

PLANT PRODUCTS

MEDITERRANEAN SPECIALITIES

At the heart of Mediterranean agriculture for centuries, the olive, wheat and the vine remain the essential pillars of agricultural economies in the basin, along with fruit and vegetables.

A THOUSAND YEARS OF OLIVES AND OLIVE OIL

The olive tree is the emblem of the Mediterranean, so much is it linked to its climate and its history. It spread throughout the region thanks to the progressive establishment of the Mediterranean climate, some 10,000 years ago. Its domestication probably took place in what is now Syria, and was spread by the Phoenicians to North Africa and then by the Greeks to the northern Mediterranean, especially Provence and Italy. It spread further under the Romans, as each conquered territory had to grow olives and vines. During the imperial period, some provinces, Baetia (Andalusia), Africa (Tunisia) and Apulia (Puglia) even specialised in oil production. After many centuries marked by variations in the area under olive cultivation, primarily in line with the growth in the olive oil trade, olive growing expanded again in the contemporary era, especially in the north Mediterranean basin (Andalusia, Castile, Apulia and the Peloponnese). This was linked to demographic growth, the major boom in trade and industry and the development of transport infrastructure. From the 1960s onwards, olive growing developed in Syria, Morocco and Tunisia, while some northern regions (Castile, Ebro) started rooting up olives trees, due to the loss of competitiveness related to the high costs of harvesting.

The olive is now grown around the world, in China, Australia, the United States, Argentina and South Africa, thanks to its proven nutritional and health benefits. However, the Mediterranean region still concentrates the

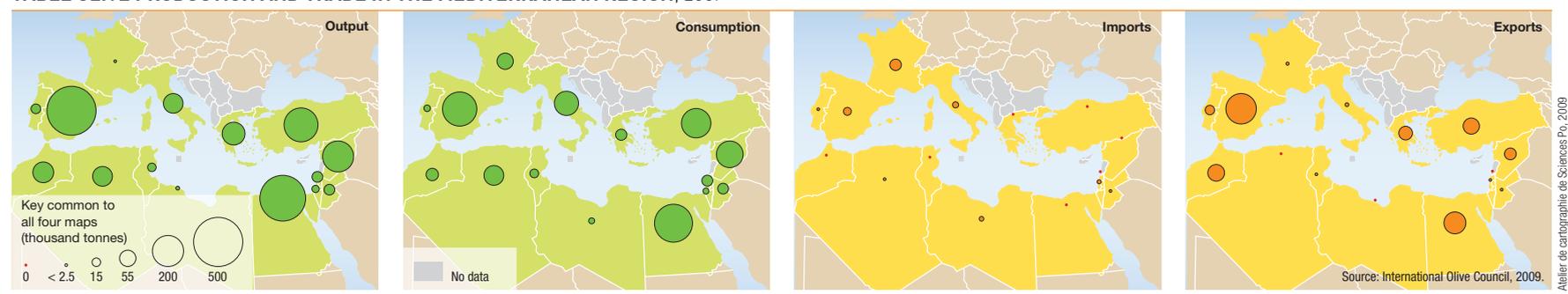
bulk of world olive plantations. The agro-climatic conditions make it a preferred zone with a warm climate, strong luminosity and light, stony soils which suit the physiological and anatomical qualities of the olive tree, namely its large roots, foliage and summer dormant period. On the other hand, its susceptibility to cold (it freezes between -10°C and -13°C, makes it less suitable to more northern regions of the basin, just as its lack of resistance to excessive aridity excludes the desert zones of the Near East or the Sahara. The area under olive cultivation, some 8 million hectares, is chiefly devoted to the production of olive oil, which is more profitable than the production of table olives which still have to be harvested by hand which restricts its growth. With 2.3 million hectares, Spain, where Andalusia alone accounts for 60% of the country's olive cultivation, takes top spot both in the Mediterranean and the world. It is followed by Tunisia, with over 1.6 million hectares, half of which are in an area between Sousse and the south of Sfax. Then comes Italy, where the Apulia region, Sicily and Calabria account for some 60% of the area under olive cultivation. This phenomenon of concentration of olive growing can also be seen in Greece, the fourth country in terms of area: the Peloponnese and Crete account for 60% of the country's olive-growing area. Among the SEMC, Turkey is the leading producer, where over 70% of the cultivated area is on the Aegean coast. It is followed by Syria, where olive growing is prominent in the Aleppo region and along the Mediterranean coast.

