranean Institute of Certification (IMC)³ to create an ECO-friendly food quality label for mass catering services and restaurants, or the organisation of a series of Mediterranean Study Days to promote the value of the quality and safety of traditional food products of the Mediterranean countries (RIFOSAL Consortium)⁴, are progressively expanding to involve a network of countries around the Mediterranean, both north and south.

Communicating with consumers

Considering that an appreciable volume of food-related information that targets the public is produced by sources other than DE programmes, it is up to DE to help the consumer correctly interpret the significance of the information received, whether on a food label, on a menu, in the press, on the Internet, or from other sources. Keeping the consumer informed of new developments and scientific advancement in the field of food and nutrition is a responsibility of DE; with proper information, the consumer can make the correct health choices when faced, for example, with the newly emerging ultra-processed foods (Rastoin and Ghersi, 2010).

With promotional information on commercial products dominating food information, DE education support in many instances has failed consumers, who have been left to cope on their own. The growth of the food industry – and the multiplication of novel food

2 - Newsletter Sustainable Earth Alliance, 7, October 2010 (<http://www.terre-citoyenne.org/en/des-ressources/newsletter/october-2010.html>).

3 - Mediterranean Institute of Certification (IMC) (<http://lnx.imcert.it/v3/index.php?&lan=en>).

4 - Consorzio per la Ricerca e Formazione sulla Sicurezza Alimentare (RIFOSAL) (<http://www.rifosal.net/>)

The public health significance of ultra-processed products

A commentary published by Carlos Monteiro (2010) was not intended as an attack on the food industry as a whole or, more specifically, the food and drink production, manufacturing, distribution, catering and associated industries and their trade organisations. Carlos Monteiro agrees that the development and survival of the human species, and of civilisation in any sense of the word, has obviously always depended on the reliable and sustained production of food. He concurs that to demonise the food industry as a whole would be ignorant and irresponsible. However, Monteiro's commentary is implicitly critical of the current policies and practices of food and drink manufacturers, caterers and associated industries, whose profits depend on the sale of what are termed ultra-processed products. He goes on to state that it would be absurd to suppose that ultra-processed products, which characteristically are ready-to-eat or ready-to-heat "fast" or "convenience" meals, dishes, foods, drinks, and snacks, are some sort of poison. The conventional evidence that some of these products – in particular sugared soft drinks – as now consumed in typically large quantities in hot countries, are seriously harmful to public health is extensively reported in the literature (Warner *et al.*, 2006; Adams, 2005). This commentary does not say, nor does it imply, that the only healthy diets are those consisting solely or predominantly of unprocessed or minimally processed foods. The public health problem caused by ultra-processing becomes evident and turns into an acute crisis as the proportion of ultra-processed products within food systems, food supplies and family or individual diets rises, as it has done rapidly throughout the world, especially since the 1980s.

Source: Monteiro (2010).

products – was too rapid for DE programmes to keep pace and provide guidance for consumers on how to be discriminative and make the healthy choice when faced with easily accessible and attractively priced processed products that are poor substitutes for traditional food products. The historical absence of appropriate nutrition education programmes to counterbalance the commercials and promotional material on processed foods of the 1970s and 1980s gave the food industry the monopoly of the food promotion scene. By the time the health professionals and nutritionists raised the alarm (WHO, 2003) about the negative impact of the unaccompanied transition from age-old food systems to modern "untested" eating patterns and food habits, the damage had already been done.

Public media and information technology

Although the printed media often convey DE messages and treat DE topics, televised programmes remain the most popular form of media communication to the wider public particularly in the southern Mediterranean countries. Television programmes that disseminate information on traditional Mediterranean foods and sustainable diets and cookery demonstration programmes can reach a much wider audience than health-facility-based DE activities. They are popular and are often the primary communication channel for DE messages. However, television is a double-edged sword in the absence of regulations to control the aggressive advertising campaigns for sweets and junk foods that target children.

Consumers living in communities with access to the Internet can benefit from the many forms of DE information and counselling services that are available through the World Wide Web, provided they are taught to seek them (Warner *et al.*, 2006; Adams, 2005).

Several national nutrition programmes have websites that provide all types of information and are often interactive, applying modern education and communication technologies that can even include pre-recorded video footage of live demonstrations. Several examples of DE advice for web-based social media users serve food, health and nutrition objectives. The DE messages are usually coupled with guidance on practical issues such as making out a health-conscious shopping list, composing a healthy menu, deciphering labels on food composition, what foods to avoid for their high salt and sugar content, the types of fat to avoid, and how to manage food allergies; there is even advice on classes of physical exercise and there are tips for physical fitness.

A good example of a national DE and communication programme is the French National Health and Nutrition Programme 2001-2010 (PNNS). The PNNS is an example of government-sponsored public-private collaboration between research and education institutions, the food industry, healthcare organisations and consumers. The evaluation of the second phase – 2006-2010 – reports the relative success of the “communication” component (Menninger *et al.*, 2010). This positive result could be attributed to the multiplication of communication channels and the diversification of the information campaigns that are decentralised and designed to meet the DE needs of the various segments of the target populations.

Culinary art and gastronomy for propagating DE messages

The growing popularity among consumers of cooking recipes, cookery classes and demonstrations and the creativity of Mediterranean chefs has added an attractive dimension to DE that is also popular with the public media, whether printed, audiovisual or on digital forms of support as is the case in Turkey⁵. Dissemination of culinary tradition provides DE with the opportunity to document and propagate the country's food heritage thus serving nutritional objectives as well as preserving memory, protecting biodiversity, and promoting the production and marketing of traditional food products. In the participatory culinary education initiative in Lebanon the chefs are housewives representing different gastronomic regions of the country. The “Tawlet El Tayyeb” weekly culinary demonstrations and tasting sessions (CIHEAM, 2011) use the produce of the regions to demonstrate how to prepare traditional regional Lebanese dishes. The promotion of gastronomic tourism, which also helps to make Mediterranean food systems known and to preserve continuity, is extending to the southern Mediterranean countries and is well underway in Morocco, Tunisia, Turkey and Lebanon. The Chef Association of Egypt is currently engaged in transposing ancient recipes of Egypt's food heritage and adapting them to the preferences of the 21st century consumer (Hassan-Wassef, 2011), thus facilitating the trans-generational transmission of a valuable heritage. The contribution of the science of gastronomy to the dissemination of the values of the Mediterranean dietary system has been reinforced by the establishment of the Gastronomic University in Italy⁶ (in the Piedmont and Emilia Romagna regions). Furthermore, the participation of Mediterranean countries in local and international food, gastronomy, and catering fairs offers a tasting experience and raises awareness as to the health and nutritional value of their food and helps to create market demand.

5 - Ministry of Culture and Tourism of Turkey, *The Turkish and Ottoman Cuisine*, Vol. 1 and 2 (DVD).

6 - Università degli Studi di Scienze Gastronomiche (<http://www.unisg.it>).

Dietary education in the 21st century

Several factors have contributed to giving the discipline of DE as portrayed in the present review new form and content: the rising levels of health and nutrition literacy, the use of all forms of modern information communication technology, and the multiplication of the nutrition education subjects to be covered and of the results to be achieved through dietary education. The main noticeable difference between DE today and that practised in the mid 20th century is that, a few decades ago, food and nutrition education was mainly concerned with measures that focused predominantly on the chemical, biological and medical aspects of nutrition. Furthermore, the kind of food we eat and the way we eat used to be the responsibility of the family. With the interruption of the inter-generational transmission of food heritage or know-how, DE has moved in to protect the integrity of traditional food systems and prevent the loss of inherited knowledge, customs, practices and techniques. At the same time, DE aims to bridge the incompatibility gap that is perceived between the inherited food systems and modernity. DE thus continues to evolve, proposing a wider range of food-related learning experiences, which can sometimes be perceived as being outside the public health sphere and which – formerly – would have been the responsibility of the family. Apprenticeship and initiation into the actual practice of healthy eating habits in a modern world is an example of a new application for DE. A methodology has even been devised for measuring the competence of eaters (Satter, 2007). The Box below presents a set of guiding principles for increasing the impact of DE programmes.

Guiding principles for Dietary Education in the 21st Century

The following is a set of guiding principles aiming to increase the impact of DE derived from the issues raised in this article. They need to be adapted to local contexts:

- Give due attention to the legal, normative and regulatory frameworks and supportive measures in the public domain that create an enabling environment for turning DE knowledge into practice.
- Learn lessons from the success stories in some Mediterranean communities which have preserved their food habits.
- Support efforts mobilised to transpose the Mediterranean food heritage into food consumption patterns compatible with modern lifestyles.
- Use culinary art to adapt food heritage recipes to the demands of the modern consumer.
- Create mechanisms to involve the target populations in the design of DE programmes whenever applicable.
- Use the results of the monitoring and evaluation of DE measures to guide reprogramming and improve impact.
- Identify and overcome barriers – however trivial – that stand in the way of the practical application of the teachings of DE.
- Establish rules for engagement with the private sector and the food industry as an ally and partner (UNSCN, 2007).

- Strengthen and support the DE role of the family and the school.
- Raise health and nutrition literacy levels; this remains the most important protective measure against NCDs.

To understand what DE stands for today, a listing was made of all the types of information used in DE and the related support activities which communicate a dietary education message. The information was found to vary according to the subject treated and the impact to be achieved. DE information could be designed to serve a variety of purposes such as awareness raising, persuasion and attitude change, teaching, learning, demonstration, promotion, advocacy. DE programmes can also be used to contribute to habit forming or habit breaking, guided by the results of on-going research (Issanchou, 2011) that aims to better understand how food habits and eating patterns are formed and the key determinants of behaviour change. A review of the different DE messages currently in use has shown wide variation in the topics they addressed, of which about 22 were identified. They varied between simple messages on the food we eat and why we eat it to market-related consumer education, sugar, salt and fat control, preparing and serving food – from theory to practice –, providing contextual⁷ food and nutrition guidance, or promoting ethical considerations such as reducing food waste. The outcome of the above exercise shows that, in the 21st century, DE addresses areas that are not strictly within the public health and disease spheres but extend to the social and environmental and can even deal with family and cultural values and ethical considerations (Reisch and Gwozdz, 2011).

Policy and programme implications

The overview given in preceding sections shows that the evolution of the science of nutrition is a process in full progress (Cannon and Leitzmann, 2005), which continues to interact with the various factors that have contributed towards influencing the form and substance of DE over the past decades. They show how a form of DE is emerging that is adapting to the demands of new roles and new types of action. That is to say, the process of transformation into a “new” form of dietary education is already underway.

A dietary education evolution in progress

However, DE programmes are not homogeneous; the level and quality of performance varies in both northern and southern Mediterranean countries. The structured and holistic approach to NCD (and obesity) prevention and control is encountered more in the northern countries, where a wide range of partners, and in particular the food industry, are mobilised and involved (Ritsatakis and Makara, 2009). DE in southern Mediterranean countries tends to be more oriented towards controlling individual NCDs and there is less focus on the general preventive and lifestyle aspects of the control programmes (WHO, 2011). Also, NCDs and obesity are not as high on the political

7 - The term describes unusual situations that are not addressed in DE programmes, such as DE on balanced diets for families who live in poverty, have no access to fresh food or to cooking facilities, or balanced diets when eating canned food (Cruise and Ware, 2010).

agenda as they are in the north despite the fact that some of the highest obesity rates in the region are found in the south, and despite the serious economic implications for developing countries (Global Health Council, 2011; United Nations, 2011).

The policy and programme implications for DE are examined from the perspective of the current NCDs (and obesity) crisis. Attention is given to policy and programmes that support and enhance the contribution of DE towards promoting the Mediterranean dietary system as the model for a “new food culture” for the 21st Century. The present point in time is exceptionally opportune for launching action based on the Mediterranean dietary model – a model that can offer practical, affordable, and accessible solutions that are derived from local dietary systems and are culturally acceptable. This would hopefully restore some order to the observed breakdown of meal rhythm and eating habits and the disruption of inherited food systems (Reich and Gwozdz, 2011). As mentioned earlier, the Mediterranean food system has proved to be versatile enough to embrace the various contexts, conditions, imperatives and demands of modernity without losing the essence of its basic features and thus guarantees the ability to adapt to different contexts. The above analysis favours the conclusion reached by Jean-Louis Rastoin and Gérard Ghersi (2010) that tradition and modernity are not enemies and that mutual correction, rather than mere cohabitation, is the solution.

Several authors have observed that awareness programmes have limited impact and that changing habits is not an easy task (Yach, 2011). If DE programmes are to achieve their expected impact they need to be accompanied by a change in living environments. The effect of any new DE on NCDs will be seriously undermined in the absence of appropriate legal, regulatory and policy measures that serve to reduce obesogenic and other risks (Townshend and Lake, 2009) and to enhance the success of DE programmes.

Basic components of a DE policy

The following paragraph is derived from various recent capacity and programme evaluation reports (Meninger, 2010; Ritsatakis and Makara, 2009; Alwan *et al.*, 2010; WHO, 2010; IOTE, 2010; OECD, 2010), as well as from the analysis made in preceding sections. It presents the conditions that have been found to contribute to the achievement of DE programme objectives.

Importance is attached to a forward-looking policy framework which involves all of the relevant sectors with a view to removing any incoherence in legal and policy frameworks that influence healthy environments and which addresses any contradictions that may exist between sectoral policies and DE messages. DE programmes must reflect integrated multi-sectoral policies, strategies and approaches and must be given adequate financial means. The creation of a forum or platform is called for (European Commission, 2007) to allow exchanges between all partners (including consumers) and to act as an overall resource mobilisation and coordination tool facilitating integrated collaborative action. It is crucial that a balance be maintained between the curative and preventive components of NCD programmes and that population-based pathways to healthy living be sustainable. Measures to promote a healthy lifestyle and the practice of regular physical activities are to be regarded as integral components of DE programmes, together with activities aiming to reduce identified risk factors. Elements in

DE policy which support the promotion of Mediterranean food systems include the introduction of appropriate measures to preserve biodiversity and the continuity of local eating habits. The latter are reinforced by involving chefs in initiatives to adapt culinary traditions to suit 21st century consumer preferences. The DE tools used for promoting sustainable consumption patterns must draw on local food resources and the Mediterranean dietary model. The policy is expected to support activities aiming to cultivate the agro-food industry as a strategic partner.

Evolution of probable scenarios

Maintaining the status quo with no change

In a no-change scenario, the situation regarding poor financing of preventive programmes in NCD (and obesity) programmes continues. Nutrition continues to rank low on the political agenda and remains low (WHO, 2010). The curative health service dimension of the programmes continues to take precedence over the preventive and health-promotion aspects. Several of the dietary educators, especially in the new generations, are not familiar with their own food heritage and food habits, and advice for improving diets does not necessarily draw on local food sources. Only a few dietary educators are aware of the Mediterranean Diet and its value and understand the notion of sustainability and what it means for their work. They may not all be familiar with the contribution of other sectors to the success of DE programmes. Dietary guidelines, tools and communication materials do not reflect local conditions and resources and may not integrate or follow the principles of the Mediterranean model.

There is no institutionalised forum that brings northern and southern Mediterranean countries together around the subject of a shared Mediterranean dietary system. The limited number of initiatives involving schools or rural communities in southern Mediterranean countries often remain isolated experiences with limited dissemination or impact of their results. There is no platform for fostering regular dialogue with the agro-food industry and other stakeholders, and there are no regulations governing the ultra-processing of food. The leadership role of the health sector is weak and nutrition programmes and their DE components do not adopt an integrated forward-looking vision of the food and nutrition situation and its health implications. Nutrition standards for marketing foods to children – where they exist – are not always heeded. Appropriate supportive measures, whether statutory, regulatory or policy-based, which serve to reduce the identified risks and obesogenic environment are weak or absent, and this considerably undermines the sustainability of the impact of DE programmes. The training of dietary educators is not updated and adapted to the demands of the current situation and remains deficient in components that relate to the shared Mediterranean food heritage and dietary model.

Best-case scenario

The best-case scenario can be described as a situation where the following is taking place or has been achieved, depending on the context where the measures are being applied. The scenario can include any combination of the factors set out below. In widening the scope of the new nutrition project, George Kent (2006) draws attention

to the limited ability of the nutrition profession to adequately cover the added social and environmental dimensions. Adequate coverage of those dimensions is one of the factors assumed to be achieved in a best-case scenario, and will necessarily have to be accompanied by “new” dietary or nutrition education that can meet new demands.

The existing initiatives and programmes for networking and dialogue between Mediterranean countries around the subject of the sustainable Mediterranean Diet have become inclusive, admitting the membership of all Mediterranean countries. Continuity in the traditional food system is maintained and dietary educators (especially the new generations) are familiar with their food heritage and the nutritional value of local foods and dishes. DE programmes preserve the trans-generational transmission of culinary tradition and the memory of taste for local foods and food products. DE guidelines and DE education programmes draw on and promote the consumption of local products and are based on the Mediterranean dietary model, and DE tools have been revised accordingly. Nutritionists and culinary experts have adapted traditional foods to render them acceptable to the modern consumer. Community-based solutions for promoting DE and a healthy lifestyle are sustainable (IDEFICS, 2011). DE programmes build on the positive experience of communities which have maintained their Mediterranean-style food systems, food habits and way of life over the ages.

Demand is created for Mediterranean-style eating and living which becomes an accessible and affordable preference for consumers. DE programmes succeed in making Mediterranean-style living and eating a way of life and everyday practice. Appropriate supportive legal and regulatory frameworks and policies have been adopted (Parker *et al.*, 2011) and barriers to healthy living and healthy food choices have been identified and reduced. Fast-food outlets offer foods and menus derived from the local food heritage. A new generation of snacks, convenience foods, and food for the elderly has been derived from local and traditional Mediterranean-style foods and respects the Mediterranean principles of low salt, sugar and fat content. Progress continues to be made by the European and southern Mediterranean food industry in achieving the targeted changes in processed foods (CIAA, 2011). Strategic alliances negotiated with the food industry succeed in curbing the production of unhealthy food. Dietary educators involve agricultural extension workers in achieving the shared goals of the protection of biodiversity, the promotion of local food products and the improvement of household food security (Christoplos, 2010). Feedback from on-going regional debates on sustainable diets and the health and other attributes of the Mediterranean Diet reach the dietary educator and are integrated into DE programmes. The global survey initiated by FAO (2011b) on the identity and the training requirements of dietary educators has been completed and the opportunity to integrate elements to promote diet sustainability and other characteristics of the Mediterranean model in the new DE training modules is taken and acted upon.

Conclusion

The global mobilisation of world leaders at the High-Level Meeting of the UN General Assembly of 19 and 20 September 2011 (United Nations, 2011) to reverse the NCD and obesity epidemic provides unprecedented opportunities for health and dietary education

to make headway in new areas and gradually assume new roles and responsibilities. Olivier De Schutter, the UN Special Rapporteur on the Right to Food, described this as the once-in-a-generation opportunity to crack down on bad diets that must not be missed (De Schutter, 2011). It was only days later that Denmark announced in the public media the introduction of the world's first-ever tax on fats, imposing a surcharge on all food products containing more than 2% of saturated fats.

Efforts deployed to date to control and prevent NCDs show that the various programmes and initiatives continue to tend to focus more on curative rather than on preventive measures. On-going initiatives to regain the curative-preventive balance offer a potential window of opportunity to strengthen the preventive component of NCD control programmes using the Mediterranean Diet as a model for developing country-specific DE programmes and schemes and materials for promoting a healthy lifestyle. Dietary and healthy lifestyle education will necessarily assume a wider and more strategic role in NCD prevention and control programmes than will be the case with other health disorders. As was aptly observed by the Hon. Nils Dauilaire⁸, the fight against NCDs is no more against bacteria, or viruses or parasites, “we are starting to get to a point where we have to battle human nature” – hence the need for a re-invented and innovative dietary education and for effective programmes to promote a healthy lifestyle.

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FOOD, TOURISM AND REGIONAL AUTHORITIES

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In the on-going debate on cooperation in the Mediterranean region, that is to say, on the relations to be developed amongst Mediterranean countries and, more broadly, between Europe and the States of North Africa and the Middle East, it is surprising to see how some topics and actors, although a potential source of impetus, have not yet been adequately explored.

This is the case with tourism and with the food industry, two fields that are at the core of Mediterranean economies and societies but where the spirit of competition seems to predominate to the detriment of efforts to seek complementarities. Two fields which have been swallowed up by globalisation and its contradictions and which aptly illustrate the change of course that must now be embarked upon in order to reconcile economy and ecology (Pennequin and Mocilnikar, 2011). The tourist and food industries create, and possibly also conserve, wealth in the Mediterranean basin. But these two strong pillars in the region are becoming more and more vulnerable given the threats that loom large over the sustainability of the development models that have hitherto been the main focus. Seaside tourism that has little respect for the environment, and dietary practices that are unsustainable in terms of human health and the well-being of the local area – such are the main trends under way in the Mediterranean region in a nutshell.

It is thus becoming urgent to break the pattern or at least to stimulate such breaks in order to change the course of public policies and induce populations to change their behaviour. The purpose of this article, which underlines the areas of interaction to be envisaged between tourism and the food industry, is to reveal emerging phenomena, countertrends and weak signals of future change. The attraction of “terroir”¹ or local-specialty, site-specific products, of which the Mediterranean region is a treasure trove, is no doubt a promising avenue for the future of regional cooperation, for it is clearly in this differentiation niche that the region can be competitive at the international level.

1 - As stated by UNESCO, the French word “terroir” is difficult or even impossible to translate. UNESCO has defined it as a determined geographical area, defined by a human community, which generates and accumulates along its history a set of distinctive cultural traits, knowledge and practices based on a system of interactions between the natural environment

Boosted by the favourable image enjoyed by the Mediterranean Diet, regional-speciality products can be cultural assets and tremendous identity markers in a strategy to propose a different type of tourism that is based on authenticity.

These are the hopes that must be pinned on the decisive role to be played by local communities. For in the heart of the various regions they are the very essence of Mediterranean diversity in terms of both tourism and cultural assets but also in the field of gastronomy and diet. A promising relational fabric is gradually forming amongst the regional authorities of Mediterranean countries. It is of course at the regional level that solutions must be found and best practices formulated for water management or regular access to quality food, to cite two conclusive examples. And it is no doubt through decentralised cooperation, that is to say, through transnational action on the part of local communities and in partnership, that the various regions with such very different dynamics could also become reconnected. In a world where globalisation prevails in the urban environment, the local environment in rural areas must also be borne in mind in order to humanise globalisation and counteract the uniformisation of our world. Here again, with its widely differing and multicultural features the Mediterranean region can offer the world that specificity and propose its solutions.

The dynamics of tourism

At the crossroads of three continents (Africa, Asia and Europe), the Mediterranean region is emblematic of world tourism. Ever since tourism began in the 19th century, the Mediterranean has continuously attracted crowds of visitors keen to discover the diversity of its landscapes and the wealth of its cultures. It attracts, on average, one-third of international tourists every year. Although this proportion has been tending to decrease since 2003, the number of tourists in absolute figures is growing significantly: between 270 and 285 million people on average per year in the 2007-2010 period, compared to 150 million in the early 1990s.