Concentrated local production of olives. Spain, Egypt, Turkey, Syria and Greece are the leading producers of table olives around the Mediterranean since these five alone provide almost three quarters of world production. Especially

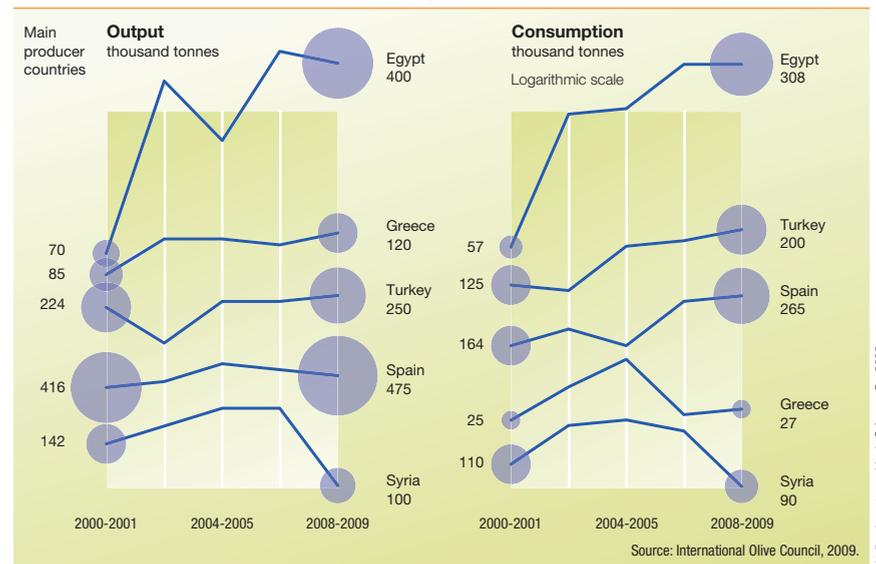
remarkable is the growth in Egypt (+500% between 2000 and 2008) the result of a clear political will, with the creation of basic infrastructure in development zones (roads, electrification...), sales of land to olive growers at low prices, tax exemptions for olive growers, technical assistance for estates, etc. Syria, on the other hand, experienced a fall in production of some 30% over the same period, apparently linked to an unfavourable climatic environment. Production also rose between 2000 and 2008 in the Maghreb countries, Portugal and Palestine, but output volumes remain low. Mediterranean olive production is mostly destined for local consumption since olives form an important part of the local diet. While a considerable proportion of olives are exported from Portugal and Morocco, exports from other countries are low, including from the major producers, such as Spain, which only exports about 35%. Egypt is now the biggest consumer of table olives in the region in terms of volume consumed, but ranks only third in per capita volume per inhabitant, behind Turkey and Greece, although consumption tripled between 1992 and 2005. Per capita consumption held steady in Algeria, Jordan, Tunisia, Turkey, Spain, France, Greece and Italy. It showed a downward trend in certain countries: between 1992 and 2005, an Israeli's consumption fell to one third, that of a Syrian, Moroccan and a Portuguese fell by half due to urbanisation of life styles, as olive consumption was rather based on family production.

Competitive advantage globally. Spain, Italy, Greece, Turkey, Tunisia and Syria, in descending order, are the biggest olive oil producers in the Mediterranean region and also the world, since they concentrate 88.5% of world production, with Spain providing almost half. The two biggest

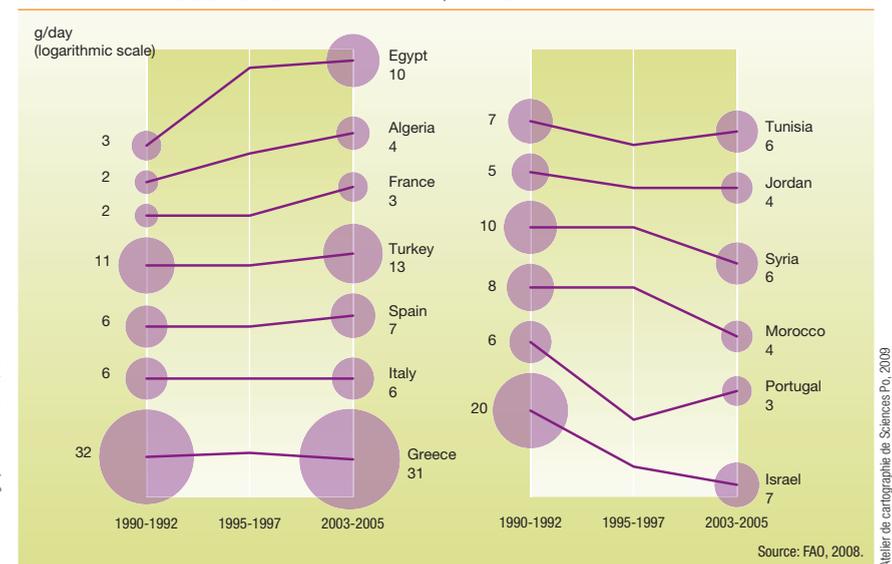
TABLE OLIVE PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION, 2007



OLIVE PRODUCTION AND CONSUMPTION, 2000-2009



PER CAPITA TABLE OLIVE CONSUMPTION, 1990-2005



PLANT PRODUCTS MEDITERRANEAN SPECIALITIES

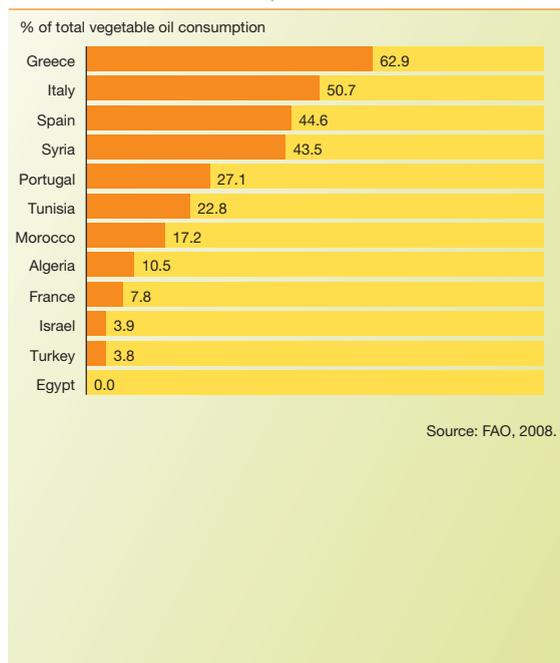
producers (Spain and Italy) recorded a sustained increase in production from 2000 to 2008. Apart from the increase in their area under olive cultivation, encouraged by EU aid, and increases in the price of olive oil, there was also an increase in productivity related in part to EU support, which is a factor in investment. The improvement in yields per hectare is the result of improved mastery of the technical aspects of olive growing, replacing old trees with new and increasing the amount of irrigated land. The other countries' production remained fairly stable. Only Tunisia, famously, saw a marked increase in its production.

Most of the olive oil produced in the region is destined for the local market. Italy, Spain and Tunisia have the capacity to export. Surprisingly, it is the two largest producers, Italy and Spain, which import most oil, in part because they re-export the imported oil. Italy, for example, imports some of the Tunisian oil in bulk to sell it on with a higher added value. But if Spain and Italy import oil, it is also because of their high consumption.

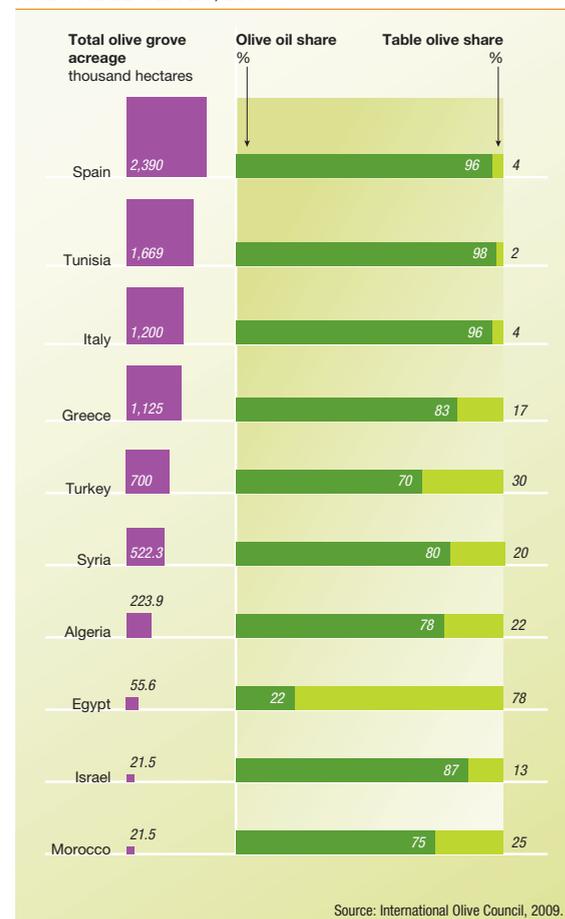
Per capita consumption of vegetal oils declined between 1990 and 2005 in Algeria, Egypt, Greece and Portugal, while it increased in France, Israel, Italy, Syria, Tunisia and Turkey, and remained stable in Spain and Morocco. In this contrasting panorama, per capita olive oil consumption increased everywhere except in Greece where it declined and in Algeria, Spain, Morocco and Turkey, where it was unchanged. However, the share of olive oil in total consumption of vegetal oils by Mediterranean people is still low. It is close to 50% in only four countries (Greece, Spain, Italy and Syria). And French consumption is still very low compared with other oils, despite promotion campaigns. The product is observed to be totally absent from the diet

of Egyptians who nevertheless consume large quantities of table olives. The vegetal oils most consumed in the region are sunflower oil, rape oil and soya oil. This situation can be attributed to the lower price competitiveness of olive oil especially due to the high cost of labour at harvest time. This low price competitiveness forces the olive-growing industry to promote the nutritional qualities of olive oil and the lands it comes from.