Main trends

The tremendous popularity of the Mediterranean region is to be explained by several assets. Its historical and cultural heritage is absolutely unique and makes it an open-air museum². The sea and its shores, the climate and the landscapes, and of course the quality of mingled gastronomies all carry favourable images connected with the Mediterranean Basin, which also has the advantage of being close to Europe, one of the world's leading tourist source regions. Furthermore, intercultural dialogue is greatly promoted through the intermingling and exchange that tourism inevitably stimulates. In a region of multiple mixing, discovering one's neighbours and getting to know them better contributes considerably to better understanding.

In the policies and economies of most Mediterranean countries the tourist industry has often been attributed great importance (Pauchant, 2007), since it creates both wealth

and human factors. The know-how involved carries originality, confers its typical nature, and enables recognition of the goods and services originating from this specific geographical area and thus of the people living within it. These areas are living and innovative spaces, which are more than just about tradition. – T.N.

2 - The countries bordering on the Mediterranean account for one-quarter of the sites featuring on UNESCO's World Heritage list (some 230 properties belonging to the cultural or natural heritage, according to the 2010 data).

and jobs but also acts as a catalyst for investments and infrastructures. In Greece, Lebanon, Morocco and Tunisia, no less than 15% to 25% of jobs have been created in the tourist sector. And it is estimated, for example, that tourism generates almost 3.6 million direct and indirect jobs in Egypt and 1.9 million in Morocco (Pauchant, 2011). Further common features in the Mediterranean are the fact that tourism in the region is highly seasonal and its marked concentration along the coasts (seaside resort model combining sun and beaches) in connection with mass tourism, which poses environmental and spatial problems. Similarly, despite the crises or frequent disturbances that certain Mediterranean destinations may go through, the tourism sector has generally demonstrated great resilience, as though the region's natural capital has always compensated for the economic hazard.

There are profound disparities in the region, however, between destinations regarded as mature (European countries on the northern shores) and emerging destinations (the southern-shore countries). For the Mediterranean region is marked by extremely unequal distribution of tourist flows between the various destinations: three countries (France, Spain and Italy), which ranked first, third and fifth in world destinations in 2009, concentrate approximately two-thirds of the flows in the region. If we add Turkey to the list – the destination ranking fourth in the region and seventh at world level – no less than 75% of tourist arrivals in the Mediterranean are concentrated in only four States.

Table 1 - Number of international tourists (1,000 per year)

Country	1990	1995	2000	2005	2006	2007	2008	2009	2010
France	52,497	60,033	77,190	75,908	78,900	80,850	79,210	76,624	76,800
Greece	8,873	10,130	13,096	14,765	16,039	16,165	15,939	14,915	15,007
Italy	26,679	31,052	41,181	36,513	41,058	43,654	42,734	43,239	43,626
Malta	872	1,116	1,216	1,710	1,124	1,244	1,290	1,120	1,332
Portugal	8,020	9,511	12,097	10,612	11,282	12,321	6,962	6,439	6,865
Spain	34,085	34,920	47,898	55,914	58,190	58,666	57,192	52,178	52,677
Algeria	1,137	520	866	1,443	1,638	1,743	1,772	1,912	1,900
Morocco	4,024	2,602	4,240	5,843	6,558	7,408	7,879	8,341	9,288
Tunisia	3,204	4,120	5,058	6,378	6,550	6,762	7,049	6,901	6,902
Egypt	2,411	2,871	5,116	8,244	8,646	10,610	12,296	11,914	14,051
Lebanon	-	450	742	1,140	1,063	1,017	1,333	1,851	2,168
Albania	30	40	32	185	287	258	1,330	1,775	2,229
Turkey	4,799	7,083	9,586	20,273	18,916	22,248	24,994	25,506	27,000

Source: UNWTO.

The financial benefits of tourist activities, which depend on the extent to which the economy is structured, are a further factor of divergence. Profitability varies widely from one country to another, since average tourist expenditure differs according to destination, which means that destinations do not collect the same revenue at the economic level. Morocco and Tunisia, for instance, receive approximately the same volume of visitors but show marked differences as regards the financial impact of this tourism, with the Sherifian Kingdom clearly in the lead.

Table 2 - Revenue from international tourism (million US dollars)

	2007	2008	2009
Albania	1 479	1 849	2 012
Algeria	219	300	330
Egypt	10 327	12 104	11 757
France	63 653	67 783	58 480
Greece	15 687	17 586	14 796
Italy	46 144	48 757	41 872
Lebanon	5 796	6 317	7 157
Malta	1 142	1 215	1 026
Morocco	8 307	8 885	7 978
Portugal	12 917	14 047	12 329
Spain	65 020	70 244	58 586
Tunisia	3 373	3 909	3 526
Turkey	20 719	25 031	24 556

Source: World Bank.

Lastly, some Mediterranean countries, or some municipalities, can be subject to considerable pressure when the tourism dynamic soars, as it sometimes does for a season or around a specific event. A volume of tourists three times the size of the local population arrives on the island of Malta every year. The same can be said for Cyprus, Crete, Corsica or the Croatian islands. The economic advantages then compete with the socio-demographic constraints and natural endowments. At the height of the tourist season, coping with this influx and planning and managing food supplies on certain islands or in certain regions or cities can prove to be an extremely complex task for the public authorities and for private operators.

Emerging trends

Whereas the Mediterranean region enjoyed a virtual monopoly on the world tourist market until the end of the 20th century, its market share is now decreasing (due mainly

to Asian competition – China became the third world destination in 2010). It can be observed that while Mediterranean destinations such as Croatia, Turkey, Egypt or Morocco have been going from strength to strength for several years now, arrival figures and economic revenue in others are stagnating.

Furthermore, as the result of the international financial crisis and the ensuing economic recession, the progression of tourist flows throughout the world has been slowing down – it even came to a standstill in 2009 – although it rose again slightly in 2010 (WTO, 2011). This trend is important when one considers that tourism had been steadily growing for decades (increasing from 25 million tourists in 1950 to 880 million in 2009). And the Mediterranean region has likewise been affected by this downswing. Given that 2011 was marked by tremendous social and political upheaval in several countries on the southern shores, it is highly likely that both marketing and trade measures will be necessary in order to win back market shares and securely establish the popularity of these Mediterranean regions, whose economies are often very dependent on the tourist industry for growth. Between 17 and 20 million travellers are reported to have revised their southern Mediterranean travel plans in 2011, for instance, changing their destinations from the southern and eastern shores to more stable sites in Turkey, Croatia and the southern European countries (Pauchant, 2011).

What is more, tourist amenities in the Mediterranean sometimes seem far removed from the new expectations of the clientele – a factor that could be a stumbling block for this recovery strategy. Apart from this security requirement, which can generate a trend towards greater isolation (where hotel zones become bunkers that are completely cut off from local realities), the changes that are taking place in tourist demand must not be underestimated. The populations in the tourist source countries now expect more diversified tourism products including shorter stays (budgetary constraints or plans to go on several shorter trips throughout the year) and flexible and custom-tailored arrangements (the Internet is playing an increasingly important role here) as well as all-time favourites such as thalassotherapy, health tourism or adventure tourism.

These trends make tourist activities less uniform, and the Mediterranean model, which is based essentially on seaside tourism, must adapt to them. The tourism strategies of the riparian States are currently diverging, however. The mature destinations on the Northern shores are having to modernise and renew their tourist amenities, because they are affected by the drop in the number of arrivals and in revenue. While strengthening their position with a general range of low-cost products, the emerging destinations rarely opt to promote controlled and sustainable tourism, preferring to focus their efforts on a headlong rush to boost arrival numbers.

Lastly, the broader issue of the environment is becoming a major constraint in the Mediterranean tourism equation. The overtapping of water and land resources which can result from tourist activities, particularly when services such as golf courses in arid zones are developed which are unsuited to local conditions, raises serious questions as to the development model to be pursued in public policies. The efforts to boost tourist visits in purely numerical terms must clearly give way to strategies aiming to define a happy medium between attractiveness, socio-economic impact and quality of the tourism product in terms of ecological responsibility. Measures to preserve natural and cultural

sites are thus a *sine qua non* for perpetuating the attractiveness of these countries. If landscapes are destroyed and if the pollution of the Mediterranean continues, the sustainability of tourism itself will be threatened. Since such a failure in the region would inevitably entail economic and social risks, the overall approach to tourism in the Mediterranean region must be radically reformed through measures to promote diversity and embark on a course of synergistic development that is mindful of the other broader issues in the region (Farsari *et al.*, 2007).

Focus on rural affairs and food issues: responsible tourism?

Now that the time has come to reformulate tourist amenities in Mediterranean countries to cope with the new trends and challenges, it would seem important to examine the advantages which measures to promote rural areas and dietary issues might bring. Traditions and specific features can dovetail in this region, surprising the outsider while highlighting the wealth of the local culture and resources. This corresponds with a cultural and ethical form of tourism, which promotes both the heritage and the human capital of the areas concerned, which are sometimes marginalised because they are remote from the urbanised, outward-looking coastal belt. This type of alternative tourism can take various forms with a variety of denominations: heritage tourism, sustainable tourism, solidarity tourism, green or cultural tourism, and so on, depending on the approach to be promoted. Initiatives of this nature were backed up at the World Summit on Sustainable Development in Johannesburg in 2002 and have been strengthened by the World Tourism Organisation's programme for reducing poverty through sustainable tourism. It was at the Earth Summit in 1992 that the idea of responsible tourism emerged. While agriculture and tourism are the main assets of the Mediterranean countries and North-South tourist flows are steadily increasing, rural areas have excellent prospects for this new form of tourism.

Rural tourism is developing in the Northern Mediterranean countries – to the extent that the phenomenon has played a major role in popularising the expressions “desire for country life” or “*back to nature*”. Although these expressions are sometimes rather exaggerated, they express the attractiveness of regions that has to do with their authenticity; for tourists in search of emotions, that authenticity is the spice that will add pep to a rather colourless life. This is true of both the landscape aspect and the human dimension. Know-how, typicality of crafts or foods, protected areas, festivals and customs – all of these specific features hold potential for local development. As the result of this rural tourism trend, farmers are creating innovative activities. More and more farmers are beginning to develop agro-tourism services such as providing self-catering facilities (hotel trade) and meals for guests (catering trade). These trends are promoting diversification of the rural economy, and they illustrate the other facets of farming, which is now recognised as a multifunctional activity.

In the southern and eastern Mediterranean this eco-tourism trend is gradually progressing but is still marginal. Some countries are trying to boost this emerging market niche as Morocco is doing by combining tourism efforts (the “Azure Plan”) with agricultural strategy (the “Green Plan”), whose second pillar is designed to support agriculture and promote regional-speciality products. International Green Globe

certification³, which takes account of the environmental and social aspect of activities, has also recently been made available in Morocco, Tunisia and Algeria. In Tunisia, the “Rural Innovation in Difficult Areas” scheme supports the creation of traditional rural self-catering accommodation and hiking trails, visitor participation in the installation of local craft workshops, and the restoration of communal granaries. This initiative benefits the Medenine region, a leading world tourist destination about 100 km from Djerba. Other projects focus more on the sale of handicrafts and local products or on tourist participation in farm work.

The Bouhachem Nature Reserve - Morocco

The Morocco ART GOLD Programme was launched in 2007 under the auspices of the United Nations Development Programme (UNDP); it is part of the ART Initiative (support for regional and thematic human development networks), which is designed to boost local development through sustainable partnerships between Moroccan and foreign local authorities.

In this context, the wealth of the Bouhachem area in northern Morocco is being promoted as a prime destination in Moroccan tourism. The Bouhachem Nature Reserve project reveals the biodiversity of the region, which straddles three provinces (Chefchaouen, Tetouan and Larache), and aims to establish products that are an integral part of nature tourism. One of the options proposed is the Talembote Dam tree-farming tour.

This initiative of the Tangier/Tetouan Region is an experiment based in particular on the Luberon Regional Nature Reserve in France, which in the context of a partnership between the Provence-Alpes-Côte d’Azur and the Tangier/Tetouan regions has been sharing its experience and know-how in the field of developing natural resources with a view to promoting rural tourism; the idea is now gathering momentum thanks to the contributions of a number of Moroccan and European partners including the Government of the Balearic Isles.

For further information see www.pnud-gold.ma

Furthermore, it would be of interest to develop the avenue of culinary tourism in the Mediterranean region, promoting the links between food and culture (Counihan and Van Esterik, 1997). Food tourism has until now concerned developed countries in the main, arousing curiosity and the desire to learn, as the success of the International Culinary Tourism Association clearly demonstrates. The institutes providing training in the tourism sector seem to be attaching more and more importance to combining teaching with the food and gastronomy factor. Several Mediterranean countries now seem to be active in this field in an effort to diversify their range of tourist amenities and to promote their products. Spain is currently developing the strategy, which might be described as “food patriotism”, with the “*Saborea España*” programme that was set up in 2010. Italy – undoubtedly a pioneer in this field – is stepping up its initiatives through its Slow Food network of associations, which has become international, or the “*Eataly*” shops, which have been set up for food shoppers throughout the country (but also in

³ - *Green Globe* is an international label for travel and sustainable tourism, which is supported and recognised by the World Tourism Organisation and the World Travel and Tourism Council (WTTC). It rewards and guides tourism operators who have opted to improve the environmental and social management of their activities. This international certification, which was created in the United Kingdom in 1993 following the Earth Summit in Rio in 1992, applies to all tourism businesses and organisations – tourist accommodation, trips, catering, transport, amusement parks, tourist attractions, golf courses, etc.

New York and Tokyo), betting on the Italian passion for quality foodstuffs. Prompted by UNESCO's inclusion of the French gastronomic meal on its list of the world's intangible heritage, France presented its "So French, So Good" promotion campaign in February 2011 to boost the export of French agro-food and tableware products. It is also a well-known fact that the international reputation of chefs like Ferran Adrià in Barcelona with his "El Bulli" restaurant can enhance a city's image for tourists.

Another important signal is the increasingly agricultural tone of major international events that are open to the general public – two major examples being the *Terra Madre* conference that is convened in Italy every two years by the Ministry of Agricultural, Food and Forestry Policies, the Slow Food network, the City of Turin and the Piedmont Region, or the *Eurogusto* trade fair held in Tours in November 2009. It is also interesting to note that 2015 world trade fair – Expo 2015 – is to be hosted by Milan on the topic of "Feedin the Planet, Energy for Life". This type of event is an added attraction for regions and help to boost tourism. And of course the tremendous economic and social effects of the agricultural shows that several Mediterranean countries organise every year must also be mentioned as strategic communication media, which highlight regional gastronomie. The Moroccan international agricultural show, for instance, which is held each spring, attracts several hundred thousand visitors in Meknes.

These are just a few examples which show that synergism can be created between tourism, the rural world and food. This dialectic can be a major factor in the preservation of Mediterranean diversity but also in the promotion of the region's multiple identities. It can furthermore help to open up certain regions, stimulate employment and attenuate the overwhelming predominance of farming activities in a rural economy that is too homogenous. More and more individual consumers want to know what they are eating, and they can become consumer activists. Who could be better placed than the local authorities at the very heart of these regions to support this type of initiative? In the Mediterranean region, for example, the authorities can devise measures to bring their modern coastal towns and cities closer to the rural hinterlands by generating and strengthening cooperation links between regions.

The dynamics of regional authorities and decentralised cooperation

Decentralised State organisation, which involves transferring responsibility for public action to the smallest body in a position to meet needs, is a system where the interests of the population are effectively represented as opposed to the general interest represented by the State, and it is one which promotes the bottom-up approach. In this respect, the local or regional authorities are the most representative bodies and those closest to citizens' needs.

General overview

There are marked disparities amongst the Mediterranean countries in terms of political systems, institutional architecture and modes of governance. Although, the decentralisation processes are progressing on the whole, there are still marked contrasts, and the

shortcomings in government policies when it comes to representing the needs of local populations cannot be ignored, particularly in rural areas or regions in the interior. Decentralisation is still often regarded as a simple administrative management tool rather than as the transfer of powers to local governments. In the countries on the southern shores, for instance, the process seems to be limited to administrative reform that does not change the balance of power between institutional levels and does not enable the regional authorities to play their role as contacts and State partners at the local level to the full. The limited autonomy of local governments compared to the central State in these countries can be attributed to lack of means and, in particular, to the lack of qualified human resources, but this state of affairs is often to be explained by the lack of political will upstream.

The study on “*Decentralisation and local democracy in the Mediterranean*”, which was structured within the First 2008 GOLD World Report published by United Cities and Local Governments (UCLG *et al.*, 2010), gives a general picture of the progress made by the various countries in this field. For the past few years these countries have been reforming their legislation and even their constitutions in order to decentralise their administration to a greater extent, mainly through:

- measures to strengthen the field of action of municipal authorities (which are the basic administrative entity common to all countries);
- regionalisation, i.e. action to strengthen the role of the provinces; this concerns mainly the countries on the northern shore, however, Morocco being the only one in the south to develop this level of the administrative hierarchy;
- transfer of responsibilities from the central State to sub-State entities – a measure which unfortunately is not always accompanied by the transfer of powers and financial means, with the result that coherent action is often impossible;
- progressive private sector intervention in urban services through public-private partnerships in a context where the predominance of major cities is still growing, but essentially in the northern Mediterranean countries.

Furthermore, analysis of local public expenditure as a percentage of GDP (directly related to the means granted) reveals that levels of expenditure vary from one country to another; the countries rank as follows in descending order: Italy, France, Portugal, Spain, Algeria, Turkey, Greece, Morocco, Tunisia and Malta (UCLG *et al.*, 2010). As regards local democracy in the Mediterranean region, situations vary widely. Although there are new municipal councils composed of representatives of the population in every country, some or all of the members of those councils are often appointed, whereas in the case of elected representatives community participation is becoming eroded with a sharp decrease in the number of voters taking part in local elections.

The role of local authorities in food security and local development

The regional authorities play a major role in developing and achieving the Millennium Development Goals. The Food and Agriculture Organisation of the United Nations (FAO),

for example, has recognised that, as the primary relay of civic society, they play an essential role in the efforts to combat poverty and food insecurity, and it has developed several initiatives to strengthen its collaboration and partnerships with local authorities. With regard to food security in particular it is important to underline the role to be played by municipal authorities in supplying foodstuffs in their jurisdictions (Satterthwaite, 2010).

As urbanisation grows population density increases, exacerbating hazards in general and that of food insecurity in particular (Grünewald *et al.*, 2010). As the FAO and its “Food for the Cities” platform regularly stress, feeding urban populations is an ever-growing challenge in terms of accessibility, whether in physical terms (infrastructures and transport for delivering relatively large quantities over relatively long distances) or in economic terms (urban incomes, price of food). The fact that imported foods can cost less (low world prices and effects of tax exemptions) does not promote the development and distribution of local and national products. Yet urban consumers could be a very big market for local products with higher value added for small producers combined with urban demand favouring products of different quality. These challenges are particularly real in the Mediterranean countries (CIHEAM, 2011a).

The importance of developing and promoting local (or peri-urban) agriculture is thus becoming increasingly clear, and some cities make it a major line of planning policy. Given the lack of access to resources and food, solutions will have to be found or invented for (and by) cities. It must be pointed out, for example, that markets in towns and cities have always contributed to social and economic activity in Mediterranean countries, and these markets where local and fresh products are sold are certainly one of the many instruments that must be mobilised and promoted with a view to meeting urban population’s food needs while promoting local and peri-urban agriculture (Nasr and Padilla, 2004). Cities today are anxious to promote quality food for their inhabitants. This trend is illustrated, for example by initiatives that have been launched in France and Italy to supply school canteens with organic and local products or regional specialities and to promote food that is tasty and more diversified.

Organic meals in Italian school canteens

Developing organic meals in school canteens is a general trend in Italy, where the number of canteens providing such meals rose from 69 to 837 in 2009 and the number of meals provided from 24,000 to over 1 million in 2009 (source: Biobank). The first initiative dates back to 1986 in the municipality of Cesena in the Emilia Romagna region. The term “organic meal” actually covers a wide variety of possibilities, some schools providing lunches entirely composed of organic products, while others provide several organic dishes; the “one organic meal per week” initiative is a further variant. Many regional authorities have embarked on projects with a more general purpose, aiming to raise the awareness of both schoolchildren and their parents. In the municipality of Grosseto, parents are invited to eat with their children, and the Emilia Romagna region has created a portal devoted entirely to the subject; this region is the leader in Italy in terms of the number of canteens providing organic meals, and all of its nursery schools provide organic food.

These results are the fruit of the determination of the local authorities, which have developed arrangements for supplying their municipalities with organic products. In

San Zenone in the Milan hinterland, for instance, when inviting catering firms to tender for contracts the municipal administration has introduced a system of awarding 10 extra points to firms which have a dietary education plan on organic agriculture. A similar system was also introduced in Rome in 1999. Approaches of this nature have also been developed by cities in other countries, particularly in France (Lons-le-Saunier in the Jura mountains being an interesting example).

The role of local authorities in developing and regulating tourism

Tourism is traditionally a sector where there is very little regulation – the initiatives and investments of travel agencies in a given destination having always been regarded as sufficient for coordinating supply and demand without (excessively) affecting society. However, the environmental, social and cultural consequences of tourism development now show that these activities have profoundly affected the Mediterranean societies and ecosystems in which they have become established (UNEP and MAP, 2005). This is an argument for regulation at the local level based both on national policy (as far as policies on transport, holiday benefits, measures to promote foreign investments in tourism, and environmental protection are concerned) and on international coordination measures, since it is in the common interests of the Mediterranean countries to promote the region as a destination given the competition from the other regions of the world.

This type of local regulation that is coordinated by the local public authorities can be a means of ensuring that tourism development is controlled more actively rather than simply endured and that endogenous development is promoted. When local public and private actors jointly coordinate the development of the tourist sector through systems of regional governance this helps to diversify activities more effectively and thus to reduce dependence on tour operators and vulnerability to potential crises. This type of local coordination based on regional public-private governance is one of the objectives pursued by the European Union with its “LIFE” and “LEADER” instruments.

Regional authorities have many policy instruments, and one of the most effective lines of policy for promoting forms of tourism best suited to their environment is land-use planning and the regulation of urban development. In order to optimise revenue and financial benefits for the country, cities can define a specific structure or mission and draw up quality charters. This has been done in France, for example, where the Departmental and Regional Tourism Committees carry out economic monitoring, promotion and marketing tasks (MAEE, DGCID, 2006). In Morocco, Regional Tourist Interest Groupings have been set up to promote and market tourism on a decentralised basis.