OLIVE OIL CONSUMPTION, 2005

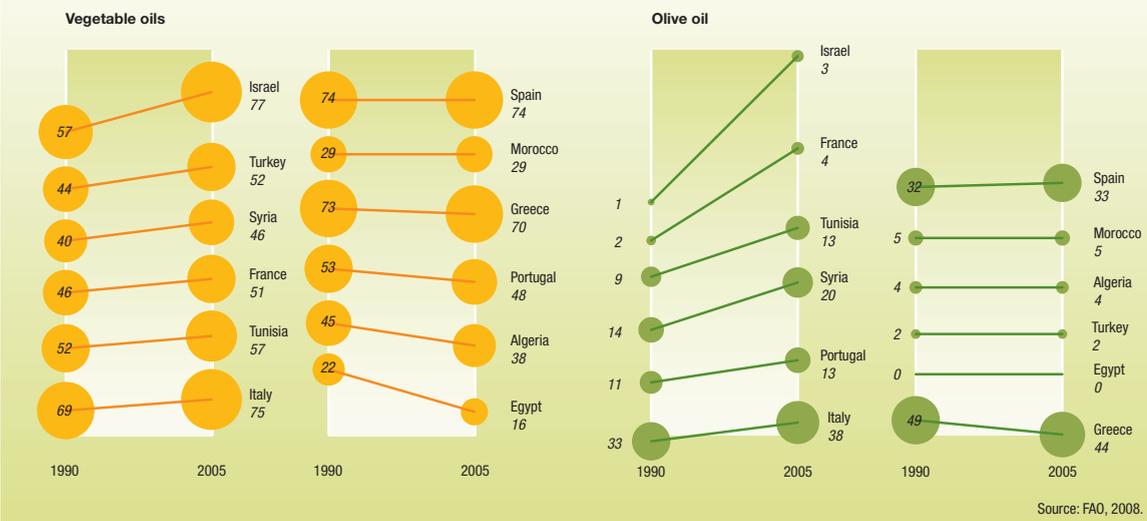


ACREAGE ALLOCATED TO OLIVE OIL AND TABLE OLIVES, 2005



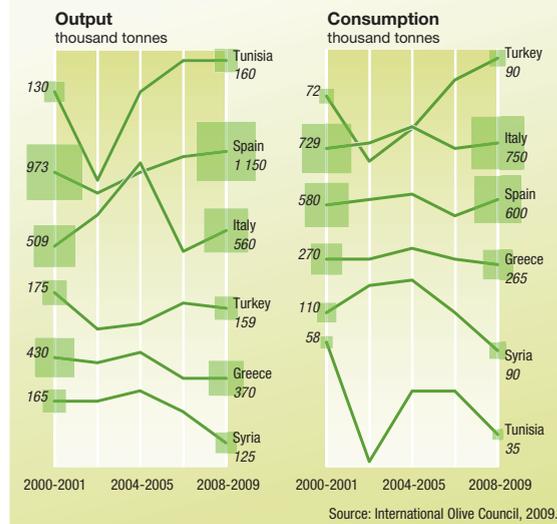
TREND IN VEGETABLE OILS AND OLIVE OIL CONSUMPTION, 1990-2005

g/caput/day (logarithmic scale)

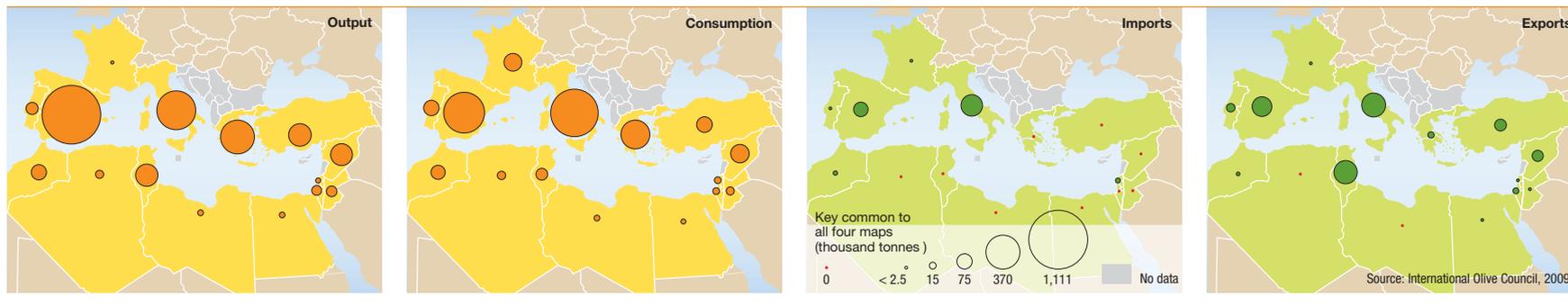


OLIVE OIL PRODUCTION AND CONSUMPTION

Main producer countries (logarithmic scale)



OLIVE OIL PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION, 2007



EMBLEMATIC WINES AND VINEYARDS

To understand vine-growing, you have to see it in the context of the history of Mediterranean civilisations, which illuminates its various facets – symbolic, cultural, technical or economic. It means distinguishing production of wines and alcoholic beverages from that of fresh and dried grapes. In geographical terms, the vine (*vitis vinifera*) is associated with the Mediterranean in the same way as cereals and the olive. Like these two crops which symbolise the Mediterranean, the conquest of the Mediterranean by wine-growing is linked to the domination of certain civilisations. Originating in the Caucasus, cultivation of the vine was spread throughout the Mediterranean basin by the Phoenicians and, above all, by the Greeks, who made the amphora of wine a currency of exchange for their trade. After Greece, which was defined as a civilisation of the vine, the long journey of vine cultivation continued, despite periods of setback. Among the periods of expansion can be included the Roman era, when it was implanted in Gaul, primarily to meet the needs of the legions but also to make wine a currency of exchange in the slave trade and trade in goods. In the Middle Ages, the monasteries of Europe encouraged the planting of vines in the North and the development of vine growing and wine making methods, whilst with the spread of Islam, vines for wine-making tended to decline. With the industrialization of the northern shores of the Mediterranean and the development of the railways, wine production shifted from the consumer regions, such as the Paris basin, to the French Mediterranean regions, making it by far the largest vineyard in the world, and then to the Maghreb, then colonised or under a protectorate, to the point where Algerian vines represented one third of French production.

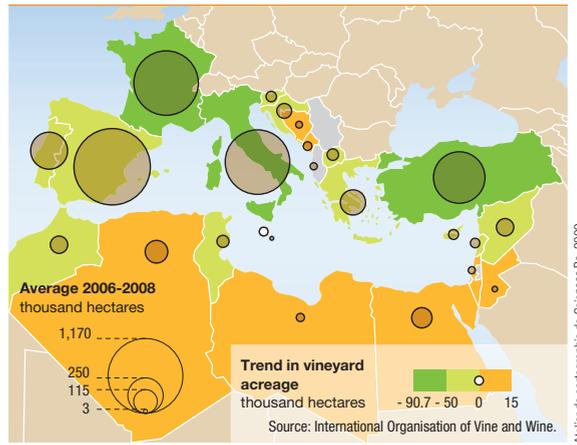
Thus, the wines with a strong alcohol content imported from Algeria, so-called “medicinal wines” allowed producers to blend them with the low alcohol wines, produced in the south of France, selling them for over a century as the table wine of manual workers in the urban concentrations and mining areas. With the decline in physical labour and changes in eating habits, the consumption of these “rough wines” collapsed during the glorious thirties creating a major distortion between production and consumption of wine. The European Community then took some major structural measures to reduce wine consumption and develop products better suited to the new markets. Wines from defined regions then generally replaced the so-called table wines, marking the end of the complementarity between the two shores of the Mediterranean.

World domination. With the detachment from wine-growing in the Maghreb, the bulk of Mediterranean vine cultivation became established on the northern shores of the Mediterranean and in the Balkans. The area under vines in the Mediterranean countries (including the Balkans) is 4.2 million hectares, or some 53% of the world area (7.7 million hectares and over half the world production of wines (145 million hectolitres out of some 270 million). The Mediterranean region also provides one third of world production of fresh and dried grapes. Spain, France and Italy stand out with 1.1 million hectares for the first, and some 850,000 hectares for the other two. These countries are both the largest producers, consumers and exporters of wine. Then comes Turkey with over 500,000 hectares, mostly devoted to production of fresh and dried grapes. Lastly, Portugal, with 248,000 hectares and Greece with 115,000 hectares should be mentioned. Although the vine-growing