Decentralised cooperation with a view to mobilising the competences of the regional authorities

Decentralised cooperation enables local authorities to enter partnerships with foreign authorities involving cooperation between their representatives at the institutional level, between the persons actually involved in regional partnership projects, and between the actors involved at the local level. It can be launched as the result of the political will

of MPs or town councillors or through existing links between populations – involving networks of migrants, for example. In these cooperation partnerships the local authority is not only the principal contractor but also launches initiatives, mobilises efforts, provides funding and can even use its own departments to implement a programme; this means that it can coordinate the efforts of the various actors in the region such as NGOs, training centres, research centres, public bodies, businesses, etc.

The originality of this form of cooperation is that it takes place at the interface between the public sector and civil society and is a means of bringing the two types of actor together so as to mobilise their complimentary approaches and means of action. Various actors are involved. They are municipal or regional departments, associations, sociocultural actors, public services, schools, universities, hospitals, the professional sectors and economic actors, local Chambers of trade and industry, and even businesses.

Cooperation between local authorities has other assets for meeting the development needs of their regions:

- their ability to mobilise civil society, either through formal contacts between bodies and institutions or through connections between individuals, through which the most specific needs of the partner authority can be met precisely.
- Their ability to mobilise financial actors and resources over the long term; this is all the more important in the field of sustainable tourism, where local short-term objectives and expectations and long-term challenges can diverge.
- the transfer of skills on the basis of previous reproducible experience; this can be a two-way transfer: more and more voices are being raised to call for cooperation between local and regional authorities in the North and South that is a partnership producing reciprocal benefits rather than a solidarity scheme.

Over and above the effects targeted in the project itself, international cooperation amongst local and regional authorities helps to promote local intercultural, intergenerational and intersectoral activities by encouraging meetings between politicians, professionals, economic operators, stakeholders in associations, and academics. Actions generally involve a number of functions, cultural events and festivities, which help to strengthen the sense of identity and promote the feeling of belonging to a culture while highlighting a culture's value and at the same time enhancing the reputation of the regional authorities involved and making their reciprocal commitment more visible. Schemes of this nature can thus help to develop consumer awareness and agro-food markets, as is illustrated by the cooperation between some regions in Italy, for example (Regioni Sicilia *et al.*, 2009).

In the Euro-Mediterranean context, relationships between local authorities have been gradually developing since 1995. Capitalising on the results of the Med Urbs programme (1992-1994), a culture of trans-Mediterranean networks rapidly developed involving several initiatives that can be cited in this context: MedCities, the network of Euromed cities (previously the Euromed group of Eurocities), the Standing Committee for the Euro-Mediterranean Partnership of Local and Regional Authorities (COPPEM), the Europe-MENA Urban Network, Arc Latin, the Inter-Mediterranean Commission of

the Conference of Peripheral Maritime Regions (CPMR), and the European network of local authorities for peace in the Middle East (COEPPPO). The case of the Autonomous Communities in Spain illustrates strong ambition at the international level and more specifically at the Mediterranean international level (Santonja Major, 2007).

There is also an Inter-regional Mediterranean Commission within the organisation United Cities and Local Governments (UCLG), which should be mentioned; this is a world organisation of local authorities and their networks, which voices their views and concerns on the international scene (“city diplomacy”). A Euro-Mediterranean Regional and Local Assembly was set up through the work of the Inter-regional Commission in 2009; this consultative body, which is composed of 84 members from the European Union and its 16 Mediterranean partners, focuses on energy, agriculture, tourism and water management.

Developing decentralised cooperation around sustainable tourism

Actions concerning sustainable tourism mirror the objectives and methods of decentralised cooperation (transfer of know-how, consideration of the development of a region as a whole, long-term action, respect of cultures and identities), while providing a basis for mobilising new actors. This is one of the missions that the Italian sustainable tourism agency (AITR) has adopted in the work it has been carrying out for over 20 years to promote responsible tourism by ensuring that the action of all of the actors involved (international cooperation NGO, social tourism associations, services cooperatives, fair trade organisations, etc.) is coordinated. It is surprising, however, to see how few decentralised cooperation projects concern sustainable tourism; the number is increasing, but it is certainly a field which would merit more attention on the part of policymakers. The very moderate number of projects may be explained by the actual status of tourism promotion, which is a secondary goal of cooperation projects aiming to develop local expertise and potential as a measure complementing relations between regional authorities that have already been established. Yet it is perfectly feasible to take measures to introduce tourism development at an earlier stage: the promotion of sustainable tourism then serves as a basis for partnership covering the various components needed for developing the tourist industry (in particular, except in the case of adventure tourism, access to water, sanitation, electricity, and communications), thus providing the region with these services, which will also – indeed primarily – benefit the local population.

Action to preserve and promote regional-speciality products is at the interface of measures to develop local resources through tourism and efforts to support local agricultural production, and it is a lever which the Mediterranean regional authorities do not hesitate to use to develop their regions.

Regional specialities – a lever for local development and a primary tool for cooperation

The *terroir*, or local area, is a determined geographical area where a human community generates and accumulates along its history a set of knowledge and production practices based on a system of interactions between the physical and biological environment and a series of human factors in which the combination of techniques involved carries originality, confers typicality, and generates a reputation for the products originating from this specific geographical area. *Terroir* (or regional-speciality) products are thus linked to their origins through their historical roots and through shared techniques and know-how, and they are often in harmony with the use of local natural resources.

A lever for local development

The Mediterranean region is the cradle of a myriad of these regional specialities, a veritable treasure trove, due not only to the Latin, Greek and Arab cultures which all recognise and value the quality of their traditional food in terms of flavour, colour and impact on health, but also to the rich heritage of its preserved *terroirs*.

For since the Mediterranean regions have been unable to intensify their farming systems with modern technologies due to local constraints (such as a cold or arid climate, poor soil or steep gradients, isolation, and so on), they have often preserved their traditional features, which are the fruit of the specific and age-old interaction of natural resources and know-how of local communities, the only people in a position to benefit from a fragile ecosystem while preserving it at the same time. The local-speciality products that come from these systems are many and varied – such as meats cheeses and other dairy specialties produced by pastoralists from local breeds (camels, sheep and goats), oils (olive oil, argan oil, rose oil, etc.), fruits, spices, and so on.

The identity of these products is also often reflected in their geographical indications, which specify their areas of origin and the reputation associated with those areas, and which can be open to abuse unless they are recognised and protected. In this context, the Mediterranean is also the region where a body of national definitions and rules has been created and developed for recognising and protecting these geographical indications and thus preserving the production systems and heritage associated with them. The first “controlled designation of origin” appeared in France, and the approach then spread around vineyard designations throughout the countries on the northern shores of the Mediterranean followed by the European Union and was finally recognised at the international level (TRIPS Agreement). At that level, the Mediterranean countries seem to be amongst the most dynamic in this field; a large number of geographical indications have been registered there (in France, Italy, Spain and Turkey), and policies to support these measures have been developed and strengthened, particularly in Morocco, Tunisia, Jordan and Lebanon.

With these policies, governments aim not only to boost economic development but also to develop and gain recognition for an agricultural and dietary heritage. For many case studies – conducted mainly in France, Italy and Spain – demonstrate the impact

that the development of these products has on the local economy, showing that local production systems facing globalisation are revived, local agro-food chains are structured and producers organised, and that local cultural and natural resources are preserved.

Synergies between regional speciality products and sustainable tourism

The growth of green, sustainable, alternative or cultural tourism mentioned above is the manifestation of growing interest in experience tourism, the type of tourism which enables consumers to rediscover the identity and authenticity of certain places in connection with the daily lives of their inhabitants. Local-speciality products are at the core of this type of approach, which also necessarily involves the pleasure of eating and tasting and restores a link between the region and its inhabitants.

This link with origins makes the *terroir* product a representative of the area, its landscape and the lifestyle of its inhabitants, at the market and on the table where it is served, and a veritable ambassador abroad. The connection between sustainable tourism and the development of local specialities is the basis of a virtuous circle here – it enhances the value of a destination and thus its attractiveness, and it enhances the satisfaction of the tourists who visit it and who, once they have returned home, communicate that satisfaction and raise the value of the area abroad (Asero and Patti, 2009). It is both necessary for the development of heritage tourism (tourism in search of the authentic, typical products, traditional markets) and catalyses synergies, since the attractiveness of a tourist destination fosters and is fostered by the reputation of a product. Product promotion and tourism service converge at the local level (thematic visits around a *terroir*, direct sales of local specialities, catering) and abroad (loss leaders, word-of-mouth advertising once tourists have returned home). *Terroir* products thus link a local economy with the world economy.

Efforts to mobilise the wealth of the Mediterranean dietary heritage as well as opportunities to develop sustainable tourism in the region can thus result in successful combinations, as is illustrated by the number of projects that have been launched in both North and South. Thematic routes are one of the tools often used in this approach. These sight-seeing routes criss-cross the area connecting various sites, landscapes, production locations and sales points for local specialities; the role they play is both economic (reputation, sales) and social (interaction between the actors in an area and between producers and consumers, inter-cultural exchange).

The Wine Route is a widespread example throughout the world, and on the northern shores of the Mediterranean it is particularly common in the south of France and in Italy; these routes convey the image of quality in a very specific regional setting, and in the case of vineyards that are converting from table wine to quality wine they have supported the upgrading of specific areas through their landscape features and the opportunity they provide to meet the local people. The concept has been widely developed and is no longer the prerogative of the northern countries, as is illustrated by the Olive Route in Syria or the *Terroir* Routes in Morocco.

Decentralised cooperation between the Puglia Region (Italy) and the Idleb Region (Syria) for creating an Olive Route

The objectives of the Italian cooperation project entitled “Technical assistance for improving the quality of olive oil in Syria” included action to promote olive oil or through specific initiatives in the Syrian region of Idleb. The two regions thus undertook to create twin routes – the “Strada del Parco Agrario degli Ulivi Secolari dell’Alto Salento” in Puglia and the “Olive Route” in Idleb.

The project was launched in 2005 within the framework of the LEADER Programme (*Liaison Entre Actions de Développement de l’Economie Rurale* – an EU programme for promoting rural development); it is based on an integrated participatory approach involving in particular the local NGO “Al Adyet”, the Ministry of Agriculture, the Governorate of Idleb and the Ministry of Tourism. The creation of the spatial network around olive oil provides a showcase of the region with a view to economic development based on a multisectoral concept where agriculture is combined with the cultural sphere (events and activities connected with museums), tourism (inns, restaurants, shops, etc.), commercial activities and natural resources. In practical terms, the promotion of the various craft and agro-industrial sectors connected with olive-growing in Syria is based on the distribution of promotional material, the installation of road signs at the beginning of the Route, and the creation of a museum in Idleb. Furthermore, the Syrian Ministry of Agriculture has created and registered an ad hoc label to ensure the recognition, traceability and quality of the *terroir* product in order to protect it against speculation and imitations.

Regional authorities as a key component in “terroir” development

Local authorities can play a key role in the development of local-speciality products through their knowledge of the area, their perceptive understanding of the challenges facing public goods, and their status as intermediaries between local producers and the public authorities in charge of recognition and protection at the national level. There are many examples in the Mediterranean countries illustrating how they have mobilised efforts and promoted the development of local specialities with a view to sustainable development. The process that has been launched in the Souss Massa Drâa region in Morocco can be cited as an example.

Regional authorities often play a role as initiator and catalyst in order to promote the baskets of goods and services available in their regions. Further examples are the *Sud de France* (“South of France”) mark created by the Languedoc-Roussillon Region in 2006 and the competition for professionals for promoting the region’s products for export. “*Terroir* marketing” strategies of this nature are studied and pursued in many local communities in the Mediterranean region and even at the level of the region as a whole, and the advantages of designing Mediterranean labels are currently under debate (Rastoin, 2009; CIHEAM, 2011b).

Given local authorities’ interest in developing the image of their areas and the competencies they have acquired, action to promote local-speciality products combined with measures to develop sustainable tourism could be a primary field of activity for the actors involved in decentralised cooperation in the Mediterranean region.

Several avenues that might be explored

One of the proposals for action suggested in *Mediterra 2008*, the CIHEAM's prospective report, was to seek to improve linkages between tourism and agriculture in the region (CIHEAM, 2008). This recommendation is becoming increasingly relevant as time goes on.

Indeed certain trends that have been presented in this chapter show that virtuous interaction is under way. There is no doubt that regional authorities are key actors for boosting these trends and giving them the prominence they deserve. They can launch and coordinate local initiatives within a context of public and private regional governance – an approach that is essential if economic interests and the management of public and collective goods – including the natural and cultural heritage associated with typical production systems – are to be an integral part of sustainable development. To pursue this avenue it would be interesting to explore two main lines of action highlighted in the present chapter.

Playing the card of local agriculture and the “terroir”

This avenue seems the obvious choice both for offering tourists and consumers in general products that carry value and guarantees as to their quality and the production method used and for guaranteeing farmers profitable markets, which will transform the region (Vandecandelaere *et al.*, 2010). Yet, although this strategy is being pursued more and more in Europe and is developing in the southern and eastern Mediterranean, it is still relatively tentative in the latter regions, where it is encountering considerable difficulties. For the prices of imported products are often lower than the prices of local products, and subsidisation systems are still encouraging supplies from abroad to the detriment of local products and producers. In view of this fact, only voluntarist policies can change things:

- tourism policies which also promote a tourism formula involving more solidarity, which is more expensive but more sustainable and where the meals that local and international tourists are offered comprise products from short food chains and regional specialities of the country (cf. the exemplary “*Conosci il tuo pasto*” initiative in Italy);
- agricultural and rural development policies aiming to facilitate access to urban markets for local producers and to inform consumers more efficiently so that they can make enlightened dietary choices.

As regards information, policymakers in the tourist industry and in the rural world stand to gain from communicating jointly. And the *terroir* conveys positive images, since it expresses a quality vision of tourism. But this is also the card played by food chain operators, who pursue a strategy of differentiated product ranges. There are many examples, including the agreement concluded in 2009 between the association of Black Thibar sheep farmers and the Carrefour hypermarket chain in Tunis with a view to giving the higher-priced local-speciality product visibility on the shelves of its stores – a very positive sign. Furthermore, municipalities must certainly play a role in this food equation. It is essential that urban and peri-urban farming return to the forefront. It

would be interesting, for example, to monitor trends in the medium term in the construction of vertical farms in cities (Despommier, 2010). These high-rise constructions devoted entirely to farming could gradually bring solutions for land-poor countries. The possibility of constructing high-rises in conditions compatible with sustainable urban development would perhaps be a bold strategy for Mediterranean cities. This would be a prospective field of partnership for decentralised cooperation – as strategic as that of promoting solar energies – with a view to supplying urban populations.

Providing local authorities with the means of action for regional integration

The time has come to equip local authorities with the operational means necessary to successful development. As regards policies, far from weakening decision-making at the national level, the decentralisation of power would strengthen its legitimacy and enhance its efficiency. Which means that the regional authorities in the Mediterranean region would not be left behind – on the contrary, they would be in a position to support the necessary developments by proposing points of reference, examples, and forms of support, particularly in the terms of training or decentralised cooperation

This must be the path of the journey towards sustainable development, that is to say, development that is primarily more responsible but also pragmatic. And this is where the future of the Mediterranean can take shape with more reassuring prospects of a brighter future, a future where the keywords will be confidence and solidarity to meet the challenges common to all of the riparian States. The regional and local authorities are at the heart of this vision, proud of the local wealth of their region, convinced of the role they have to play in local development, attentive to the needs of their citizens, and in touch with their counterparts at the national and Mediterranean level. This regional Mediterranean approach is bound to be the basis for strengthening the regionalisation of public policies while contributing to the promotion of the Mediterranean idea (European Commission, 2011), the driving force for the future of both tourism and food for the countries in this region.

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POLICIES AND REGULATIONS IN THE MEDITERRANEAN: COMPLEMENTARITY AND COHERENCE

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The agricultural systems in Europe and in the Mediterranean region are facing various complex economic and social changes. On the one hand, the growing demand for food needs to be satisfied, and on the other, it is necessary to contribute to the growth process and sustainability and to increase the level of competence in environmental performance in agriculture. This is compounded by two relatively complex factors – price volatility and the growing interest in the safety and nutritional aspects of agro-food products.

A converging objective in both developed and less developed countries is to promote public goods by preserving agricultural potential. Moreover, agricultural policy has the ethical commitment to ensure the world population access to food through sustainable production processes and technologies and furthermore to improve the quality and nutritional properties of food at the global level.

Agricultural policies are often designed to try to prevent market failure through corrective mechanisms and measures to contain the effects of low equilibrium in pricing or asymmetric information that are generated by the inefficient allocation of resources and unequal distribution of income along the food chain. Between 2006 and 2008 the price of various commodities started to rise considerably – up to 180% in some cases, such as cereals – while in 2009 dairy product prices fell by 40%. Price variability has negative effects on producers and does not benefit consumers, who therefore lose confidence in suppliers; they also have difficulty in understanding the level of product quality and food safety defined by the market.

Diet and health are also subject to market failures. Farmers and food firms seek to maximise profits, and this can have negative effects on consumers, who are supplied with food that is not wholesome. As a result, citizens have to contend with additional costs for health care and the burden on the national health service is increased.

Many countries facing this situation have started to implement measures, which are also linked to rural development policies, to persuade individuals to adopt a healthy

lifestyle and to encourage firms to offer healthy food at a reasonable price. The aim is to help the public understand the benefits that can be obtained from a healthy diet and high-quality food. A further challenge is to find agricultural solutions for producing local, seasonal, and traditional food, which can have a positive impact on health and promote a correct model of food consumption.

This chapter will outline changes in European and Mediterranean agricultural policy measures aiming to adapt food systems to new challenges. It will focus in particular on quality policy and the nutritional aspects of agro-food products to which various countries are having to devote attention in the new scenarios emerging at both the local and the international level.

Changes in agricultural policy: a shift towards consumers and the environment

Until the 1990s, the objective of agricultural policy at the sectoral level was to keep production costs in line with consumer prices and productivity factors. In the last few years, in order to face structural economic and social changes at the international level and to define a new international and regional balance, all countries have been encouraged to adapt their agricultural systems to new scenarios through more coordinated and coherent governance and agricultural policies. Citizens are more aware of public goods, most of which are environmental – such as agricultural landscapes, farmland biodiversity, water quality, water availability, soil functionality, climate stability (greenhouse gas emissions, carbon storage), air quality, resilience to flooding and fire – in addition to a diverse series of more social public goods, which include food security, rural vitality and farm animal welfare and health.

Agricultural development has been emphasised by developing countries as a fundamental tool in policies to reduce poverty. In some areas measures have been taken to create employment, protect natural resources and reform governance. Programmes such as the Comprehensive Development Framework and the Poverty Reduction Strategy Papers introduced by the World Bank and the IMF are based on the concept that agricultural and rural development are seen to play a vitally important role. The Food and Agriculture Organisation (FAO) developed a Special Programme for Food Security (SPFS) in 1996 aiming to increase sustainable food production and productivity in low-income food-deficit countries in order to ensure food supply and access to food. The programme focused on agricultural development as an important tool for ensuring food and nutrition security in rural areas as well as reducing poverty (Heidhues *et al.*, 2004).

New national and international requirements concerning the protection of consumer health, environmental sustainability, competitiveness and equity in the distribution of value added along the supply chain have thus necessitated changes in the intervention measures applied and strategic goals pursued in agricultural policy. Through the recent reforms of the Common Agricultural Policy (CAP) and with the launch of a new agro-food chain plan for the southern Mediterranean countries, agricultural policies in both regions are now geared to these changes, although socio-economic and structural features vary from one region to another.

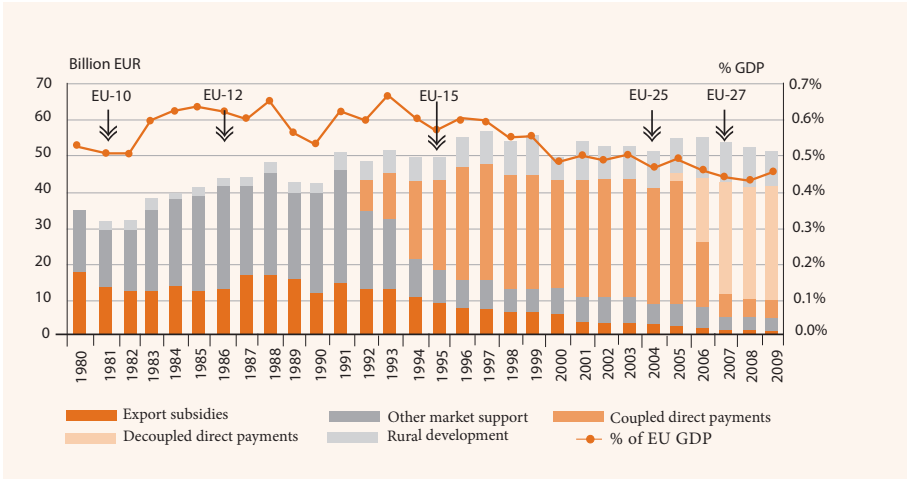
The reform of the Common Agricultural Policy (CAP)

The Treaty of Rome (1957) set out the objectives of the CAP: 1) to increase productivity, 2) to ensure a fair standard of living for the agricultural population, 3) to stabilise markets; 4) to guarantee security of supply; and 5) to provide reasonable prices for consumers. These objectives have been achieved through a pricing and markets policy, which was intended to provide price support for the main products and establish EU trade barriers. However, this policy has generated a series of production surpluses and an increase in EU agricultural expenditure. Although the Treaty of Rome took consumer interests into account, the CAP has always favoured the organisational and quantitative aspects of production. In the 1990s, the EU began to adopt a new policy to reduce the distortions produced by the previous one. Since the MacSharry Reform (1992), measures have been introduced to ensure food safety and quality and to improve sanitary conditions in order to create a new concept of agriculture, which is no longer connected with productivity but is associated with a new approach involving respect for the environment and for commercial standards and equity in international trade.

Through EU Regulation 1782/2003 and the “Health Check” (COM [2007] 722 – November 2007) decoupling became the key instrument in this reform. It provides direct aid (one single farm payment) to offset the reduction of price support. The introduction of these new instruments has brought a balance on markets and has allowed most European price levels to be aligned with world prices; it also entails fewer incentives to create production activities that harm the environment.

The CAP’s interest in consumers is a recent development stemming from food safety issues – the Bovine Spongiform Encephalopathy (BSE) crisis and the various salmonella outbreaks. These concerns have also been focusing on the possible impacts of the CAP on food consumption and the growing problem of overweight and obesity. The CAP has furthermore focused its attention on environmental protection, quality, food safety and animal welfare, the latter strategy having been renewed and improved in 1999 with Agenda 2000.