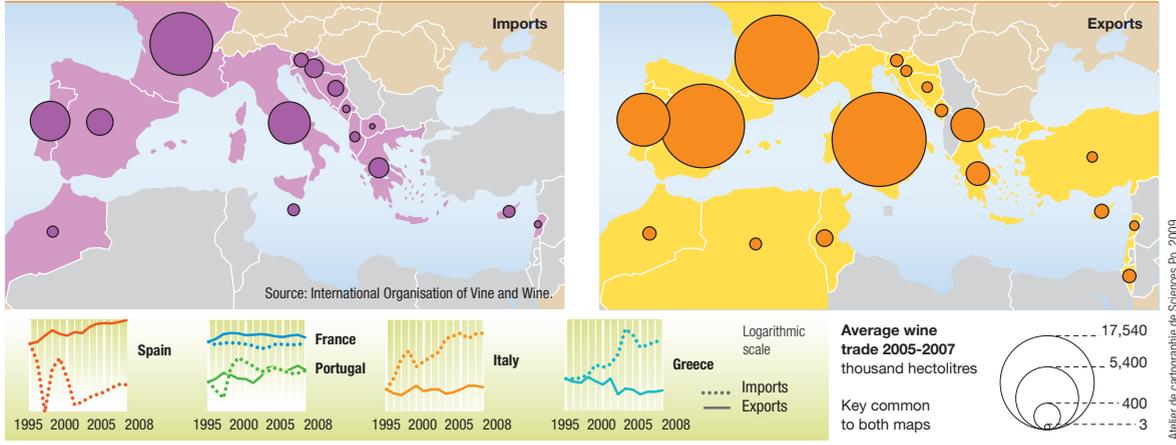
areas of the islands (Cyprus and Malta) do not represent a significant proportion of the global area and production, vine cultivation is an important part of their agriculture.

Competition and globalisation of tastes. While wine production has stabilised overall in the world, there has been a real change in markets for wine with the rising power of new players: North and South America, Australia and South Africa. These new wine-growing areas are generally founded by large global groups and supported by brands and a more standardised range of wines produced to meet the “expectations” of the market. At the same time, per capita consumption has declined sharply in the traditional wine-growing countries, even though it is still considerable in France, Italy and Spain (54 litres per year per person in France, 44 in Italy and 29 in Spain). In the Mediterranean European countries, there has been a shift from a pattern of regular consumption to a more occasional or festive consumption pattern, and this trend has led to the search for wines of better quality with clearer identities. While wines with a geographical designation are sought, named wines (appellation specific to a firm) and wines from specific grape varieties are gradually taking their place alongside them. On the other hand, mass wines, linked to industrialisation, are disappearing. In an increasingly competitive market where consumers’ tastes are more demanding, wine producers must both resist the competition from the new countries in international markets and also that in their own regions. The Mediterranean European countries are still big exporters, especially Spain, France and Italy. As regards imports, France is by far the biggest importer in the Mediterranean. However, Italian imports are increasing with a view to re-export, as in the case of olive oil.

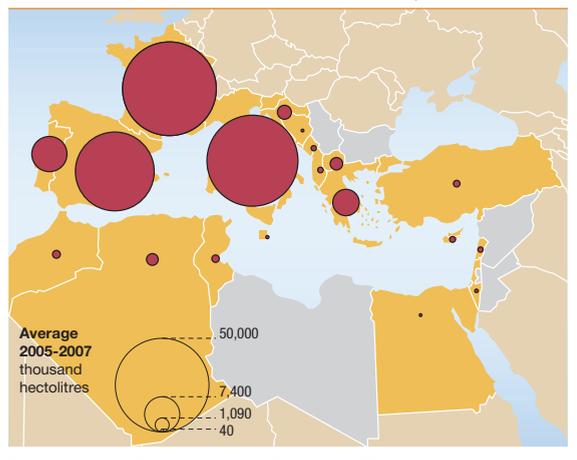
VINEYARD ACREAGE, 2005-2007



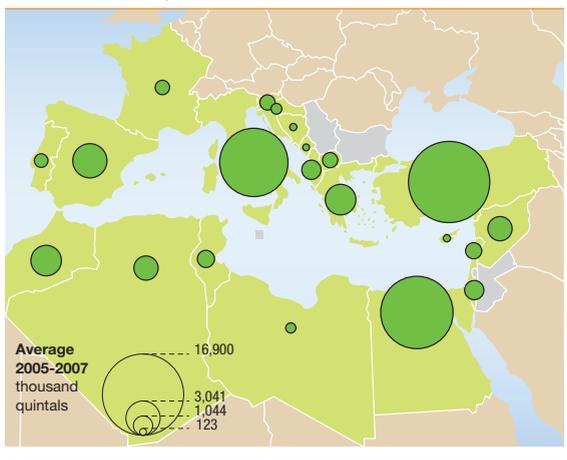
WINE TRADE IN THE MEDITERRANEAN REGION, 2005-2007