The initial CAP setup that prevailed until the 1990s was based on domestic price support and was adversely affecting consumers. The prices of agricultural products were higher than world market prices and thus indirectly affected the quantity of food consumed. It can be assumed that agricultural policy is neither directly responsible for changes in dietary patterns nor connected with overweight and obesity issues. Moreover, the effect of the increase in the consumption of milk and meat – products supported by the pricing policy and responsible for diet deterioration – is not directly attributable to the CAP, but to other factors such as cultural and economic change and the distribution system (Schmidhuber, 2009). CAP reform started in 2003, and the alignment of internal prices with international markets meant that prices for European consumers were contained and, as a result, the quantity and quality of food consumption increased. The impact of the 2003 reform, with direct payments shifting to decoupled payments, is highlighted in Chart 1.

Chart 1 - CAP expenditure and CAP reform path (2007 constant prices)

Sources: CAP expenditure – European Commission, DG Agriculture and Rural Development (Financial Reports, 2010).

With these changes in market policies (first pillar), structural and rural development policies are emerging that aim to promote direct intervention in rural areas, to enhance competitiveness and improve quality of life. In this context, rural development policy, which was developed as a branch of the Common Agricultural Policy, has, over time, acquired growing strategic importance in local and regional development policies. This process has been the result of the implementation of Regulation (EC) 1290/2005, which concerned the financing of the CAP and established the European Agricultural Fund for Rural Development (EAFRD), and Regulation (EC) 1698/2005 concerning the general framework in terms of planning, implementation and evaluation, within which the Member States exercise their competence. In the second half of 2006 the European Union shifted towards growing interest in consumer safety and the preservation of environmental and territorial specificity, issuing three implementing Regulations and strategic guidelines for the second pillar of the CAP.

Regulation (EC) 169/2006 outlines the three objectives of Community support for rural development policies:

- to improve the competitiveness of agriculture and forestry;
- to enhance the environment and countryside through land management;
- to improve the quality of life in rural areas and encourage diversification of economic activities.

Through these guidelines, the importance of agriculture as manager and provider of public goods has been recognised. However, despite the changes in the orientation of agricultural policy, achievements in the EU regarding income distribution amongst farmers and rural areas, the effectiveness of efforts in rural development and environmental protection and the results with regard to food safety are not always clear

and consistent. In this context we must underline that since Mediterranean EU regions are more vulnerable to the impacts of climate change, such as drought, fires and desertification, greater efforts will be required on the part of farmers in these areas to adapt their activities to the changing environment.

Overview of the agricultural policies of the Mediterranean countries

The agricultural policy guidelines implemented in the southern Mediterranean countries can be summarised in three major categories:

- modernisation of production facilities and improvement of agricultural performance and rural infrastructures, particularly in the field of irrigation;
- food safety and the preservation of consumer purchasing power;
- enhancement of the competitiveness of the agro-food export market, where there is a comparative advantage, by devoting greater attention to quality.

The reforms undertaken by the various countries are mainly characterised by a process of State withdrawal and liberalisation of private initiative. With the resulting acceleration of economies and markets these countries are now opening up more to the outside world. The development strategies adopted are structured around the following tasks:

- solving structural problems and optimising the use of production factors;
- resolving irrigation issues – caused by drought and irregular rainfall – in order to improve the performance of agriculture;
- strengthening support services to agriculture such as research, dissemination and training;
- adjustment to international and domestic commitments undertaken in the World Trade Organisation (WTO) guidelines concerning price support and sanitary and phytosanitary (SPS) measures.

With regard to the latter point, the fundamental question for most southern Mediterranean countries regarding trade liberalisation is this: what could be the balance between the commitment to enhance the competitiveness of export production and to development policies, and measures to protect domestic production in order to meet domestic demand more effectively?

The policies of the 1980s such as tariff protection, the absence of competitive pressures, pricing policies, lack of taxation, but also the inadequacy of research, have hindered technological competitiveness in these countries (Toumi, 2008). Furthermore, as regards the changes in food and nutrition models in the southern Mediterranean countries, as in most developing countries, the effect of the changes in diet is much greater when government policy is geared to keeping price levels aligned with international markets and the distribution chain is expanding with reduced profit margins. The standardisation of the dietary pattern and the homogenisation of food consumption is most evident in countries that are more exposed to the market internationalisation process.

In fact, in the new globalisation context, Mediterranean agricultural products are exposed to increasing competition, and the consumption of traditional products is decreasing in the urban environment as the result of changing needs; furthermore, product supplies conform to the international market (CIHEAM, 2008). However, in order to face the new millennium challenges some of the southern Mediterranean countries have adopted new forms of intervention concerning environmental sustainability, land conservation, rural development and improvement of the food model in order to protect public health:

- In Morocco, the “Green Plan”, a modernisation programme, has been underway since 2008. It aims to make agriculture the main engine of economic growth in the country, with advantages in terms of GDP growth, job creation, exports and poverty reduction. Its principle objectives are to modernise agriculture, boost productivity, increase value added and introduce support measures for small producers (Toumi, 2008);
- In Tunisia, the 11th Plan for economic and social development (2007-2011) defines the main objectives of Tunisian agriculture. These include the sustainable management of natural resources, efforts to seek solutions to environmental issues, measures to support exports, and support for family farmers through rural development projects;
- In Algeria, rural development policies are part of a broader project, the “Sustainable Rural Development Strategy 2004-2014”, which proposes a series of development activities, assessing the financial aspects for the various partners and considering their impact on job creation (Ministère de l’Agriculture et du Développement Rural (MADR), 2004).

As the CIHEAM has mentioned (2010), the governments of southern Mediterranean countries are applying food policy measures to preserve food security and to promote nutrition, food safety and health. For example, Morocco has adopted a programme to improve the living standards of the most needy, which includes schemes involving work in the public interest (food in return for work) and direct food transfers. Algeria has opted for income aid, adopting and launching the “social safety net” scheme in 1991. The idea of a social action plan has been put forward in Egypt, although it has not yet been put into effect. In 2006, governments launched a warning against bird flu in order to preserve food safety, and, in Tunisia, a dietary and nutritional monitoring system has been in operation since 2006, which, with the collaboration of European partners, provides the basis for monitoring the evolution of nutritional problems as well as the impact of the strategies pursued so that they can be adjusted where necessary (CIHEAM, 2010).

The quality policy of the EU and the Southern Mediterranean countries

Many countries have recently made considerable changes in regulations on food safety and food quality, the aim being to improve quality standards in order to ensure food safety and food supply and to increase the competitiveness of food products on both the domestic and the export market. The quality concept has both a private and a public value: it provides consumers with a wider choice of products (product differentiation), and it is a legal instrument designed to protect consumer health through correct information on food products.

The word “quality” has a wide range of meanings in this context, including the following:

- organoleptic characteristics: what food and drink do for the senses – mainly in terms of taste;
- nutritional value and other health benefits (beyond being basically safe);
- specific production methods, such as integrated production;
- use of particular ingredients;
- origin;
- the circumstances with regard to the physical environment.

The relative importance and enhancement of the quality concept in the agro-food industry depends mainly on the socio-economic conditions prevailing in a given country. In the countries on the northern shores of the Mediterranean, commitment to food policy mainly concerns defining rules on quality standards for food-processing firms and improving the monitoring system for protecting consumer health. Consumer behaviour is characterised by the demand for diversified food products and great attention to food quality aspects. This affects interrelationships at the various stages in the food system. In the southern Mediterranean countries, the food quality and food safety concepts are secondary. The main concern is food security, and agriculture policies are directed mainly to the quantitative aspect and to farm modernisation.

EU Quality policy

The EU has been issuing extensive legislative provisions on food safety and food quality since the 1990s in order to reduce the risk of information asymmetry by establishing regulations on trademarks, designations of origin and food certification.

Quality policy stages in the EU

1992: EU published Regulations on Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) (Regulation [EEC] 2081/92), on Traditional Specialty Guaranteed (TSG) (Regulation [EEC] 2082/92), and on organic and low environmental impact (integrated) production (Regulation [EEC] 2078/92).

2000: With its White Paper on Food Safety, the European Commission made a proposal on food reform, underlining the need to establish an independent body that guarantees food safety.

2002: Through Regulation (EC) 178/02 the European Parliament and the Council redrafted the general requirements and principles on food safety legislation and established the European Food Safety Authority (EFSA).

2003: The Fischler reform introduced measures to promote: the adoption of national quality labelling, the introduction of “coupled” payments to protect the environment and to improve quality and commercialisation (Article 69), new support measures for farmers who have switched from generic production to certified quality production, and support for information and food quality promotion initiatives.

2004: The Commission published Regulations (EC) 852/04, 853/04, 854/04, and 882/04 on food and animal origin product hygiene and on official hygiene controls of animal origin products for human consumption. These regulations constitute the so-called “hygiene package”.

2008: The European Commission published its “Green Paper on agricultural product quality: product standards, farming, views and quality schemes”. It is divided into three sections: 1) baseline production requirements and marketing standards; 2) specific EU quality schemes such as geographical indications; 3) food quality certification schemes.

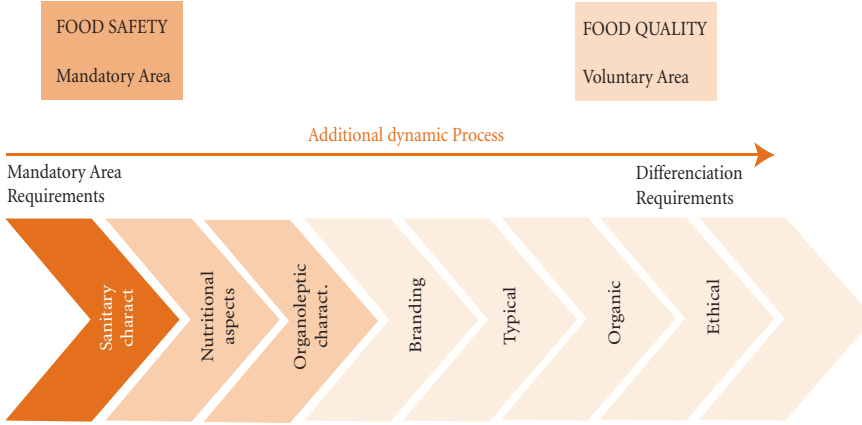
At the end of 2010, the European Commission published a proposal for a new quality package: “The Quality Package” (UE COM (2010) 733 of 10 December 2010). This Package aims to improve EU legislation on quality as well as on the operation of national and private certification schemes, in order to make them simpler, more transparent and easier to understand, adaptable to innovation, and less onerous for producers and administrations.

In the White Paper on Food Safety (2000), the Commission launched a series of actions to modernise legislation, tighten up company controls “from farm to fork”, raise the level of scientific research and ensure a higher level of health and consumer protection. In order to achieve this, the European Food Safety Authority was established as an instrument for creating a network for cooperation amongst the institutions of Member States. Traceability, the health mark, the Hazard Analysis Critical Control Point (HACCP) and labelling have become essential tools for ensuring a minimum level of health and food hygiene. Traceability is one of the most innovative elements, enabling food to be traced throughout all of the stages of production “from cradle to grave”. It does not guarantee food safety, but it makes it possible to withdraw unsafe products or those not complying with food legislation from the market. It is also a tool for containing the risk of contamination (e.g. mad cow disease, bird flu, etc.). Protected designations of origin and protected geographical indications are another way to guarantee products by providing specific information about the nature and reputation of products made in a particular region or by traditional methods. Figure 1 synthesises the quality concept and production process, showing the dynamic from mandatory to voluntary requirements.

The regulation for protecting the names of products whose specific character is determined by their geographical origin (Protected Designations of Origin or “PDOs”, and Protected Geographical Indications or “PGIs”) was designed so that this kind of product can live up to consumer expectations in two ways. First, because many such products have exceptional qualities of flavour, aroma, etc., and, secondly, because the local methods used to produce them create a bond of trust between the consumer, the product, the place of origin and the people living there who develop it. The two types of Geographical Indications (GI) indicate different degrees of connection with a geographical area.

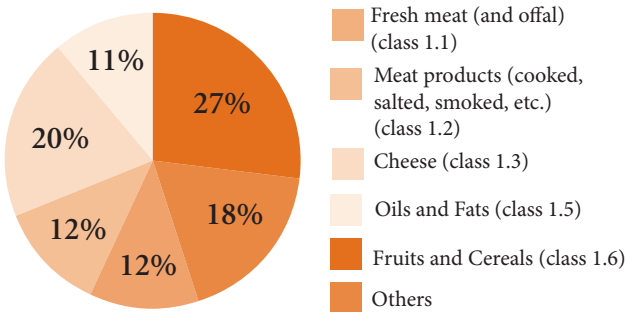
The “typicality” of a product is a differentiation characteristic deriving from a complex synthesis of environmental, historical/ethnic, cultural, social, technological, and economic factors relating to a territorial specification. PDOs and PGIs are worth protecting not only because of their connection with quality, tradition and reputation,

Figure 1 - The dynamic quality concept



but also because they make a valuable contribution to sustainable rural development. Several studies (MAAPAR, 2003; Van der Ploeg, 2002; Folkesson, 2005) have shown that they have an important role to play in the regeneration of the countryside, since they ensure that agro-foodstuffs are produced in a way that conserves local plant varieties, rewards local people, supports rural diversity and social cohesion, and promotes new employment opportunities in production, processing and other related services. The needs of the population of today are met, while natural resources and traditional skills are safeguarded for generations to come. These certifications play a key role as regards socio-economic aspects, international notoriety and “typicality” of products. Chart 2 shows the percentage of PDO/PGIs in the EU per product (sector).

Chart 2 - PDO/PGI registration in EU (June 2011, 998 products)



Source: our elaboration of EU data updated in June 2011.

Furthermore, in addition to mandatory rules such as regulations and directives, which are meant to ensure minimum quality standards, the EU provides a set of voluntary quality standards. These are based on labelling compliance in order to develop good international agricultural guidelines. They certify that a food product complies with a

specific norm or regulation. In particular, standards required by private agents (retailers, large agro-food companies, etc.) in developed countries have been implemented, especially in the context of buyer-supplier relationships; examples are GlobalGAP (Global-retailer Produce Working Group-Good Agricultural Practice), IFS (International Food Standard), GFSI (Global Food Safety Initiative), and NQS (Nestlé Quality System). These standards impose strict requirements concerning infrastructures, equipment, and production practices: they are primarily obligations of “means” and are often more stringent than public norms. Furthermore, a series of norms, quality assurance schemes and quality management systems with third-party certification (HACCP, ISO, etc.), has developed as a de facto constraint in international trade (Fulponi *et al.*, 2006). In general, compliance with norms and standards implies both variable and fixed costs, and thus considerably increases export costs for producers/exporters who want to comply. Furthermore, the heterogeneity of norms and standards amongst industrialised countries entails additional costs for producers or companies that want to diversify export markets.

Quality policy in southern Mediterranean countries

The southern Mediterranean countries are beginning to implement a new process to improve quality systems in order to maintain a business dialogue with the EU, even though it is not yet widespread practice. In fact, the implementation of procedures and mechanisms for improving quality require major investments, specific technological skills and efficient market coordination – tools that most of these countries are unable to acquire rapidly. Quality systems depend basically on consumer purchasing power, which is related to per-capita income and consumer spending habits. However, the distinction made in these Mediterranean countries between food products for the domestic market and those intended for export must be underlined. Export products are subject to higher quality standards and stricter certification mechanisms and are highly focused on minimum health and quality standards in order to reach EU markets and to gain public acclaim.

The case of Algeria

Certification is quite a recent phenomenon for Algerian agro-food firms: in the period from 2000 to 2006, only 18 firms were certified. There are several constraints which compound the difficulties involved in the compliance process and, more generally, prevent firms from attending to quality issues. Examples are:

- inadequate technologies: investments are required to upgrade production and marketing and to authorise private laboratories to evaluate and issue compliance certificates. Further investments are also needed for consulting, auditing and certification;
- lack of knowledge, know-how and training. Agro-food firms often suffer from a lack of qualified employees, especially where quality and management are concerned. This problem also concerns monitoring organisations, which lack staff and trained employees. Control institutions seem to be unable to address food quality issues properly, and this has disastrous effects on health, production, marketing and competition;
- corporate size and investment capacity. Although there are several large agro-food companies, Algerian agro-food markets are dominated by small and medium-sized enterprises.

The difference between fresh products, such as fruit and vegetables, and processed products is important. Fresh products face more difficulties due to deterioration; they require more storage, packaging and transport facilities, which are often lacking in the southern Mediterranean countries. In fact, products are more perishable due to the lack of facilities in harbour areas, the conditions of the road network in goods transport, the small size of farms, the lack of a public form of product organisation and marketing, and the deficiency of equipment for ensuring the cold chain.

Marketing requirements are increasingly obliging operators to take new activities or services such as logistics, certification, traceability, and quality monitoring into consideration at various stages of the supply chain. These operations require an organised system which follows a quality plan and includes specific monitoring procedures. Southern Mediterranean countries often do not have adequate and efficient production facilities for meeting the market requirements concerning quality improvement and for managing fresh products throughout the supply chain.

The case of Tunisia

Tunisia was the first Mediterranean country to sign the Euro-Mediterranean association agreement with the European Union in 1995, which stated the following: “The parties shall take appropriate measures to promote the adoption of technical regulations and European standards for industrial products and agri-food and certification procedures” (Ministry of Economic Development, 2008).

The dismantling of tariff barriers that began in 1996 has accelerated the country’s integration into the European market dynamic. Product quality improvement and quality assurance schemes have become key elements of producer/retailer strategies to increase international competitiveness (Laajimi *et al.*, 2007).

In the standardisation field, the “National Institute for Standardisation and Industrial Property” (INNORPI) was created in 1992. The “Tunisian Accreditation Council” (TUNAC) manages the Tunisian accreditation system of quality control laboratories. The administrative control of quality is assigned to the Directorate-General for competition and domestic trade.

The new quality policy marked its entry into the Tunisian system in 2002 with an integrated and global vision of quality. The second plan envisages the implementation of a quality management system involving all business functions, taking the example of European partners to ensure that every firm adopts such a system. Mutual certification plans are largely based on these procedures, which are well-known and shared (ISO 9000) (Ministry of Economic Development, 2008).

Based on these premises, a special programme has been implemented which aims to improve competitiveness and implement policies for modernising the industrial sector; it is the Programme de Mise à Niveau (PMN), whose main objectives are to promote quality, to support investments geared to increasing productivity and modernising firms, and to upgrade laboratory infrastructures and raise firms’ awareness of quality and safety issues and methods.

Many Mediterranean partners have recently started to improve quality and food safety standards by creating specific organisations and public institutions, which have jurisdiction on agricultural and food quality standards at both the local and the international level. Institutional delays in the development of controls and certification

procedures are still frequent due to the overlapping of roles between the different bodies and limited financial resources for encouraging innovation and investment.

The success of organic products has been widespread, however, as regards southern Mediterranean countries' exports. The organic sector is developing throughout the region with an increase in the percentage of the total area under organic crops in countries such as Tunisia (6%), Morocco (5%), Turkey (5%) and Egypt (1%) and, more recently, in Algeria, Lebanon and Syria. The organic products from these countries are highly specialised: argan oil, seasonings and aromatic plants from Morocco, olive oil from Tunisia and dates from Algeria. Whereas in Egypt the products are intended in part for the internal market (40% of production), producers and consumers in the Maghreb countries gear production to foreign markets. The existing regulations comply with the norms and standards of the International Federation of Organic Agriculture Movements (IFOAM) and the European Union (ISMEA and MAIB, 2008). Currently, the certification activities in most southern Mediterranean countries are regulated by European organisations due to the absence of national control programmes for sharing standards and procedures for developing the organic product market. Although the majority of these countries have implemented the international certification guidelines, only a limited number of exporting companies are ISO-certified.

The case of Turkey

As illustrated by Selma Tozanlı and Fatima El Hadad-Gauthier (2007), Turkey has assigned the control of the key global value chains to local public organisations. In 2004 the Ministry of Agriculture and Rural Affairs issued new regulations on good agricultural practices and forced fruit and vegetable producers to comply with the GlobalGap standard (for example, mandatory record-keeping of the quantities of fertilisers, pesticides and insecticide used). These changes aim to harmonise the Turkish agricultural system and agricultural structures in order to meet EU requirements. The authors identify several types of governance. The degree of concentration is not high and the majority of exporting firms have been created recently. About 50% of exports are effected by actors which are coordinated in networks and belong to modular chains. About one-third of exporting firms belong to this category and have direct and well-established relationships with producers. In the event of additional demand, these firms obtain their supplies from commercial agents. Most of them have well-established long-term relationships with importers. More than one-third of Turkish exporting firms work exclusively through agents that collect the required volumes from a large number of small producers. The majority have carried out downstream integration: their storage and cooling capacities are quite large, and more than three-quarters of them have their own product packaging systems.

In conclusion, the major issues relating to quality systems that have emerged in the southern Mediterranean countries are: 1) the low level of vertical coordination between the various actors involved in the supply chain, 2) partial tracking systems, due to the high number of operators in the production chain and 3) the lack of technologies and of a functional infrastructure system. Taken as a whole, quality and safety systems in the EU and in the southern Mediterranean countries should be considered not only as a differentiating factor, but also as a necessary condition for maintaining activities on the market and increasing international competitiveness. Furthermore, the export sector must assure sustainability and development in compliance with international regulations.

Quality regulation and market access

National and international food safety standards are generally becoming more stringent in response to growing concern over health risks associated with food products. The international regulatory environment consists of both upstream and downstream minimum quality standards relating to agricultural or processing practices and the attributes of final products, for example, the maximum level of contaminants in agro-food products. The proliferation of both public and private food safety and quality standards has radically changed both production practices and the organisation of the food supply chain.

The legitimacy of public regulation of food quality and safety relies on the correction of market failures (asymmetric information, quality attributes unverifiable by the consumer, product consumption externalities which reveal that products do not meet the quality/security standards, etc.). The consumption of products that do not match the expected level of quality can increase consumer costs (loss of time and income, adverse effects on health, etc.) and, in some cases, can create negative effects for society as a whole (health risk, health service costs) (Grazia *et al.*, 2009). Growing attention has been devoted to the impact of sanitary and phytosanitary (SPS) regulations and standards, as well as public quality regulations and private standards on agricultural trade and the agro-food trade. As regards the effects of food safety regulations on developing countries' export performance, there seem to be contradictory theories. On the one hand, compliance with standards can ensure more efficient supply chain organisation and improvement of market performance by increasing market transparency and efficiency and reducing transaction costs (Jongwanich, 2009), as well as increasing export specialisation in high-value products (World Bank, 2005; Jaffee and Henson, 2004). On the other hand, the negative effects of standards on developing countries' export performance are well recognised in the literature. Although, in principle, the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) ensures that SPS measures are not applied "in a manner which would constitute a disguised restriction on international trade", in practice, SPS regulations can significantly restrict exports from developing countries (Wiig and Kolstad, 2005; Henson, 2006).

Individual businesses' compliance with quality standards is a long-term process, entailing costs that can be relatively high and have an impact on producers' incomes. The process of adaptation to standards entails a significant burden, especially for small businesses in less developed countries, due to the large investments needed. The exclusion of upstream producers, however, also depends on the strategic behaviour of downstream operators and, in particular, on their interest in supporting the adaptation process (Henson, 2006).

A number of studies illustrate that national systems and institutions connected with quality issues often suffer from weaknesses that make them ineffective and unfit for ensuring the safety of food products. Many kinds of weaknesses have been identified: weaknesses in national control systems for agro-food products, basic infrastructures, national quality and food safety policies, poor inspection services, lack of laboratories, weaknesses in information systems, inadequate monitoring of food-borne diseases, and

lack of scientific and technical skills. These deficiencies increase the compliance costs of private agents. As a result, at least some of these barriers need to be removed in order to reinforce compliance capacities and increase incentives for private agents to engage in these initiatives. Among the factors that need to be upgraded, corporate access to information is certainly one of the most important, especially information about food safety and quality standards and the norms required by the European market. Another issue concerns the possibility of obtaining certification at the local level. Indeed, for several developing countries, certification of compliance with either public norms or private standards required by importers is only delivered by foreign certification bodies, thus considerably increasing certification costs. Costs can be reduced and firms' access to the international market can be facilitated if certification is delivered by bodies operating at the local level (Emlinger *et al.*, 2008; Michalek, 2005; Aloui and Kenny, 2005). The structural inefficiencies of developing countries can exacerbate difficulties in complying with quality standards and SPS measures (UNIDO, 2005).

The overall decrease in the trade flows of developing countries can be explained by the actions taken by the food safety authorities of importing countries, notably by rejections at developed countries' borders. A "border rejection notification" concerns refusal of a food or feed import for reasons of health risks. The risk of border rejection is determined endogenously by: 1) the stringency of food safety and quality requirements of importing countries, which determine the level of compliance costs for producers and exporters; 2) the stringency of control systems at importing countries' borders (frequency of inspection, types of control, equipment at designated border inspection posts, etc.); 3) the organisation of the export supply chain and the strategic behaviour of supply chain participants (Hammoudi *et al.*, 2010). Border rejections have significant effects both at microeconomic and macroeconomic level. First, they can have a direct impact on private agents' profits and affect the performance of the export supply chain. In particular, costs associated with border rejections (loss of product value, transport costs, re-export or destruction costs) can be relatively high at the microeconomic level, even if they are not high at the country level. Secondly, border rejections can have a long-term effect on a country's reputation, which in turn affects the individual reputation of producers and/or exporters as well as their positioning on the international market.

The Mediterranean zone is one of the EU's leading fruit and vegetable suppliers, and preferential trade agreements between EU and Mediterranean countries have a positive impact on fruit and vegetable exports from Mediterranean countries to the EU (Martí-Selva and Álvarez-Coque, 2007) leading to an increase in the Mediterranean countries' share of the European market over time. In spite of these factors, difficulties in accessing the European market persist for these countries. Namely, it is a well-known fact that trade costs, other than transport costs and tariffs, significantly hinder exports (see for example Emlinger *et al.*, 2008; Michalek, 2005; Aloui and Kenny, 2005); this is particularly the case with highly restrictive non-tariff measures, labelling/marketing standards and SPS measures. The proliferation and heterogeneity of food safety and quality standards at the international level, information asymmetries, and high compliance costs can *in fine* compromise the trade liberalisation process.

Complementarities and coherence of agricultural policy

Several factors have caused significant distortion in market functioning resulting in difficulties or ineffective decisions in agricultural policies. These factors are instability on international markets, alternative uses of land in food and non-food production, population growth and economic development in some emerging countries, and climate changes affecting agro-food and rural activities. In addition, rural areas differ in terms of social and economic development, and farms and rural activities can acquire new functions. For example, besides the production functions involved in farming, new activities such as handicrafts and tourism can be introduced in order to meet the social, cultural and environmental needs of the population.

The current agricultural policy guidelines thus have certain limitations and incoherencies when faced with the new challenges that lie ahead. The trend is to move towards multi-sectoral forms of intervention and coordination with other types of economic and social policy to provide an effective and coherent response to national and international needs. The links between agricultural policy and food policy and between agricultural policy and health policy are becoming increasingly close and interdependent both in the EU and in the southern Mediterranean countries. The public authorities' interest in these developments stems from the increase in health costs that is attributable to dietary causes. Consumers' food choices are complex, and it is difficult and costly to devise effective policies to induce them to change their attitude. Policy-makers must therefore adopt an integrated approach and ensure that the incentives that are offered to small farmers, to the processing industry, and to retailers and caterers are consistent, the control system uniform and consumers properly informed.

Consumer food choices in any one country depend on a number of factors: individual attitude, responsible action on the part of producers, distribution and food processing, social marketing, advertising, the individual's mental state, and collective behaviour. In this context, it becomes important to introduce coordinated food policies which trigger an effective series of actions to improve quality of life as well as the relationships that govern the entire supply chain. It is difficult to influence the consumption of certain foods without coordinated and consistent action on a number of factors, such as a more efficient regulating mechanism in the distribution system, a system of incentives for farmers and food industries, and the application of tools to inform consumers on how to change their eating habits.

As we have seen, given the existing economic and structural conditions in the southern Mediterranean countries, agricultural and food policies in the region are less oriented towards quality and health and more towards quantities of agricultural products. However, the Mediterranean countries on both shores need to find synergies in the protection and defence of agricultural production systems for the well-being of both consumers and producers.

One issue that is problematical in the agricultural policy of both the EU and the southern Mediterranean countries is that of quality and food safety. The development of quality

systems, understanding of the laws in both EU and Mediterranean countries, and effective control mechanisms and quality organisations are the basic prerequisites for enhancing the competitiveness of Mediterranean food production markets on the international markets. These elements will also guarantee a model of sustainable and healthy diet in economic, nutritional and environmental terms. The current increasing standardisation of food, which is geared to creating more efficient and functional food production, distribution and preparation, plays an important role in providing solutions for easy access to food, but this is often to the detriment of proper nutritional balance and environmental sustainability. In addition, in this scenario, “local” identity and genuine products are liable to be lost, and in this context Geographical Indication seems to be the only type of label on the EU food market that can still offer consumers a guarantee. However, these modes of production are not always recognised by the laws and regulations of third countries. Coordinated and complementary action amongst Mediterranean countries to recognise and implement common rules for identifying typical food products would be one factor for improving Mediterranean production and territorial competitiveness. This would support the Mediterranean identity of food products on the international market and promote their cultural and nutritional content.

The development of organic farming is already a complementary factor in agricultural policies on the northern and southern shores due to favourable natural conditions and production areas. Organic farming arose from the need to satisfy an increasingly demanding and sophisticated market and to protect consumers from polluted and contaminated products by distinguishing organic agricultural production from conventional techniques; it has found a broad consensus and continues to grow, especially in developed countries. The sales of organic products vary from one country to another; although relatively small when measured on a per capita basis, they have nevertheless increased substantially. It is important to emphasise that the annual growth rate of world sales was about 15%-20% in the period from 2003 to 2008 (ISMEA and MAIB, 2008).

Organic farming is an activity system, rather than a production technique, not only geared to the market, through product labelling, but consisting of a set of practices that help to conserve natural resources, preserve biodiversity and support sustainable local ecosystems. The development of organic systems based on clearly defined rules and standards could reduce structural and economic differences as well as the differences in trade relations between countries and could unite agribusiness on both shores of the Mediterranean in a common path of growth and development.

The liberalisation of the food products market, an inevitable process in the European and international scenario, is subject to distortions and inequities unless it is regulated and monitored effectively. This process should thus be accompanied by a policy that strikes a balance between total protection and complete absence of regulation. In the current situation, the market cannot be left to regulate itself, given the close connection between agriculture and public goods such as food, environment and territory; this would create adverse effects not only for the agro-food sector but for the economy as a whole with an impact on corporate profitability, territorial protection and public health. The elimination of the quota system in the milk production sector is an example that could arise from the new CAP. Although, on the one hand, this system has certainly created

excessive management costs and market distortions both in quantity and in prices, on the other hand, it has protected markets and producer incomes from price volatility. This obviously does not mean that the system should be maintained, but the market should be supervised and monitored during the process of dismantling the production quota system. In the southern Mediterranean countries, market liberalisation needs to be carefully monitored and regulated. In these countries, where the production system is fragile and natural resources are scarce, liberalisation can lead to serious distortions between domestic and foreign markets and also to a decline in natural resources such as land and water, with the result that small traditional firms are marginalised (Femise, 2003). Moreover, in the creation of free trade in the Mediterranean, the prerequisite is that competition between goods and services is based on the ability of enterprises to compete within a framework of shared and equal rules. A Mediterranean certification value may prove to be an initial factor in the application of common safety and food quality standards.

It must be borne in mind that in the current context there is a growing shortage of agricultural products and foodstuffs. Coordination and consultation on agricultural policy between countries, and in particular between the EU and the Mediterranean countries, thus is not only desirable but essential in order to ensure a balance between supply and demand. Indeed, the concern for food safety poses worrying new scenarios in which new agricultural policy approaches are required with a view to ensuring long-term food security for the European and Mediterranean population and to meet the global demand for food products. According to the FAO, global food demand will have increased by 70% by 2050. In this context, it is imperative that the agricultural sector maintain and strengthen its production capacity through research and modernisation facilities, that international trade commitments be met and that coherence be maintained in development and environmental sustainability policies. These policies must be combined and coordinated with other countries, such as those in the euro-Mediterranean area, in order to define a range of agreed actions for preventing and managing critical situations on agricultural markets.

Conclusion

National and international agricultural policy plays a key role in defining the guidelines for the quantitative and qualitative development of a balanced and sustainable food production system. These guidelines are more coherent and effective if integrated with other policies, not only in production sectors, but also in a strategic and integrated framework comprising nutritional, environmental and commercial aspects.

The development of a certain production system, and consequently a particular food model, determines an impact on the health of the public and also has repercussions on environmental variables. Different food categories can be evaluated by their environmental impact on the community, which is determined by greenhouse gas emissions (carbon footprint), use of water resources (water footprint) and land use (ecological footprint). Ways and means must be found of integrating agricultural policy measures and quality and food safety regulations with environment, communication, trade and nutrition policies in order to converge towards a common objective of socio-economic growth in equilibrium with consumer health and with the environment.

Recent international socio-economic and structural changes show a trend towards greater convergence and complementarity between the EU and the southern Mediterranean countries in the definition of agricultural policies, despite socio-economic and structural differences. In the food and agricultural policies of the northern Mediterranean countries various legislative measures have been defined to ensure high levels of health security and consumer protection and to promote nutritional aspects through the enhancement of local and traditional production methods. In the southern Mediterranean countries, policies to protect Mediterranean products and to promote traditional products are not well implemented, nor do they devote significant attention to the nutritional aspects of diet. Trade policy in these countries is geared to improving quality standards for products intended for the export market in order to ensure greater market access. A shared and common agricultural policy for Mediterranean countries is therefore of fundamental importance and must address the following issues:

- the development of compensation and mitigation policies in natural resources management to guarantee farmers' incomes and accompany the trade liberalisation process;
- the identification of joint action in the Mediterranean region to improve information and awareness of the connection between diet and health and to promote the nutritional and environmental aspects of Mediterranean agricultural production in connection with the Mediterranean dietary model. Access to food must be complemented with access to health services, education, salubrious environments, and safe water sources, amongst other resources, in order to achieve nutrition security;
- the promotion of access to quality-assured and balanced food. Public intervention should strengthen control systems and implement strategies to rationalise the consumption of certain strategic products through pricing and taxation policies;
- support for the development of contractual and concentrated forms of agricultural supply with greater involvement of farmers through producer organisations with a view to enhancing bargaining power, achieving greater price stability and ensuring that value added is distributed more equitably throughout the production chain. Agricultural market reform can improve the food security of poor consumers by improving the private production, distribution, and processing of the type of foods they consume;
- the improvement of management and monitoring policies for food safety in order to ensure food of sufficient diversity and safety to promote good health;
- the development of pilot partnerships between Mediterranean manufacturing and trading companies to enhance market penetration and competitiveness throughout the production calendar and across the product range;
- action to share and strengthen policies for improving quality and differentiating Mediterranean agricultural products in order to identify and enhance the Mediterranean food product chain, in which, through measures to improve organic farming and expand geographical indications, tradition and origin can play a key role in

creating value added and protecting typical traditional products on the international market;

- measures to encourage greater interest in rural development policies, which can improve the potential of a rural system by integrating various local economic activities. Rural development policy could be the tool applied to common and converging operational approaches to enhance the image of the Mediterranean and of typical local products and at the same time protect the agricultural ecosystem and the landscape.

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THE MEDITERRANEAN DIET, INTANGIBLE CULTURAL HERITAGE OF HUMANITY

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This chapter addresses the Mediterranean Diet as cultural heritage from the perspective of three complementary analyses. The first presents the process that made the nomination possible within the framework of the Convention for the Safeguarding of the Intangible Cultural Heritage of UNESCO, and revisits the main landmarks of an intense journey in political, technical and social terms, highlighting the motivations that drove this process forward and that remain firm justifications to continue the collaboration between nations that gave rise to the nomination. The second analysis addresses the area of cultural heritage, its roots, its evolution in recent times and the new framework for the Convention for Safeguarding the Intangible Cultural Heritage of UNESCO, wherein the Mediterranean Diet is inscribed today. The third analysis focuses on the future prospects that will arise from the inscription. These prospects are marked by the structure and the operational guidelines of the Convention and inspired by all the new imaginative potential conferred by the recognition obtained. The Mediterranean Diet is a great asset of the Mediterranean people but we are all aware – particularly in the present situation – of how volatile these assets may become when use and abuse are confused. The Mediterranean Diet is an important resource, however in recent decades we have all discovered how fragile resources can be when they are used or administered unsustainably. The great strength of the Mediterranean Diet lies in its enormous qualities and appeal as a whole, whether tangible or intangible. Just as much effort should be invested in enjoying them appropriately as in not succumbing to them.

The nomination process

Mid-afternoon on 16 November 2010, at the Kenyatta International Conference Centre of Nairobi, during the V Session of the Intergovernmental Committee of the Safeguarding of Intangible Cultural Heritage, the following statement was heard: “the Mediterranean Diet has been inscribed in the Representative List of Intangible Cultural Heritage of Humanity”. This corresponded to the third and final point of Decision 5.COM 6.41 of the Committee.

This was the culmination of a transnational institutional effort that had commenced in 2004 and began to take form in 2007. It was formalised in 2008 and was nurtured right up to 2010. The future that appeared on the horizon was full of hope, but also demanded great commitment and perseverance. An invitation was extended to all other Mediterranean States to widen the scope of the nomination¹.

Six years and a day: an intense occasion

The culmination of this institutional process was fruit of the seed that had been sown in civil society, in 2004 – one year after the approval of the Convention² and two years before it came into force – in the Mediterranean Diet Foundation³ (FDM, by its acronym in Spanish) which hosted the first formal proposal to present this nomination. The proposal would have come to nothing without the receptiveness and conviction of the FDM, its patrons and those presiding the Board both then and now. This is the account of how this heritage came to be universally recognised. At the beginning, the former Spanish Ministry of Agriculture, Fisheries and Food, Patron of the FDM, played a fundamental role and was a vital link between civil initiative and the institutions. The Ministry took on a firm commitment with this initiative as did the Ministry of Italy which showed the same support favouring the transnational profile of the nomination right from the beginning. The implication of Greece and Morocco would firmly seal this joint endeavour. The presence and commitment of the Ministries of Culture confirmed another noteworthy aspect of this nomination: institutional transversality.

These sensibilities and synergies would have come to nothing if they had not fallen on fertile soil. This was favoured in recent years by the work carried out by sectorial organisations, markets, health and nutrition professionals, universities, institutes such as IEMed, which was involved in the nomination from the very beginning, associations, chefs, media, communities and people working anonymously, that had been striving for a long time in favour of the Mediterranean, raising awareness, defending and promoting the Mediterranean Diet.

This process was conceived and had been germinating in civil society from the outset and had the privilege of counting on the involvement of national, regional and local institutions⁴ and received the unconditional support of the scientific community. Both angles were fundamental and synchrony between all was decisive. It continued to enjoy the support and commitment of all the sectors that for many years had worked in favour of this Mediterranean heritage⁵. Besides, after publicly expressing the wish to present

1 - Commitment stated in the joint declaration of Spain, Italy, Greece and Morocco, (Rome, May 2008): “Encourage the invitation and adhesion of the countries of the Mediterranean arc, as this is common cultural heritage shared by all the countries of the basin.”

2 - The Convention for the Safeguarding of the Intangible Cultural Heritage was passed at the 32th General Conference of UNESCO (Paris, 29 September-17 October 2003). It came into force in October 2006. On 2 November 2011 139 States had ratified it.

3 - The Mediterranean Diet Foundation (FDM), with headquarters in Barcelona, was created in 1996 and devotes its efforts to the safeguarding and promotion of the cultural heritage and lifestyle shared by the peoples of the Mediterranean. It has an International Scientific Committee with more than twenty renowned international researchers (<http://www.fdmed.org>).

4 - The involvement of the autonomous, regional and local governments favoured a direct link between the territory and its communities and the nomination project.

5 - We should not forget, for example, the International Conference on Mediterranean Diets (Harvard School of Public Health, 1993), where the first pyramid of the traditional Mediterranean Diet was presented, promoted and sponsored by the International Olive Oil Council (IOOC).

the Mediterranean Diet nomination, there was a genuine explosion of enthusiasm and support from institutions and all types of associations, thus consolidating the transversal nature of the project. This elation came to demonstrate that a close bond and genuine identification persisted between the Mediterranean society⁶ and its cultural and food heritage.

As it is impossible to mention all the sources of support, we will just mention the first event in which the proposal of the nomination was publicly presented. This took place at a special moment, on 1st October 2005 during the Year of the Mediterranean. The solemn setting of the University of La Sapienza de Roma provided an ideal context for the Third Euro-Mediterranean Forum on the “Dialogue through the civilisation and peoples of the Mediterranean: food cultures”, with a large participation of renowned international scientists. It was there that the conference and the proposal of the nomination of the Mediterranean Diet were delivered at a round table under the title “The need for a common position on the Mediterranean Diet”, composed by eminent Mediterranean scientists, specialists in the Mediterranean Diet. The proposal of the nomination received the unanimous support of the Third Forum that included it in its final Declaration, *The 2005 Rome Call*: “To take into account that the traditional Mediterranean Diet besides its health implications also has cultural and economic implications, therefore all Mediterranean countries need to agree and contribute to the process of preservation and promotion. To start the process of the recognition of the Mediterranean Diet Food Cultural Heritage behind the UNESCO, as an initial and shared common position to be coordinated from the Barcelona counterpart as an extension of the 1995 Barcelona Declaration, in collaboration with all the Mediterranean country representatives”.

The following year, in Barcelona in March 2006, during the VI International Congress on the Mediterranean Diet, the international scientific community, following on from the Rome Call, renewed their unanimous support for the presentation of the nomination and the formalisation and immediate commencement of the process and made an appeal to all the Mediterranean institutions and organisations to follow suit and support the initiative.

The echo of this mobilisation was not left unheard. In February of 2007, in Ibiza, a Hispanic-Italian Summit, presided by the heads of the respective Ministries of Agriculture, closed with a Declaration of Support for the Mediterranean Diet. In October, on World Food Day, the FDM International Scientific Committee met in Barcelona and approved the “Declaration of Barcelona on the Mediterranean Diet as intangible cultural heritage”⁷. That same year, in December, the former Spanish Ministry of Agriculture, Fisheries and Food held the first transmediterranean institutional meeting in Madrid, in which Spain, Greece, Italy and Morocco agreed upon the preparation of the nomination based on a strategic document prepared by the FDM and created their respective national teams. The following spring, in April 2008, at the Italian Ministry of Agricultural, Food and Forestry Policies in Rome, the four States formalised the process through the Declaration of Rome and designated the FDM as technical transnational coordinator of the nomination. CIHEAM, whose Mediterranean Agronomic Institute of Bari already

6 - Consult the *Anna Lindh Report* of 2010, concerning these statements.

7 - To read the document in full visit www.fdm.org

formed part of the Italian technical team, joined this movement and at the Meeting of Ministers of Food, Agriculture and Fisheries of the CIHEAM member countries held in Zaragoza in February 2008, expressed considerable support for the Mediterranean Diet and presented the proposal in their Final Declarations. At their second meeting in Istanbul in March 2010, they renewed this commitment. In June 2008 the Greek Ministries of Agriculture and Culture hosted a meeting in Athens wherein the main contents of the proposal were agreed. Furthermore, in July 2009 the Moroccan Ministry of Culture hosted a decisive meeting in Rabat, reaffirming the will to present the proposal with additional elements derived from the first evaluation of the subsidiary body. The nomination was presented to the UNESCO in August 2009 and subsequently registered on 16 November 2010.

Declarations of the CIHEAM member countries (2008 and 2010)

Extract from the final Declarations and Additional Recommendations of the VII Meeting of Ministers of Agriculture and Fisheries of the CIHEAM member countries (Zaragoza, Spain, February 2008)

“Agriculture and Fisheries are essential sectors for social and economic development in Mediterranean countries. Therefore, they are key activities for the cooperation in the region, especially taking into account the shared and centuries-old cultural background.

[...] Therefore, those initiatives that favour responsible agriculture and fisheries – from an environmental standpoint – should be promoted, to contribute to sustainable development in the Mediterranean Basin and safeguard the material and intangible values and qualities that characterize and identify its agricultural landscape, its coasts or its sea.

[...] These policies [of water and agricultural resources] will take into consideration the safeguard and promotion of Mediterranean Diet products, as well as their related environmental and landscape qualities.

[...] Because of its history and its geographical situation, the Mediterranean Basin has a long-standing tradition of producing and integrating a wide range of nutritious, appetizing and healthy food products. The unique characteristics of the products from the Basin together with the way they are combined, prepared as well as the eating habits have shaped a unique dietary pattern over centuries which has led the Mediterranean Diet to be recognized by the WHO and the FAO as a quality, healthy and sustainable food model. The Mediterranean Diet represents an amazing living cultural asset which is still spread and shared throughout all countries from the Mediterranean Basin. It also represents an important economic and social potential at the same time as a legitimate and extremely important sign of authenticity, quality and health. The promotion of the Mediterranean Diet in the international sphere may enable healthy consumption habits to be extended, promoting balanced and nutritious eating habits.

[...] As we are united and identified by this outstanding intangible cultural legacy and because of its social, territorial, environmental, landscape, economic, productive and health strategic importance, CIHEAM member countries support the proposal launched to recognize the Mediterranean Diet as UNESCO's Human Intangible Cultural Heritage.”

Extract from the final Declaration of the VIII Meeting of Ministers of Food, Agriculture and Fisheries of the CIHEAM Member Countries (Istanbul, Turkey, March 2010)

“The Ministers recommend CIHEAM to regional food production system following the standards of the Mediterranean Diet that foster the spirit of conviviality and favour consumption of local and seasonal products, particularly by encouraging regional networks to support public decisions for the protection, promotion and marketing of Mediterranean products and the development of environmentally sound agricultural production systems.”