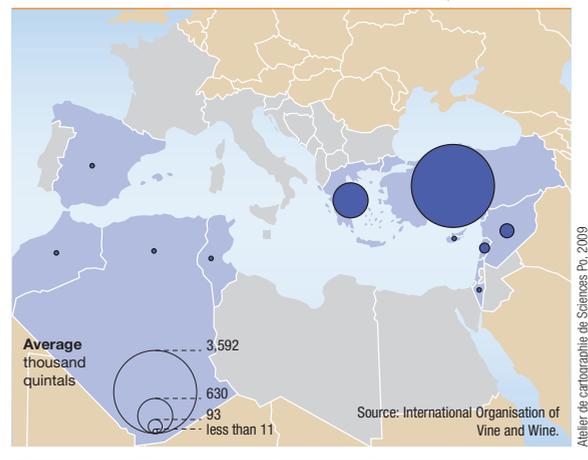
WINE IN THE MEDITERRANEAN REGION, 2005-2007



FRESH GRAPES, 2005-2007



RAISINS IN THE MEDITERRANEAN REGION, 2005-2007



Grapes. In the East of the Mediterranean basin, peoples who embraced Islam have progressively dropped wine growing in favour of the production of fresh or dried grapes reputed for their nutritive qualities. The Arabs even exported their products to Europe which discovered or re-discovered the grape during the crusades. This historical and climatic geography probably explains the persistence of vines in the countries of the Levant. Currently, production of fresh grapes is rising steadily, from 45,000 to 65,000 quintals between 1995 and 2008. Although production of grapes exists in all the wine-growing countries, especially Morocco, Spain, Syria, Greece and Algeria, three countries stand out clearly: Turkey, Egypt and Italy. In the dried grape market, Turkey dominates with some 370 tonnes, while Greece, the second largest producer, famous for its currants, has seen its production fall from a peak of 90 tonnes in 1995 to 60 tonnes today. Syrian and Lebanese production should also be mentioned.

CEREALS IN THE CRADLE OF THE MEDITERRANEAN

If rice is the cereal of Asia, maize that of South America, wheat is certainly the Mediterranean's, at least because of its origin and the place it still holds in food. From Neolithic times, the wild cereals which grew in the oak forests of the mountain forelands of the Taurus and Zagros, within the borders of modern-day Turkey, were harvested before being sown in fields close to villages. Barley, einkorn wheat (*Triticum monococcum*) and emmer wheat (*Triticum diococcum*) are thus the oldest cereals to be cultivated, around 8000 BC. It seems that this emmer wheat was the origin of the durum wheat which appeared in Egypt in the first millennium BC and which is now eaten in the form of semolina or pasta. Soft wheat, which is used to make bread, is the result of a

crossing of durum wheat with a wild grass, probably unintentional. With the domestication of wild species, cereals thus became the staple food of the Mediterranean basin. In the SEMC, the part consumed directly is still a high proportion of the food ration, while it has recently declined in the North due to socio-economic change, while increasing in indirect form with the development of livestock breeding which is very greedy for cereals.

A North-South imbalance. The largest Mediterranean cereal producers are in the northern part: France, Turkey, Italy and Spain have accounted for over 65% of Mediterranean production since 2000. The great Paris basin, the plain of the Po, Castile, the great Anatolian plateau are among the major producer regions. With over 10% of regional production, Egypt is the leading producer country on the southern shore, far ahead of Morocco, which produces less than 3%. Looking at wheat, the Mediterranean cereal *par excellence*, the rift between the North and the SEMC is even more accentuated. The same four countries come top, this time representing just over 68% of production. The leading country on the southern shore, Egypt, only accounts for just under 8% of production, while the top Maghreb country, Morocco, produces less than 4% of the region's wheat.

The larger arable area in the North explains this difference between the two shores of the Mediterranean. Higher rainfall in the North, wider use of irrigation and inputs (fertilisers and pesticides) and better technical and organisational mastery of production also allow producers in these countries to achieve high yields (for wheat, they are not only 3.5 times higher than those of the Maghreb countries but also more consistent). Agricultural policies play an important role. Cereals cultivation is supported by the CAP, while Turkey