Above and beyond the close collaboration between the four technical teams and the national and regional institutions, the complicity between the four States and their respective communities bore its first fruits in Spring. The first encounter of the four communities⁸ that presented the Mediterranean Diet in their proposal was hosted in Chefchaouen (Morocco) in April 2009, where their Declaration sealed the beginning of shared ambitions and commitments. The process was showing to be fruitful even before the registration; and the nomination was proving to be plausible, since the deployment of these synergies was one of the commitments that it contained. Meetings would follow in Cilento (Italy) in February 2011, Koroni (Greece) in June 2011 and a meeting in Soria (Spain), foreseen for the first semester of 2012. The first proposals and concrete agreements arose, creating a promising network of cooperation, exchange and good neighbour policy, that undoubtedly will be reinforced in the future.

The presentation of the nomination: three reasons and a conviction

In our opinion, the following three reasons are the driving force behind this project, that managed to bring together all the participants and nurtured it up to the time of the inscription and beyond:

1) The Mediterranean Diet represents a cultural heritage shared by all the peoples of the Mediterranean, with which they can all feel identified and see themselves reflected. Due to its transversal nature, it is of great repercussion and importance – and at the same time is determined by fields as fundamental as those of biological, environmental and cultural biodiversity; in questions as crucial as science, health, wellbeing, quality of life or education; in activities as important as agriculture, livestock farming and fisheries, industry, trade or tourism; in values as inalienable as sustainability, sociability, intercultural dialogue, respect for diversity or creativity. This is a cultural legacy and at the same time a resource for transmediterranean progress, in which all the peoples of

8 - The Mediterranean Diet as a unique lifestyle, determined by the Mediterranean climate and space, is shown, recreated and transmitted in the Mediterranean populations in general and in particular and within the framework of this proposal, in the Mediterranean populations of the four States that presented it. In the nomination, for illustration purposes, a small local community is identified in each of the four States to show in greater detail the presence, vitality, character and significance of this good that is so deeply rooted in the Mediterranean populations. This illustrative selection is by no means exclusive and therefore does not alter the representativity of this good in all the other Mediterranean communities of these four States. This affirmation is made thus in the Description preceding the resolution of the registration in UNESCO: It is rooted [the MD] in the Mediterranean communities, of which Soria in Spain, Koroni in Greece, Cilento in Italy and Chefchaouen in Morocco are examples.” With the previous consent of each of the four communities, the four States were those which chose them respectively.

the Mediterranean participate, of which they are also creators and for which they are corresponsable. Therefore, the wills of the four States and their respective national communities were soon united.

2) In recent decades the Mediterranean Diet is being subjected to severe alterations as a consequence of the effects of globalisation and important social changes. For many years, prestigious scientific publications, in various fields of expertise and numerous specialists⁹, have been warning about these transformations. CIHEAM itself has devoted, within its own field of competence, several chapters of *Mediterra* to this issue (Padilla, 2008; Oberti and Padilla, 2010). When faced with the evidence of information and statistics on the obvious and persistent deterioration of the Mediterranean Diet, beyond logical and beneficial evolutions, the four States shared a duty that was understood to be common, not just to their respective communities, but to the whole international community as this heritage, for all the peoples of the Mediterranean, is a clear example of sustainability, quality of life and wellbeing.

3) Finally, in defence of the Mediterranean Diet the sum of different isolated territorial efforts from around the basin is insufficient, no matter how great these efforts may be, it is essential to have a transmediterranean vector to articulate and orientate the main axes of common efforts¹⁰. CIHEAM represents an excellent example in this sense. The complexity of the heritage the Mediterranean Diet represents leaves no doubt about this question, without diminishing respect for the exercise of the respective sovereignties. Furthermore, shared necessities are long-lasting. Recent agreements, giving continuity and stability to the structure of organisation and of joint work, confer credibility to this initial commitment. The initiation of contacts to present the extended proposal, with the desire expressed formally by four new States¹¹, which would double the number of stakeholders, is another confirmation of this will to consolidate the transmediterranean cooperation revolving around this common cultural heritage.

It is evident that convergence on these three reasons needed long debates at times, as well as an approximation of points of view and consensus. This process, however only further enriched the proposal. Indeed, throughout these years of preparation of the proposal the Mediterranean Diet has always been a privileged intangible space for dialogue, encounter, rediscovery and recognition of “the Other” and in a special way a space for confidence and cooperation.

A conviction arose from the first transnational contacts that became consolidated over the subsequent months: the Convention for Safeguarding the Intangible Cultural Heritage of UNESCO offered a unique opportunity to forge a long-lasting transmediterranean

9 - The International Scientific Committee (ISC) of the FDM, in the Declaration of Barcelona (2007) stated: “[...] in spite of its increasing popularity worldwide, the Mediterranean Diet is endangered in all the countries of the Mediterranean region.”

10 - The final Declaration of the VIII Meeting of Ministers of Food, Agriculture and Fisheries of the CIHEAM Member Countries (Istanbul, Turkey, March 2010) placed special emphasis on this attitude stating that: “responsible development of the Mediterranean area calls for a common commitment to work together to meet the many challenges posed by climate change throughout the region and requires a joint effort to identify those assets that distinguish the Mediterranean zone from other regions across the world.” The ideas of common and shared arise as key concepts for the future of the Mediterranean.

11 - When closing the edition of this *Mediterra*, Algeria, Cyprus, Croatia and Portugal had formally transmitted their desire to form part of the presentation of the extended proposal of the Mediterranean Diet.

project¹² revolving around an urgent objective: safeguarding what would probably be the most common and characteristic element of the Mediterranean cultural heritage. The Convention offered the “ideal” excuse to the entire Mediterranean community to share a project of important consequences for progress, health, sustainable development and dialogue in the basin in the short, medium and long term.

The Convention has four purposes (article 1) that accurately reflect the common objectives of the four current States: “safeguarding the intangible cultural heritage; respect for the intangible cultural heritage of the communities, groups and individuals; awareness of the local, national and international levels of the importance of the intangible cultural heritage and its reciprocal recognition; cooperation and international assistance”. Besides, the Convention’s definition of intangible cultural heritage fitted the transversal and multifaceted nature of the Mediterranean Diet and its condition perfectly – a fundamental aspect – of living heritage (that is, in permanent evolution), recreated and transmitted without interruption.

Convention for the safeguarding of the intangible cultural heritage (UNESCO, 2003)

Article 2: Definitions

“For the purposes of this Convention,

1. The ‘intangible cultural heritage’ means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. For the purposes of this Convention, consideration will be given solely to such intangible cultural heritage as is compatible with existing international human rights instruments, as well as with the requirements of mutual respect among communities, groups and individuals, and of sustainable development.

2. The ‘intangible cultural heritage’, as defined in paragraph 1 above, is manifested inter alia in the following domains: oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe and traditional craftsmanship.”

The wide vital scope – from the landscape to the table – of the Mediterranean Diet was accurately described and identified. The occasion was considered unique because we had to take advantage of the launching of a new Convention that fitted perfectly with our heritage. This opportunity would not be missed when wills and objectives of various Mediterranean States had come together and because it was considered that there was no room for delay in deploying as many shared efforts as possible to contribute to safeguarding the Mediterranean Diet. This communion was undoubtedly “the” driving force behind the whole process.

12 - In the Declaration of Chefchaouen this same conviction arose, with the statement: “that the nomination of the Mediterranean Diet defines a framework full of possibilities for cooperation, exchanges and contribution to the shared effort for safeguarding this important element of our common intangible heritage.”

The proposal and registration in the List of Intangible Cultural Heritage of Humanity can be considered a success as far as the achievement of a complex transnational objective is concerned. They have allowed us to move forward along the road of transmediterranean cooperation and to experience the first stages of a journey that will be both long and fruitful, although perhaps frustrating from time to time, a journey as satisfactory as it is demanding and, undoubtedly, often complicated. It will be necessary to assume a level of exigency and difficulty much greater than that of the process of the nomination. This will not be a bed of roses. But, as the popular Turkish proverb says, the gardener who loves roses is slave to a thousand thorns.

A sea of heritage

Revisiting our roots

At the beginning of the 20th century, part of a text written in ancient Greek – probably from II century BC – was discovered in Berlin (Brodersen, 2010) amongst the poorly preserved papyri from the cartonnage of an Egyptian sarcophagus brought from Abusir-el-Melek. It contained different lists of wonders of that age, among them that of the “seven master pieces”¹³ which represent the first list known to date, even though in the damaged text only some could be recognised: The Temple of Artemis in Ephesus, the Egyptian Pyramids and the Mausoleum at Halicarnassus. The first complete list, of the many that followed, was written in the form of a poem attributed to Antipater of Sidon, at the end of II century BC. The list mentions the Walls of Babylon, The Statue of Zeus at Olympia, the Hanging Gardens of Babylon, the Colossus of Rhodes, the Egyptian Pyramids, the Mausoleum at Halicarnassus and the Temple of Artemis. Of all those located in the eastern Mediterranean, only the Egyptian Pyramids have survived to the present day. Somehow we have before us “the” list of exceptional works of the *orbis terrarum*, “the world” of that time.

A text from that age, of uncertain authorship, attributed to Philo of Byzantium, encourages his fellow citizens to discover and value these works through his writings in order to avoid “becoming weak because of the hardship of the journey” and as “a great gift that frees men from travelling and teaches wonderful things from their homes by giving their own souls eyes to see the world”. In connection with the increasing number of people who set out on the journey to visit the Statue of Zeus, Epictetus wrote: “You journey to Olympia to see the work of Phidias; and each of you holds it a misfortune not to have beheld these things before you die. [...] Are you not scorched by the heat? Are you not cramped for room? Have you not to bathe with discomfort? Are you not drenched when it rains? Have you not to endure the clamour and shouting and such annoyances as these?” In reference to the Temple of Artemis in Ephesus, Kai Brodersen pointed out that so many people visited it that soon many were making a living out of the souvenirs they produced and sold, under an “industry” and “business” regime, as written by Demetrius, one of the silversmiths who reproduced temples. Moreover,

13 - We could identify, time and culture differences aside, in this name (used by UNESCO for its Programme Masterpieces of the Oral and Intangible Heritage of Humanity, from 2001 to 2005) and in many others that exist (*septem opera in orbe terrea miranda, septem spectacula, septem miracula, septem omnium Terrarum spectacula*, etc.), the prodigious, wonderful or exceptional character recognised in these works and at the same time the “universal” character since the Mediterranean was at that time “the World”. Somehow they were wonders, prodigies, “cultural heritage” of “all mankind”.

Demetrius and his fellow craftsmen came up against Saint Paul and his Christianisation, and he exclaimed: “this Paul has convinced and converted many people saying that there are no gods made with hands. This not only threatens our industry but also the consideration of the sanctuary of the great goddess Artemis, in such a way that she, who is worshipped by the whole of Asia and the world, will even be divested of her majesty”.

This passage shows the presence of the tangible and the intangible in a shared heritage as well as the awareness of how influential the latter is and how necessary they both are in order to express themselves to the full. It also illustrates how up-to-date these stories may seem in the sphere of our cultural tourism, with all its variations and idiosyncrasies. The fascination for the seven wonders has not diminished over time. The Portuguese, not the only example, selected in 2011 the *7 Maravilhas da Gastronomia Nacional*.

Differences aside, this precedent, which could be found in the Mediterranean with hundreds of other tangible and intangible examples, from the beginning of arable and livestock farming through to perhaps the most important achievement of humanity: writing, which somehow illustrates the process of acquiring heritage status (Skounti, 2010) of “things” and “facts”, their valorisation and dissemination and their use as a resource.

A quick journey throughout the Mediterranean may acquaint us today with more than two hundred properties inscribed on the World Heritage List and around thirty elements inscribed on the recent List of the Intangible Cultural Heritage of Humanity. Many of these properties and elements refer, partially or fully, to landscapes, works or expressions from the sphere of agriculture, grazing, fishing, management of water resources, diet or lifestyle, and also biodiversity or sustainability. The Stari Grad Plateau in Croatia; the Amalfi Coast in Italy; the cultural landscape of the Mediterranean agropastoralism of Les Causses and Les Cévennes, in France; Byblos and its thousand-year-old testimonies of fishing villages, in Lebanon; spice bread baking in Croatia; the Council of Wise Men of the plain of Murcia and the Water Tribune of the plain of Valencia, in Spain; or even the Mediterranean Diet itself, are just a small random sample that shows not only the great importance of agriculture and fisheries in the Mediterranean throughout history but also our own lifestyle today. Undoubtedly, as Igor de Garine says, the Mediterranean man or woman is somehow defined according to the aquifer resources and the food that can be obtained from them (Garine, 1993).

Rethinking culture and heritage

Given this historical background and if we take a giant leap into the 20th century, we can quote the words of Claudio Magris, who, although not referring specifically to cultural heritage, makes a useful introduction to this topic: “The paternity of a work is no less precarious than that of the flesh and does not guarantee that its authority will be more solid or long-lasting, but equal to it and can only bear witness to the imprevisibility of the life that its creature leads in the world, whose face bears the marks of its parents, but acquires the features of its history” (Magris, 1982).

This passage shows us that what we inherit, namely our heritage, does not remain unchanged nor is it isolated but it is constantly soaking up the present, the moment in which we are

living, and taking shape without interruption. This brings us to two core concepts, culture and heritage and moreover, the great evolution of both over the past decades, so that the universal recognition of the Mediterranean Diet can be understood and recognised.

Magris' text was published the same year that the World Conference on Cultural Policies was held in Mexico City, and its final Declaration recognised that "the world has undergone profound changes in recent years" and stated "that in its widest sense, culture may now be said to be the whole complex of distinctive spiritual, material, intellectual and emotional features that characterise a society or social group. It includes not only the arts and letters, but also ways of life¹⁴, the fundamental rights of the human being, value systems, traditions and beliefs". Later it added that "the cultural heritage of a people includes the works of its artists, architects, musicians, writers and scientists and also the work of anonymous artists, expressions of the people's spirituality, and the body of values which give meaning to life. It includes both tangible and intangible works through which the creativity of that people finds expression: languages, rites, beliefs, historic places and monuments, literature, works of art, archives and libraries".

Cultural heritage took on a new vision, which had been growing since the middle of the 20th century, linked to the anthropological concept of culture, and contributing new theoretical perspectives and bringing new actors onto the heritage scene (Carrera, 2009). It broke away from the principles of the nineteenth century, present until well into the 20th century, that were based on a monument-oriented and elitist conception of heritage. This new focus adopted a more intimate approach and opened out to the whole community, who in fact were really recreating and disseminating the heritage, and gaining the prominence that they had been denied for some time (the 2003 Convention brought communities to the forefront); "antiquity" was no longer a *sine qua non* criterion and heritage shifted its sights from the object to the context, which was of decisive importance. Henceforth, local and everyday life crossed national and conventional boundaries (Reguant-Aleix, 2005).

Another important and fundamental change regarding heritage was the capacity to rise above and beyond political territorial boundaries that had been "incomprehensible" and unconnected for many goods, which led to what we know today as transnational heritages (which are favoured explicitly by the 2003 Convention), and helped heritage to recover its natural spaces and facilitated significant cooperation and dialogue. In this process, the Convention for the Safeguarding of the Intangible Cultural Heritage plays a prominent role because of the novel theoretical content it provides. In this paper UNESCO is highlighted, not only because of its own merits but because we are dealing with an element which is inscribed in one of its Conventions. This does not confine nor exclude or replace any discourse or initiative. In our geographical context institutions such as the Council of Europe – aside from national institutions which obviously preceded all the rest in this matter – have undertaken very important work in the past years concerning heritage. A recent example is the "Council of Europe Framework Convention on the Value of the Cultural Heritage for Society" (2005) which promotes a holistic, open and transdisciplinary approach to heritage, understood not only as

14 - Our Mediterranean Diet, as a way of life or lifestyle, from the Greek term *diáita*, was already present in this Declaration and recognized as an expression of culture. The definition of cultural heritage that was included contained the elements set out in our nomination.

linked to the past, but decisively inscribed in the present and in the future (Palmer, 2009). Nor can we forget the positive impact of the Euromed Heritage Programme, financed by the European Union, in the spirit which is worth mentioning here: “We take care of our past to protect our future”.

On the international scene, organisations such as the FAO have also incorporated the concept of heritage in their programmes. An interesting example is that of the GIAHS Project (Globally Important Ingenious Agricultural Heritage Systems) which since its creation in 2002 aims at the international recognition, dynamic preservation and sustainable management of these systems, maintained and passed on by generations of farmers, herders, forest dwellers and fisher folk. The CIHEAM, in the Declaration of the VII Meeting of the Ministers of Agriculture and Fisheries of CIHEAM Member Countries (Zaragoza, 2008), insisted along similar lines: “The Mediterranean Basin bears witness to a unique culture and is a paradigmatic example of clever and sustainable use and of intelligent management of water resources. The Observatory will also pay special attention to these assets, documenting all cases and integrating them when possible into the new irrigation policies”. The International Council on Monuments and Sites (ICOMOS), on the other hand, dedicated the International Day for Monuments and Sites, in 2010, to the subject of “Agricultural Heritage”.

Another decisive step forward – for the Mediterranean Diet too – was to overcome the segregation between “greater” and “lesser” heritages. Until recently, it would have been impossible to place tangible and intangible on the same level as elements such as the bridge of Gard and Lefkara lace, for example, or define them in the same terms; today, each are inscribed in the Lists of World Heritage and of Intangible Cultural Heritage respectively. The first group is made up of “monuments” or “works of art”, the second group was composed merely of nostalgic popular works of fine craftsmanship or manifestations of “popular culture” or picturesque folklore (Reguant-Aleix, 2005). In this “lesser” class, elements in last position were related to expressions or knowledge related to the agrosilvopastoral world of fisheries, to the kitchen or the table. In the best of cases they constituted peripheral ethnological curiosities.

Regarding this last aspect, we should mention the “Meeting of the group of experts on food practices as an integral part of the cultural systems and intangible cultural heritage” (Vitré, France, 2009), with the attendance of prominent figures of UNESCO. We will mention only an extract of their Conclusions, but it will give a good enough idea of their significance: “food practices should not merely be considered as a response to biological necessities, but as cultural experiences elaborated by human groups throughout history. Insisting on the fact that food practices participate significantly in providing communities, groups and individuals with a feeling of identity and continuity; they transmit them from generation to generation; and they contribute to the valorisation of cultural diversity, human creativity and to sustainable development”; they added that “food practices cannot be reduced to one or several acts or phases of their elaboration, but they are manifested as a structured and complex process ranging from sourcing raw materials to the moment of consumption¹⁵. An isolated segment would not be

15 - It reflects precisely the same idea that we have been promoting from FDM, “from the landscape to the table”, in order to express the scope of the Mediterranean Diet synthetically.

representative of the whole process, which is in constant evolution.” And underlined that “food practices should be understood from the point of view of their historic depth and cultural specificity”. The importance and appropriateness of these Conclusions cannot be expressed enough.

Two important facts have coincided in time: the recognition of the lifestyle of a community and that of its food habits – in the widest and transversal sense – as a substantial part of its culture and heritage, and significant evolution and broadening of these two concepts. In this encounter, the Mediterranean Diet acquires strength and becomes impregnated with perennity.

A new context for the Mediterranean Diet

Within the context of UNESCO regarding cultural heritage, two closely related Conventions¹⁶ should be highlighted: The Convention on the protection of cultural and natural heritage (1972), flagship of the UNESCO in matters of protection and diffusion of cultural and natural heritage from which the well-known World Heritage List stems, and the heritage of humanity; the Convention on the Safeguarding of intangible cultural heritage (2003) that embodies a new legal and theoretical framework for the Mediterranean Diet.

The inscription situates it in the binding regulatory framework of the Convention for the Safeguarding of Intangible Cultural Heritage. This means that each of the four State Parties should satisfy all the commitments derived from this document and inscription. Another question that is just as important, if not more so, and which leads to a certain number of confusions, refers to the actual element inscribed.

Indeed, the element inscribed is the Mediterranean Diet and constitutes “a set of skills, knowledge, practices and traditions ranging from the landscape to the table, including crops, harvesting, fishing, conservation, processing, preparation and, particularly, consumption of food [...]. This unique lifestyle determined by the Mediterranean climate and space, is also shown through the associated festivities and celebrations”¹⁷. Besides, through their social and cultural functions as well as their significance, it embodies landscapes, natural resources and associated occupations as well as the fields of health, welfare, creativity, intercultural dialogue and at the same time values such as hospitality or conviviality, sustainability or biodiversity. All of this composes this transversal cultural complex that, understood as a complete lifestyle, we call the Mediterranean Diet.

It is the whole concept of Mediterranean Diet that has been inscribed, not each of its components, whether tangible or intangible. Neither the olive oil from Jaen, nor the *mousses* of the cherries, the market of Mistras, or the *Capponata*. However, they are all examples of substantial components of the inscribed element. That is, a necessary constitutive part of the Mediterranean Diet, form part of this element recognised as intangible cultural heritage of humanity, but none of them, nor any other in the framework of this nomination and inscription, bears this recognition at individual level.

¹⁶ - Besides these two, UNESCO works in fields that are very closely interrelated with the heritage of interest: www.unesco.org.
¹⁷ - <http://www.unesco.org/culture/ich/index.php?lg=en&pg=00011&RL=00394>

This does not mean that one or several elements constituting the Mediterranean Diet, for example a festivity, a rite, a piece of fishing gear, a dish or agricultural landscape may not one day be inscribed individually as elements with a tangible cultural heritage in themselves for a given community. It is absolutely possible, completely worthy of respect and does not present any contradiction to the inscription of the Mediterranean Diet as a whole, quite the contrary, it is a sum of recognitions and protections at different scales. It is a question of scale and *zoom*. Although it is clear that it is one thing to inscribe and thus undertake the commitment to a “lifestyle” that represents a coherent and complete multi-faceted cultural expression within the context of a geographical and historic landscape, of hundreds of interrelated elements, and it is another to inscribe some of their components individually. This is also a fundamental aspect in the diffusion activities to respect the whole of the cultural complex, without breaking it up or impoverishing it, hence interfering with its significance.

In fact this case has already arisen – and will continue to do so, undoubtedly – both within the framework of the Convention of World Heritage and in that of intangible cultural heritage. In the latter case we can quote the inscription in 2009 of the “Irrigators’ Tribunals of the Spanish Mediterranean: the Council of Wise Men of the Plain of Murcia and the Water Tribune of the Plain of Valencia”, common law water management institutions within the framework of agriculture, whose origins go back to the time of Al Ándalus and that represent one of the largest Mediterranean cultural assets: the wise management of water resources, that have contributed to the sustainability of the basin and continue to do so, in particular to its agriculture and in general the lifestyle that we express in the Mediterranean Diet.

The same thing occurs in the World Heritage List with examples such as the Stari Grad plains, on the island of Hvar in Croatia, inscribed in 2008. This Mediterranean arable landscape used by the Greeks has kept the olive groves and the vineyards practically intact over more than 24 centuries, based on their territorial and plot structure, based on the *chora*, a traditional arable organisation, with its plots, tracks and dry stone walls. Intangible and tangible witnesses, living examples of the subject of this chapter. Furthermore, what we have just explained shows the large and important contribution of the Mediterranean Diet to the global and integral treatment of cultural heritage and to overcoming the tangible-intangible dichotomy. Since November 2010 it has taken on a new dimension that neither excludes nor substitutes any other, but joins them all to enrich its multifaceted nature. This involves renewed readings and relationships, recalibration of points of view and, in general, the extension of cooperation, strategies and opportunities.

Beyond the inscription

The Convention: new commitments, new impulses

We must warn that the Convention is a recent text that addresses both an issue and a concept at the same time, the “intangible”, young (but with a long ethnological trajectory) where penetration in the national legislations and their real application that is still unequal. Let us not forget that the scope of application of the Convention are the State territories, with different competences and legal frameworks concerning heritage and whose theoretical

and technical corpus on methodologies, inventories or measures of protection are still in the construction phase in no few cases. The processes of adaptation and implementation are neither simple nor obvious and these difficulties may worsen in particular elements of the Mediterranean Diet. The transversality of the Mediterranean Diet, with significant presence in sensitive and powerful sectors such as the agrofood, health or environment sector, will demand great efforts of education, research, description and definition, of theorisation and treatment of the evolution processes as well as an incessant follow-up.

As we have pointed out, the Convention represents a binding regulatory body for the State Parties¹⁸ that have ratified it. This means that today, in inscribing the transnational element, Spain, Greece, Italy and Morocco have undertaken a whole series of binding commitments that should be honoured.

After defining “safeguarding”¹⁹, in point III the Convention addresses the safeguarding of the intangible cultural heritage on the national level. Article 11 defines the functions of the State Parties: Each State Party shall: a) take the necessary measures to ensure the safeguarding of the intangible cultural heritage present in its territory; b) among the safeguarding measures referred to in Article 2, paragraph 3, identify and define the various elements of the intangible cultural heritage present in its territory, with the participation of communities, groups and relevant non-governmental organizations.” The obligation is clear... even though it is a tremendous undertaking.

Article 12 follows, that is also expressed in terms of obligation: “To ensure identification with a view to safeguarding, each State Party shall draw up, in a manner geared to its own situation, one or more inventories of the intangible cultural heritage present in its territory”. However the other three articles in point III, articles 13, 14 and 15, use more flexible formulas: Each State Party “by all possible means”; “shall endeavour by all appropriate means” y “shall endeavour to”, when referring to other safeguarding measures; education, awareness raising and capacity-building; and participation of communities, groups and individuals.

It remains clear that the inscription involves a general obligation that consists of safeguarding – mission composed of a great density of tasks according to the definition – and another concrete and necessary obligation in order for this safeguarding to be carried out efficiently and coherently, consisting of pertinent inventories. That is to say, to identify and be acquainted with in order to appreciate and safeguard. These are both obligations that the Committee revises periodically through the preceptive reports²⁰ on

18 - The Convention states textually in its article 2.4 “States Parties’ means States which are bound by this Convention and among which this Convention is in force.”

19 - Article 2.3: “The measures aimed at ensuring the viability of the intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage”

20 - We should mention two types of preceptive report, according to the Operational Guidelines: 1) those concerning the application of the Convention: “Each State Party to the Convention periodically submits to the Committee reports on the legislative, regulatory and other measures taken for the implementation of the Convention” (article 151), [...] “by 15 December of the sixth year following the year in which it deposited its instrument of ratification, acceptance or approval, and every sixth year thereafter” (article 152); 2) those concerning the elements present on their territory and inscribed in the representative List: “The State Party reports on the current status of all elements of intangible cultural heritage present in its territory that have been inscribed on the Representative List of the Intangible Cultural Heritage of Humanity. The State Party shall endeavour to ensure the widest possible participation of the communities, groups and, where applicable, individuals concerned during the process of preparation of such reports, which shall address, for

the application of the Convention that the State Parties should submit. The countdown for the submission of these reports has already begun since the inscription on one hand and the respective ratifications of the Convention on the other. Therefore the four States are aware that a transnational strategy should be defined for the application of measures and programmes aimed at safeguarding the Mediterranean Diet. In other words, to guarantee appropriate management.

However it is noteworthy that this Convention, in force since 2006 has appeared with considerable strength and repercussion. Beyond the number of elements already inscribed in the List and the number of States that have ratified it or that bring elements to it, the noteworthy part is the number of initiatives that have taken place and how soon they have taken off in many countries, whether in the form of modification of the legal framework to adapt it to this new Convention, in drawing up national plans for the safeguarding of intangible cultural heritage or in the theoretical debate on methodologies or inventories. In the Mediterranean area, let us cite three initiatives of interest to us on different scales:

- the Registro Della Eredità Immateriale (REI) constituted by the Region of Sicily, in July 2005, before entry into force of the Convention, a good example at regional scale to identify, register and safeguard this heritage;
- the transmediterranean project “Identity is future: Mediterranean intangible space” (MEDINS)²¹, executed between 2006 and 2008 to promote the safeguarding and valuation of intangible cultural heritage in the Mediterranean with the creation of cataloguing systems both at the level of the participating regions and on a transmediterranean level, an initiative of great interest in transnational cooperation in the field of cultural heritage;
- the declaration of the Mediterranean Diet as a good of cultural interest (BIC) by the Autonomous Government of the Region of Murcia (Spain), in March 2007, maximum figure of protection contemplated in the national and autonomous legislation and the only precedent, as far as we know, of this significance in the Mediterranean.

These all address the Mediterranean Diet, whether directly or indirectly and they have already done so three or four years before the inscription, taking advantage of the momentum gained by the Convention.

When under the previous heading we have dealt with substantial changes regarding culture and heritage, we have omitted one in order to mention it here. It is, in a nutshell, the leap from “static conservation” to “dynamic safeguarding”, to understanding and assuming that heritage is at the service of society and not the other way around, and, at the same time accept that heritage is not something “external” or “strange”, orbiting

each element concerned: a) the element's social and cultural functions; b) an assessment of its viability and the current risks it faces, if any; c) its contribution to the goals of the List; d) the efforts to promote or reinforce the element, particularly the implementation of any measures that might have been necessary as a consequence of its inscription; e) the participation of communities, groups and individuals in safeguarding the element and their commitment to its further safeguarding” (article 157).

21 - Nine Mediterranean countries participated in MEDINS (INTERREG III B-MEDOCC) (Italy, Spain, Greece, Malta, Morocco, Algeria, Tunisia, Egypt and the Lebanon) some of which were presented by different regions or associations, in different regimes.

around us, to be “admired” but that it forms a substantial part of our daily life, of the economic, social, environmental and cultural strategies and policies, part of our references and itineraries and is a vector and “guarantee of sustainable development” (UNESCO, 1989, 2001, 2002, 2003). Especially when, as in this case, we are addressing a way of life and even “survival”. Heritage is understood as a driver and not a deadweight, overcoming the conception of its protection as a tax and considering it as an economic, social and cultural investment. That is, heritage as capital and resource, that is always closely linked, in its use, and not abuse, to key concepts such as integrity, proportionality, prudence or respect and considering its protection not as an end in itself but as an instrument of economic and social progress. The Mediterranean Diet has, from this new perspective, great potential and its universal recognition offers it new energies and opportunities.

The future: overcoming stereotypes, building bridges

The transversality of the Mediterranean Diet and its environmental, economic, social and cultural transcendence, confer the inscription a unique dimension. The derived duty to safeguard goes beyond the strict framework whether institutional or otherwise, of “culture” and demands the same transversality in its management. The process of the nomination has provided approaches and healthy collaboration between Departments that are naturally distant or unconnected from each other such as Culture, Agriculture or Health. We should also add Environment, Land Planning (on all scales and in all environments) or Education. Within the framework of intangible cultural heritage and in questions of promotion and diffusion, the previous evaluation of the competent bodies of culture appear more than desirable to us. The inscription opens up a new era, unexplored to date, in the scope demanded by the Mediterranean Diet: of cooperation at all levels and between all sectors, in safeguarding a heritage that transcends a multitude of areas of the Mediterranean universe and that at the same time is an essential driving force for many of them. The holistic and transversal conception of this heritage that the proposal has “discovered”, defined and promoted as has the inscription, makes both transmediterranean cooperation and cooperation at local, regional and national levels indispensable, pointing out the star role of the community as bearer, recreator, and real transmitter of this heritage. None can be done away with and all are necessary and complementary. It will not be possible to “guarantee viability” (as demanded by the Convention) of the Mediterranean Diet without this transmediterranean cooperation and coordination and at the level of each State. It will be necessary to avoid great structures, and instead stimulate a dense network of incubators of projects, if possible interdisciplinary endeavours, constantly renewing themselves, solidly rooted in the territory and in reality and for which TIC can provide the necessary visibility, connectivity and capacity of exchange and communication in real time and at a low cost.

The inscription of the Mediterranean Diet has put numerous and important questions on the table. We cannot pretend to have solutions, responses or strategies readily available for all, nor address them here exhaustively. What is important is to confer them the importance they deserve and work without delay to achieve them.

The first question that arises is that of the geographical limits of the Mediterranean area, which we could call the “continent” of our heritage. We refer to the first Chapter of this publication in order to understand the complexity of this question in absolute

terms. Another thing is that in practical terms or regarding the application of certain norms or regulations certain limits can be agreed upon, supported by the combination of various scientific and technical parameters.

Another question of utmost importance refers to the “content” of our Mediterranean Diet. Namely, its tangible and intangible components. This is the inventory, which is both an indispensable process and tool that is constantly being updated. This is complex work that does not start from zero as many sources are available today. It is demanding, because the management of the tangible (landscapes, spaces, utensils, artefacts, etc.) and the intangible (festivities, knowledge, skills, etc.) will be a constant concern. The task proposed is undoubtedly complex and should be addressed without delay through the pooling of concepts, selection criteria, processes, methodologies and inventories, with its records and supports, to reach a consensus about all these items and more, that should allow us to become deeply acquainted with and define the “content”, in order to be able to value and decide what and how it is to be protected. A permanent Surveillance System appears to be an indispensable associated tool in the medium term, because this is live heritage, whose evolution should be observed and analysed carefully, without interruption, and, just as important, if not more, be appropriately accompanied by the coherence, consensus and respect that this implies. This includes both the bearers and the spatial-temporal contexts, or the tangible supports of the intangible manifestations of this heritage.

The desire to single out or identify products with diverse marks or logotypes is nothing new. We have only to refer to *terra sigillata*, an example among hundreds of this need, that has been felt since ancient times. Within the Euromediterranean framework, the PDOs, PGIs and other marks continue to identify and distinguish territorial production and knowhow today. This is another question, with various declinations, that appears with the inscription of the Mediterranean Diet. Could this be done with the emblem of the Convention? Should a mark or logotype be created? Recalling what we have stated beforehand on what the element inscribed is (the Mediterranean Diet), we have to know that use of the emblem of the Convention is regulated in the operational guidelines (in the absence of a protocol or regulation specifying all the details) that envisage whether or not to make commercial use of it (Chapter IV) but in any case it should be authorised by the only bodies that have this prerogative: the General Assembly and the Committee. Another matter is the creation of a distinctive mark or symbol for the “content” of the Mediterranean Diet, outside the framework of the Convention and the inscription, but, in this case, detaching it completely from the condition of intangible cultural heritage of humanity. In this matter, any parable or cunning hyperbole could only prove harmful and reprehensible to us.

Other responses will evidently be necessary concerning landscapes, techniques, elaborations, products, festivities, etc. The question is not simple. However, the difficulty and exigency of any project is always accompanied by the vector of progression and improvement. The key for a respectful and sustainable future of the Mediterranean Diet will be in the capacity and commitment to invest resources, intelligence and perseverance in sufficient quantities, applied efficiently. The Convention points out the “the importance of intangible cultural heritage” as a “guarantee of sustainable development”. This criteria

of sustainability is not exclusive of or inseparable from products, resources, spaces or uses. We should also apply it to processes, decisions and attitudes. Along these lines the questions that we have just put forward will find appropriate... and sustainable responses.

Conclusion

The recognition of the Mediterranean Diet as intangible cultural heritage of humanity by the UNESCO was never a finalistic objective, it is not the arrival at any goal, but, the necessary impulse for a worthwhile outcome in the future. A future that undoubtedly will require a great deal of clarity, composure and perseverance. The nomination process was perfectly delimited and with clearly marked stages. The future that begins on the day of the inscription is a succession of wide horizons in an unlimited time frame. The distance is huge and commands great respect. The Mediterranean is an area of great complexity, due both to the endogenous and exogenous vectors and the Mediterranean Diet is a cultural complex of capital importance that holds in its transversality and multifaceted nature some of the most defining and probably unique features. Throughout the whole process of the proposal, we have always defended this complexity as an important value, a great capital, fruit of a history reaching back thousands of years, of processes of civilisation, trade and exchanges, of apprenticeships and transmissions, of tradition and innovations, of convergences and collisions, perhaps unique. This complexity is one of the great strengths and potentialities of the Mediterranean Diet as a vector of regional development and at the same time is one of its factors of survival and perpetuity. It is also, however, an Aquilles heel, discreet but vulnerable. The challenge of safeguarding the Mediterranean Diet is enormous, but beyond foreseeable difficulties or the complexity of the objectives, the sum of efforts and commitments encourages and strengthens. A millenary voyage continues.

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BIOGRAPHIES



Sébastien Abis is currently Administrator at the CIHEAM General Secretariat. In addition to all of the activities attaching to that position, he is also in charge of communication policy and publications. He coordinates the *Mediterra* report at the scientific and technical level he is also in charge of the publications of the Mediterranean Observatory and responsible for the CIHEAM website. He is furthermore the founder and chief editor of the *Watch Letter*, a quarterly publication. As a political analyst, Sébastien Abis is the author and co-author of many books, reports, research papers and documented conference presentations dealing with Euro-Mediterranean geopolitics and economics, sustainable development and food security issues. He is a member of the iReMMO (Institute for Research and Studies on the Mediterranean and the Middle East) and of its review *Confluences Méditerranée*. Sébastien Abis is also Scientific Adviser to the association Futuribles International and a member of the editorial committee of the journal *Futuribles*. He is furthermore a member of the Scientific Committee of the Euromed-IHEDN Network.

Javier Albarracín is an international relations specialist, who graduated in political science and public administration (Autonomous University of Barcelona, Spain) and subsequently obtained a master's degree in International Relations (2000-2001). In 1998 and 1999 he worked at the Spanish Chamber of Commerce in Istanbul (Turkey). From 2001 to 2008, he was responsible for the Middle East and North Africa region in the Catalonia Consortium for Foreign Trade Promotion (COPCA) of the Catalan Ministry of Innovation, Universities and Enterprise. Since September 2008, he has been the Director of the Socio-economic Development Department of the European Institute of the Mediterranean (IEMed). He takes part in working groups and projects launched by think tanks and international organisations such as the Centre for Research on the Economies of the Mediterranean (CREMed), the Euro-Mediterranean Think Tank (IPEMED), the CIDOB Foundation, Promos Milan, the Centre for European Policy Studies (CEPS), the OECD-MENA Initiative on Governance and Investment for Development, the Union for the Mediterranean Secretariat or the ANIMA Investment Network, inter alia. He is a guest lecturer at several Spanish universities and economic institutions.

Luis Miguel Albisu has a PhD in Agricultural Economics from Cornell University (United States) as well as a doctorate in Agricultural Engineering from the Technical University of Madrid (Spain). He also has a MSc in Agro-food Marketing from Newcastle University (United Kingdom). He heads the Department of Agro-food Economics and Natural Resources at the CITA (Agrifood Research and Technological Centre of Aragon, Spain) and has supervised more than 25 MA dissertations and PhD theses. He is a member of the CIHEAM Scientific Advisory Committee and was a member of the Executive Committee of the European Association of Agricultural Economists for six years. He serves as a consultant for the EU, OECD and FAO. He has published many articles in European journals and is the author and/or editor of more than 10 books. He is also, or has been, a member of the editorial

committee of several scientific journals, such as the European Review of Agricultural Economics (Netherlands), *Agribusiness: An International Journal* (US), *Investigación Agraria-Economía* (Spain), *Agroalimentaria* (Venezuela), and *Revista Mexicana de Agronegocios* (Mexico). His main research interests lie in food marketing, especially consumer behaviour, the agro-food industries and the agro-food supply chain.

Annarita Antonelli holds a university degree in economics and has obtained a MSc in agro-food economics and agricultural policies from the MAI-Montpellier (CIHEAM-MAIM). She is involved as a consultant in MAI-Bari (CIHEAM-MAIB) activities concerning organic farming, sustainable agriculture and rural development. Within the training activities at MAIB, she acts as adviser in the preparation of MSc dissertations and contributes to the lecturing activities of the socio-economic modules of the courses. In the context of MAIB cooperation activities, she participates in several cooperation projects in Mediterranean countries (Lebanon, Syria, Tunisia, Morocco, Algeria, and Egypt) specialising in the socioeconomic aspects of the projects: market research and rural assessment, rural development strategies, territorial development and elaboration of local development plans. At present, her main research interests are in sustainable agriculture and rural development, market analysis, and economic and market aspects related to typical products. She is the author of several publications.

Xavier Aragall obtained a degree in political science from the Autonomous University of Barcelona (Spain). He is a migration researcher in the Euromed Policies Department of the European Institute of the Mediterranean (IEMed). As a member of the technical secretariat he coordinated the contents of the 2004 World Congress on Human Movements and Immigration. He was a member of the organising committee of the Spanish Congress on Immigration in 2004. He is a member of the scientific team of the Euromed Survey, a four-year European Commission project for conducting an annual survey of experts and actors to assess the progress, achievements and shortcomings of the Euro-Mediterranean Partnership.

Davide Arcella is a Scientific Officer in the Dietary and Chemical Monitoring Unit within the European Food Safety Authority (EFSA). He is responsible for the collection and analysis of food consumption data and for the development and application of new methodologies for dietary exposure assessment. In this context, he carries out or supervises the assessment of exposure to different types of chemicals in food and animal feed (e.g. contaminants, flavourings, food additives, packaging residues, nutrients and pesticides) for monographs or in support of EFSA panels or units. Davide Arcella holds a master's degree in statistical and demographic sciences from La Sapienza-University of Rome (Italy); he has worked in the area of food safety since 1998. More specifically, he is an expert in food consumption data and dietary exposure assessment. He started his career at the Italian National Research Institute for Food and Nutrition (INRAN), where he worked as a scientist for almost 10 years. In 2007 he joined EFSA and became a member of the FAO/WHO roster of JECFA experts on assessment of exposure to chemicals in food.

Anna Bach-Faig graduated in chemistry at the University of Barcelona (Spain) in 2002. She obtained a Master's degree in Public Health Nutrition from the University of Glasgow (United Kingdom) in 2003 and a PhD in the same field from the University of Barcelona in 2007. She is involved in both promotion projects and research in food and health. Her current research fields concern the Mediterranean Diet (MD) and chronic diseases, monitoring of adherence to the Mediterranean dietary pattern worldwide, food supply and demand at the workplace and school-lunch context, and consensus on the new MD pyramid. She is also member of the

Food and Physical Activity Promotion Plan expert panel of the Catalan Public Health Department, Director of the Mediterranean Diet Foundation Research Group of the Catalan Centre of Nutrition, and assistant lecturer at the Open University of Catalonia (Spain).

Rekia Belahsen is Professor and Head of the Training and Research Unit on Nutrition and Food Sciences and Director of the Laboratory of Biotechnology, Biochemistry and Nutrition at Chouaib Doukkali University, Faculty of Sciences in El Jadida (Morocco), since 1997. Among other positions, she is an expert evaluator for European Commission Consultant in nutrition and expert for UNICEF. She obtained several awards and numerous fellowships like the FAO Medal of Merit (Morocco) in 2007 and a grant from Islamic Development Bank in 1998. She is author of many publications and she involved as reviewer or in the editorial for several journals like the *Mediterranean Journal of Nutrition and Metabolism*. She is executive member of many national, regional and international organizations and groups like the Moroccan Society of Nutrition (SMN), the Federation of African Nutrition Societies (FANUS), Middle East and North Africa Nutrition Association (MENANA), Association of Nutrition without Frontiers (Nutricion sins Fronteras) and the International Union of Nutritional Sciences (IUNS). She participated and organized several of meetings like the 1st FANUS meeting in Ouarzazat (Morocco) in 2007 and the International Workshop on Nutrition transition and Population health. Her mail currently research subjects concern: nutrition transition, community nutrition, Mediterranean Diet, obesity, micronutrient deficiency and Food composition.

Elliot M. Berry is the Director of the Department of Human Nutrition and Head of the WHO Collaborating Center for Capacity Building in Public Health of the Faculty of Medicine, Jerusalem (Israel). He has been a visiting scientist at the Massachusetts Institute of Technology (MIT) and at Rockefeller, Cambridge and Yale Universities. He is a former Director of the Braun School of Public Health. His research interests include cultural evolution, the biopsychosocial problems of weight regulation, the Mediterranean Diet and the effects of nutrition on cognitive function.

Pierre Blanc is chief engineer of the interministerial corps “Ponts, Eaux et Forêts”. He has a doctorate in geopolitics and a master’s degree in molecular genetics. He works for the French Ministry of Agriculture and is thus currently involved in the activities of the CIHEAM. His courses, research and cooperation activities concern the geopolitics of the Near East (conflicts and identities) and the issues of water and land in that region. He lectures in various institutes – MAI-Montpellier (CIHEAM-MAIM), University of Paris VIII, Institute of Political Studies (IEP) in Lyon and Bordeaux, Institut de Formation et d’Appui aux Initiatives de Développement (IFAID) in Bordeaux, University of Pau, Saint-Joseph University (USJ) in Lebanon and MAI-Bari (CIHEAM-MAIB) in Italy. He is editor-in-chief of the academic journal *Confluences Méditerranée*, which specialises in geopolitics and in political, social and economic issues in the Mediterranean region and the Middle East. He is also a member of the Institute for Research and Studies on the Mediterranean and the Middle East (iReMMO) and the French Institute of Geopolitics.

Dimitrios Boskou graduated in chemistry from Aristotle University of Thessaloniki (Greece), subsequently obtaining a PhD from the University of London (United Kingdom) and the degree of Doctor of Science from Aristotle University. He served as a lecturer, associate professor and professor at Aristotle University from 1970 to 2006 and was a member of the Commission on Oils, Fats and Derivatives of the International Union of Pure and Applied Chemistry (IUPAC) from 1986 to 1998. Since 1995, he has been a member of the European Commission’s Scientific Committee for Food and an EFSA expert. He has published over

85 papers and reviews, is the author and editor of 6 books, and the lead author of more than 10 chapters in books relating to the chemistry of oils and natural products. He is a contributor to international scientific encyclopedias and the Lexicon of Lipid Nutrition.

Roberto Burdese began to work for Slow Food in 1991 and has been involved in several projects involving various activities. He worked on various publications with the Slow Food publishing house Editore. He coordinated the organisation of the Salone Internazionale del Gusto (which has been hosted in Turin every two years since 1996) and he worked closely with Carlo Petrini on ambitious projects such as the creation of the University of Gastronomic Sciences. In 2004, he participated in the creation of the international network Terra Madre. He also worked to develop the international Slow Food network until the end of the 1990s. With regard to Slow Food Italy in particular, he served on the National Council of the association from 1998 and was nominated Vice-President of Slow Food Italy in 2002. He became President of Slow Food Italy in 2006 and is still in office at the present time.

Roberto Capone is an agronomist, who graduated from the University of Bologna (Italy) in 1987. He has been Chief Administrator of the MAI-Bari (CIHEAM-MAIB) since 2008, where he is also head of the Sustainable Agriculture, Food and Rural Development Department dealing in particular with sustainable Mediterranean Diets and traditional/typical products. He was formerly adviser to the Italian minister of agriculture for research in the Mediterranean Basin, Secretary-General of the Italian Committee for Liaison with UN organisations dealing with food and agriculture and Principal Administrator of the CIHEAM General Secretariat. He was also a member of the Italian technical committee dealing with the nomination of the Mediterranean Diet for inclusion on UNESCO's Intangible Cultural Heritage list.

Sandro Dernini graduated in biology from the University of Cagliari (Italy) and obtained his PhD from New York University (US). He has been the coordinator of the Forum on Mediterranean Food Cultures since 2002 and of the International Interuniversity Centre for Mediterranean Food Cultures Studies (CIISCAM) since 2006. From 2007 to 2010 he was head of the technical bureau of the President of the Italian National Research Institute on Food and Nutrition. Since 2009 he has been an FAO consultant for the Nutrition and Consumer Protection Division. He is a member of the international committee of the Foundation for the Advancement of the Mediterranean Diet, of the International Society for the Advancement of Living Traditions in Art, and of the ONG Nutrition without Borders.

Lorenzo M. Donini is a food science and nutrition specialist. As an Associate Professor in the Faculty of Medicine and Surgery of La Sapienza University of Rome (Italy), he carries out research activities dealing specifically with the study of nutritional issues relevant to malnutrition, catering services, obesity and metabolism, and eating behaviour. He is the professor in charge of the degree course for dieticians and coordinates the activities of the teaching staff of the Specialisation School in Food Science and Nutrition at La Sapienza University of Rome (Italy). At the "Villa delle Querce" Clinical Rehabilitation Institute in Nemi (Italy), he is the Scientific Director of the Metabolic-Nutritional Rehabilitation Unit, which is composed of a metabolic-nutritional rehabilitation ward, an internal consulting service and a dietetics out-patient clinic, which adopts a multidisciplinary approach integrating nutritional evaluation and treatment, physical reconditioning and cognitive-behavioural group therapy.

Hamid El Bilali graduated in agronomy from the Hassan II Institute of Agronomy and Veterinary Sciences (IAV-Hassan-II) in Rabat, Morocco. He is currently a researcher and

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Hiba El Dahr holds a PhD in economics from Montpellier-I University. With a multidisciplinary background in the fields of agronomy, agribusiness and then rural and agricultural economics, she has held various positions beginning in Lebanon as an agricultural engineer. In 2007, she defended a multidisciplinary PhD thesis focusing on the determinants of healthy food consumption. Her knowledge of agricultural and food issues in the Mediterranean allowed her to serve as the regional coordinator for the Mediterranean in the International Federation of Agricultural Producers (IFAP). She is the author of several articles on the determinants of healthy food consumption, the role of farmers' organisations in the development process, food marketing, and food and agricultural issues in the Euro-Mediterranean area.

Abderraouf Elferchichi has worked as a hydraulic and water resources engineer since 2005. He obtained a master's degree in Land and Water Resources Management from the MAI-Bari (CIHEAM-MAIB), and in 2011 he obtained his PhD in Environmental Engineering from the University of Basilicata (Italy).

Mohamed Yassine Essid has a doctorate in the humanities from the University of Paris-I-Pantheon-Sorbonne (France). He is professor of Medieval History at the Faculty of Human and Social Sciences in Tunis (Tunisia) and is the former Dean of the Faculty of Humanities and Human Sciences in Sfax (Tunisia). He is also the President of the Multidisciplinary Studies and Research Group of the Mediterranean (GERIM) and, in that capacity, organised the first multidisciplinary symposium in the Maghreb on the Mediterranean Diet. He is also the author of several articles and books about Tunisian food.

Senén Florensa is a diplomat and ambassador. He has been the President of the Executive Committee of the European Institute of the Mediterranean (IEMed) (Spain) since 2005. He was Ambassador of Spain to Tunisia from 2000 to 2004, Consul General in Berlin (Germany) from 1992 to 1996, First Secretary of the Spanish Embassy at UNESCO in 1986, and Director-General of the Institute for Cooperation with the Arab World, the Mediterranean and Developing Countries (ICMAMPD) of the Spanish Ministry of Foreign Affairs and Cooperation from 1996 to 2000. He was also Secretary-General of the Ministry of Trade, Consumption and Tourism of the Government of Catalonia from 1986 to 1989 and of the Ministry of Territorial Policy and Public Works from 1989 to 1992 and an advisory member of the Office of the President of the Spanish Government from 1979 to 1982.

Fatiha Fort holds a degree in agricultural engineering from the Hassan II Institute of Agronomy and Veterinary Sciences in Rabat (Morocco) and a PhD in marketing from Montpellier University (France). She is currently an associate professor in Montpellier SupAgro (France), where she carries out research in the MOISA Research Unit (Markets, Organisations, Institutions and Actor's Strategies). This research work is at the interface between strategy and marketing in the food sector. In the strategy field, she is interested in the adoption of innovation processes in SMEs in connection with sustainable development, and in the marketing field she focuses on consumer behaviour with regard to sustainable food and in regional marketing.

José María García Álvarez-Coque is Professor of Agricultural Economics at the Universitat Politècnica de Valencia (UPV, Spain). From 2001 to 2004 he was Head of the Department of Economics at that university. He currently chairs the International Economics Group, a research unit dealing with international agricultural issues. He chaired the Spanish Association of Agricultural Economists from 2001 to 2007. Since 1987 he has frequently acted as a consultant and director of research projects analysing the Common Agricultural Policy for EU institutions (Parliament, Commission) and the Spanish public administration. In 1991, he was visiting researcher at the International Food Policy Research Institute (IFPRI) in Washington D.C. In 1993 and 1994, he chaired the Working Group on Fruit and Vegetables at OECD (Paris). In the last 20 years he has acted as a consultant for international organisations dealing with agriculture, food security and regional integration (FAO, Andean Community, CIHEAM, UN), focusing on Latin America and the Middle East and North Africa region. Since 2010 he has been a member of the steering committee of the SUSTAINMED project “Sustainable agri-food systems and rural development in the Mediterranean Partner Countries” (SUSTAINMED, European Commission).

Anne-Laure Gassin is EFSA’s Director of Communications since 2003. She is responsible for developing and implementing EFSA’s risk communication strategy, with the overall goal of providing effective, consistent, accurate and timely information for all stakeholders and the wider public based on EFSA’s scientific advice. Anne-Laure Gassin chairs the Advisory Forum Working Group on Communications, established in 2003, to help foster coherence in risk communications on food-related issues across the EU. Before joining EFSA, she worked at the European Commission’s DG for Health and Consumer Protection, where she contributed to preparing the revision of Community legislation on nutrition labelling for foodstuffs. Prior to that, she spent over 15 years with the Kellogg Company, where her last appointment was as European Director with responsibility for nutrition communications, and scientific and regulatory affairs. She graduated from Harvard University in 1981, where she majored in biology, and was awarded a Master in medical management and marketing in 1987 from the École Supérieure de Commerce in Paris.

Isabel González Turmo has a doctorate in social anthropology and is a professor at the University of Seville (Spain). She has been principal researcher in several projects concerning in particular food in the Mediterranean region and food anthropology (food and customs). She is a member of many scientific committees, congresses and commissions such as the ICAF (International Commission on the Anthropology of Food). She has published over 70 articles and papers on the evolution of food habits, food analysis and the Mediterranean Diet. She is currently a member of the survey group on Territory, Culture and Development TECUDE (SEJ-418).

Habiba Hassan Wassef, a former Whitehall Research Fellow of the American Nutrition Foundation, is currently an independent expert in nutrition and public health policy in development for the UN system and the European Commission after a 20-year career with the World Health Organisation (WHO). She serves on a number of national scientific committees on nutrition, mother and child health and welfare, and environmental health. She is also a member of the Medical Research Council and a nutrition research consultant for the National Research Center in Cairo, the National Coordinator for the 7th European Framework Research Programme in the field of food and nutrition, a trustee of the African Nutrition Society, and a member of the UN Transition Team assisting the UN Special Representative for Food Security in the scaling-up of nutrition programmes.

Hélène Ilbert is an agro-economist working in the field of global international economics at the MAI-Montpellier (CIHEAM-MAIM). As a research director she monitors programmes on biodiversity (Fruitmed, 2009-2012) and geographical indications in the Mediterranean area (Femise, 2005-2008); multilateral, bilateral, decentralised programmes such as *Cybermontagne* or *Ecopter* are examples of practical cooperation. Hélène Ilbert is also a member of the Agropolis research team on global international relations (UMR Moisa) and has been conferred awards by the National Scientific Research Institute (CNRS) and the DG Research of the Commission of the European Communities (AREMM, “Möbius Prize”).

Josep Maria Jordán Galduf is Professor of Applied Economics at the University of Valencia (Spain). He obtained a PhD in Economics from that university and a MA in European Studies at the University of Reading (United Kingdom). He was a visiting professor at the University of Reading, at the Free University of Brussels (Belgium), at the Instituto Tecnológico Autónomo de México (ITAM-Mexico), at the Hebrew University of Jerusalem (Israel), and at the Cadi Ayyad University of Marrakesh (Morocco). He is a member of the Advisory Council of the European Institute of the Mediterranean (IEMed Barcelona). He has published several articles in *Información Comercial Española*, *Papeles de Economía Española*, *Boletín Económico de ICE (Información Comercial Española)*, *Mediterranean Politics* and *Mediterráneo Económico*.

Céline Kalaitzis is in charge of the revision and the translation of EFSA's French publications and other communication material. She also occasionally manages projects within the framework of communication actions in French. She holds a master's degree in communication and first worked during several years as a parliamentary assistant in the Parliament of the French Community in Belgium. She then joined the Human Resources department of the Education, Audiovisual and Culture Executive Agency (EACEA) in Brussels where she supported the launching and management of staff training programmes to staff before joining EFSA in 2008.

Panagiotis Kefalas is a chemist specialising in organic synthesis and the chemistry of natural products. He graduated in 1983 from the Faculty of Chemistry of the University of Athens (Greece). He obtained his PhD from the University of Paris-XI (France) in 1988 in collaboration with the National Centre for Scientific Research (CNRS, Gif-sur-Yvette, France), where he stayed for another two years of post-doctoral research on the synthesis of anti-HIV products. After a five-year stint in the fine chemicals industry, he has been working with the CIHEAM since 1996, where he is posted in the MAI-Chania (CIHEAM-MAIC) as research and studies coordinator for the “Food Quality and Chemistry of Natural Products” programme. He is the author of some 85 scientific peer review publications to date as well as 3 chapters of books and a European patent, and he has participated at several international conferences.

Ahmet Ali Koç obtained his BSc and PhD degrees in agricultural economics from Çukurova University-CU (Turkey) as well as a master's degree in agro-food marketing from the MAI-Zaragoza (CIHEAM-MAIZ). He worked as a research assistant from 1989 to 1995, assistant professor from 1995 to 1998 and associate professor from 1998 to 1999 in the Department of Agricultural Economics of Çukurova University. He was a visiting scholar at the Center for Agriculture and Rural Development/Food and Agriculture Policy Research Institute of Iowa State University (United States) from 1997 to 1999 and worked as a policy analyst at the Agricultural Economics Research Institute in Ankara from September 1999 to May 2001. He joined the Akdeniz University Department of Economics in Antalya (Turkey) in August

2003. In 2009 he became a member of the European Agricultural Modelling Platform. He has published over 15 articles in peer-reviewed journals and is the author of over 20 proceedings and abstracts and 5 contributions to collective works.

Denis Lairon obtained a PhD in biochemistry and has expertise in human nutrition. He is full-time Research Director at the INSERM (National Institute of Health and Medical Research). He was the Director of the Joint Research Unit 476 – Inserm/1260 Inra/Université de la Méditerranée – on “Human Nutrition and lipids: bioavailability, metabolism and regulations” in Marseille (France) from 1998 to 2007. His fields of expertise are lipid digestion and metabolism, food quality, gene-diet interaction and nutrigenetics, Mediterranean Diet and cardiovascular disease, and sustainable diets. He has been involved in European projects (3 COST actions, PI-LIPGENE, NoE-NUGO), has supervised 19 university doctoral theses and co-authored 195 original papers in reputed scientific journals as well as 80 reviews and chapters of books. He has been a member of the Editorial Board of the *British Journal of Nutrition* and of *Nutrition and Metabolism*. He is an expert in French and international panels on nutrition-related subjects. Denis Lairon was formerly the President and is now the Vice-President of the French Society of Nutrition. He was the Chairman of the scientific committee of the 10th FENS European Nutrition Conference held in Paris in 2007. He held office as the President of the Federation of European Nutrition Societies (FENS) from 2007 to 2011 and is now the Vice-President of the FENS (2012-2015).

Nicola Lamaddalena holds a MSc in Hydraulics from Bari Polytechnic (Italy) and a PhD in Irrigation Engineering from the Technical University of Lisbon (Portugal). He has been working for more than 20 years in agricultural engineering and water resources management, focusing on design and performance analysis of large-scale supply systems and new delivery technologies with associated modelling under conditions of water scarcity. He served as university professor at Bari Polytechnic and as visiting professor at the Technical University of Lisbon and at the National Institute of Agronomy (INAT) in Tunisia. He has provided consulting services to public and private sectors. His scientific and technical activities have been combined with the management of many water-related development projects in southern Europe, North Africa and the Near East, also in cooperation with International Research Centres and Universities. He is the author of over 100 publications in scientific journals and books and a reviewer for several scientific journals. Nicola Lamaddalena joined the CIHEAM's MAI-Bari (MAIB) in 1986, where he has been head of the Land and Water Department since 2005.

Lamberto Lamberti graduated in agricultural sciences at Bari University (Italy) and obtained an MSc in sustainable agriculture and rural development from Imperial College London in Wye (United Kingdom). Since 2001 he has been in charge of the scientific coordination of the advanced specialised course on sustainable agriculture at the MAI-Bari (CIHEAM-MAIB), where he lectures on sustainable agriculture, rural livelihoods and smallholder producer innovation systems. He has focused part of his activities on development cooperation initiatives in developing countries and has contributed, as author and editor, to the drafting of many papers and publications.

Giulio Malorgio holds a PhD in agricultural economics. He is an associate professor of agricultural economics at the Faculty of Agriculture of the University of Bologna (Italy) and the managing editor of the international review *New Medit*, a Mediterranean Journal of Economics, Agriculture and Environment published by Dedalo Edizioni, Bari (Italy). He is project leader of a study entitled “European market observatory for fishery and aquaculture

products” financed by the Directorate-General for Maritime Affairs and Fisheries (DG Mare) of the European Commission. He is the national expert on the wine economy and wine market in the International Organisation of Vine and Wine (OIV) in Paris, and he is the professor in charge of the Agrofood Economics and Marketing Course at the University of Bologna. In the past few years he has been involved in national and international research groups, such as those of the European Commission, the Italian Ministry of Agriculture, Food and Forestry, the CIHEAM, the OIV, and the Regione Emilia Romagna in Bologna (Italy). He is the scientific coordinator of the Observatory on the Agrofood System in the Mediterranean Region, which is run by the ISMEA (Istituto di Servizi per il Mercato Agricolo Alimentare), the MAI-Bari (CIHEAM-MAIB) and the Italian Ministry for Agriculture, Food and Forestry. His main fields of research are agribusiness, the Mediterranean agrofood system, and supply chain analysis in the agrofood sector involving sectors such as fruit and vegetables, wine, fisheries, etc.

Victor Martinez-Gomez obtained a degree in advanced agricultural engineering – specialising in agricultural economics – and holds a PhD in agricultural economics. He works as an associate professor of microeconomics and agricultural economics and policies at the Department of Economics and Social Sciences of the Universitat Politècnica de Valencia (UPV, Spain). He carries out his research activities within the International Economics Group (UPV) and his main focuses are agro-food trade and innovation, entrepreneurship and corporate internationalisation. He has published several articles in journals and chapters of books on these subjects.

Francisco Mombiola is the former Director-General for Industries and Food Markets of the Spanish Ministry of the Environment. He resigned from this position in 2009 and took up office in the General Secretariat of the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) in Paris (France). He has a doctorate in agronomic sciences from the Technical University of Madrid (Spain). He has wide knowledge of agronomic research (PhD from the University of North Carolina, several activities with the *Instituto Nacional de Investigaciones Agrarias* in Spain, etc.) and long and rich political experience in international negotiations, particularly in the internal organisation of the European Union market. He is the eighth General Secretary of the CIHEAM since the institution was created in 1962.

Martine Padilla obtained a PhD in economics from the University of Montpellier (France) in 1991. She has been authorised to supervise research since 1999 and is a research professor at MAI-Montpellier (CIHEAM-MAIM), where she is responsible for research and PhD students. She specialises in public food policies, food security and sustainable food in the Mediterranean region. Her work was rewarded with the “Young Researcher Award” of the Languedoc Roussillon region in France in 1994 and with the “*Médaille Vermeille*” from the French Academy of Agriculture in 2008. She has published 27 books and 50 articles or chapters of books and has given over 100 lectures. In the last ten years she has taken part in the VISION 2020 initiative of the International Food Policy Research Institute (IFPRI), coordinating several parts of projects and sometimes all of the ten national or European projects.

Giulia Palma has a BSc and MSc in sociology from La Sapienza University of Rome (Italy), as well as a MSc from the MAI-Montpellier (CIHEAM-MAIM), specialising in Regional Development and Project Evaluation. She worked for two years in the Nutrition Department of the FAO headquarters in Rome (Italy) preparing and finalising developing countries’ nutritional profiles for web publication. In her present position as research assistant at the

MAIM, she is involved in several projects covering such topics as food behaviour analysis in populations and the evaluation of a national health programme based on nutrition.

James Ramsay joined the European Food Safety Authority (EFSA) as a Communications Officer in 2011 where he is involved in planning and drafting communications materials for the Authority's various scientific and corporate outputs. After graduating from the University of Birmingham with a degree in Hispanic Studies, James Ramsay spent four years working for the UK subsidiary of Media Consulta, a large independent communications consultancy, where he eventually assumed the role of UK Country Manager. Thereafter, he worked as an Account Director for a London-based PR agency specialising in public and voluntary sector communications and, immediately before taking up his post at EFSA, as a freelance consultant for two large European energy trading exchanges. James is a member of the Chartered Institute of Public Relations (CIPR).

Joan Reguant-Aleix is Advisor to the Mediterranean Diet Foundation in the cultural heritage field. As a professional sociologist and architect, he is a Conservator and Restorer of Historic Centres and Monuments (University of Barcelona), and a specialist of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM). He has a degree in cultural policy and cultural management (University of Barcelona) and is currently studying land management, landscape and environment (Open University of Catalonia). He was the co-founder and President of ICOMOS Andorra (2000-2007), Co-director for Spain of the CORPUS Project (European Commission-MEDA-Euromed Heritage) and co-author of the book entitled *Arquitectura tradicional mediterránea* (Traditional Mediterranean Architecture) (2002). He has served as an advisor, director or coordinator of several applications for World Heritage and Intangible Heritage of Humanity nominations, and, in particular, acting through the Mediterranean Diet Foundation he was in charge of the technical transnational coordination of the application for the inclusion of the Mediterranean Diet on UNESCO's Intangible Cultural Heritage list (2010). He has taught college courses in the areas of cultural heritage and landscape and is the author of several publications, articles and papers in the cultural heritage field. He is currently a member of the Cultural Heritage Advisory Council of Andorra.

Catherine Rivoal trained as a journalist and worked for various media (press, television, radio, Web) for several years before entering the communications field, where she works for various economic sectors either within major groups or as a freelance journalist (aeronautics, energy, etc.). It was through this activity that she joined the French ministry of agriculture in 2002 before devoting her attention to forecast studies connected with globalisation and international relations. She now works on international forestry affairs but is still a freelance writer regularly publishing articles in specialised journals.

Francisco Sensat studied commerce at the School of Advanced Commercial Studies and trained as an olive oil technician at the School of the Olive Oil Industry of the Catalan Agricultural Institute in San Isidro, Barcelona, followed by a senior management programme at the IESE Business School in Madrid. His professional activity has been linked to the olive oil sector from the outset when he began in the family company G. Sensat and Sons S.A. and then in the Koipe Group. He was the President of the Spanish Association of Olive Oil Exporters (ASOLIVA) from 1975 to 2002 and President of the European Union Federation of Olive Oil Industries (FEDOLIVE) in 1991-1992 and 2001-2002. He chaired the European Interprofessional Committee for the Promotion of Olive Oil, and has been a member of the European Commission Olive Oil Advisory Board from 1986 to 2002. He was a member of

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MediTERRA

THE MEDITERRANEAN DIET FOR SUSTAINABLE REGIONAL DEVELOPMENT

- The 2012 edition of *Mediterra* takes the mobilising potential of the Mediterranean Diet as a basis and proposes a multidimensional itinerary involving sociodemographics, health, ecology, enterprise, geo-economics and citizens' initiative.
- Consumers in the countries of the Mediterranean Basin have progressively changed their dietary practices as they have gradually become caught up in the dynamics of urbanisation and the globalisation of agricultural trade. They are adhering less and less to the Mediterranean Diet, despite the fact that it is the basis of their identity and one of the major assets of the region. Pressures on natural resources and the emergence of new private actors are compounding the complexity of diet-related issues.
- Already the subject of widespread sociocultural and scientific debate and research, the Mediterranean Diet merits reconsideration from the political point of view given the growing awareness of the strategic dimension of agriculture and the crucial role played by food production in the stability and development of societies. This diet, whose health-promoting virtues are widely recognised and which UNESCO has now listed as part of the intangible cultural heritage of humanity, is now raising questions in the fields of environmental responsibility and political action to promote greater regional cooperation.

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