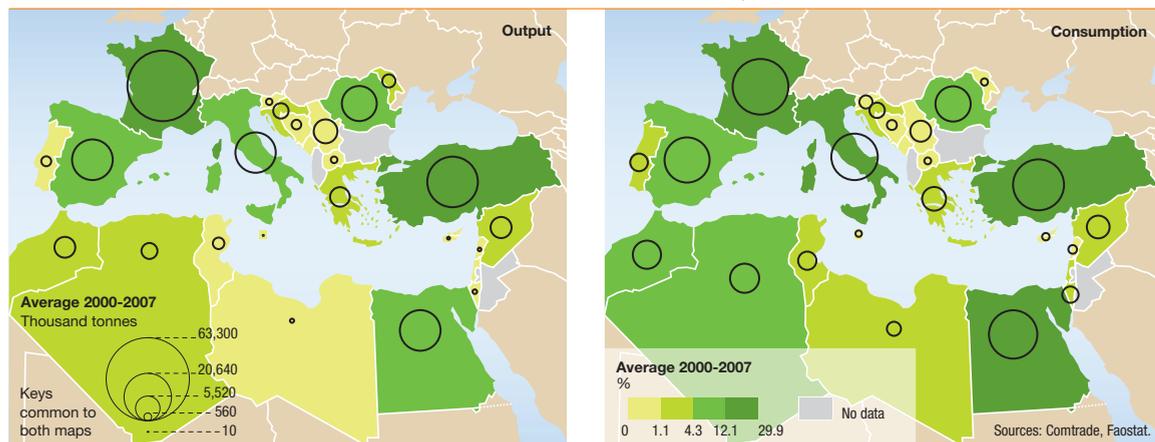
puts it at the core of its agricultural development. On the other hand, the SEMC (especially the Maghreb countries) made the development of agricultural products for export the priority. However, it should be pointed out that Syria more than tripled its wheat yields during the 1990s through an ambitious programme of irrigation of cereal fields. The same applies to Egypt, where an irrigation policy allowed yields similar to those of the most competitive countries to be attained, but this is confined to a region covering the Nile (note that yields per hectare are the cumulative result of two or three harvests a year).

Massive consumption. Among all the regional groups, the SEMC account for just over 42% of cereals consumption and over 47% of wheat, compared with 52% and 48% respectively for the countries of the European Union. Across the Mediterranean region, the level of self-sufficiency in cereals is almost 100%, but this is because France is a major provider. In wheat, the level is only 70%. In the period 2000-2007, the level of dependency on wheat imports of many Mediterranean countries has even risen to over 50% today. Among the dependent countries, only Egypt and Syria have managed to reduce their dependency during that period.

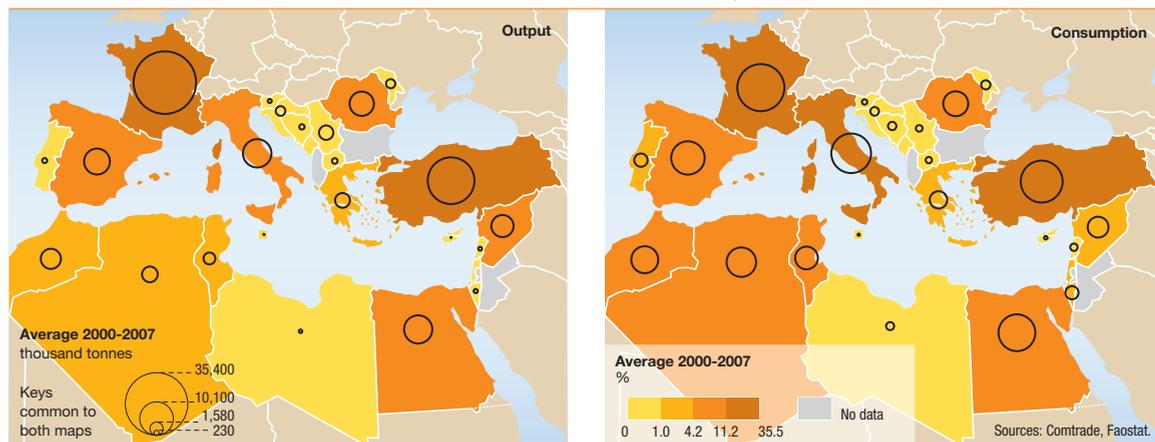
RICHES OF FRUIT AND VEGETABLES

The diversity of agro-climatic conditions in the Mediterranean allows the production of a wide range of fruit and vegetables. For some of them, the Mediterranean is even the chief producer in the world, to the point where they qualify them as Mediterranean products, even if some of them do not originate in the region. This is particularly the case of apricots, almonds, figs, dates, strawberries, hazelnuts, clementines, beans and tomatoes.

CEREAL OUTPUT AND CONSUMPTION IN THE MEDITERRANEAN REGION, 2000-2007



WHEAT OUTPUT AND CONSUMPTION IN THE MEDITERRANEAN REGION, 2000-2007

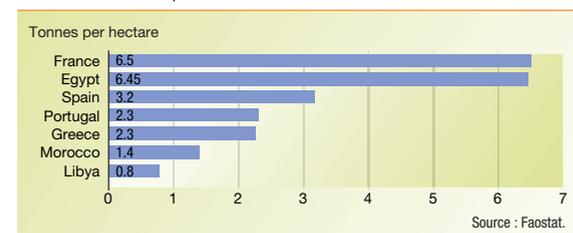


TURKEY AND THE DEVELOPMENT OF CEREALS

During the period 1950-1990, Turkey brought about a cereals revolution in three stages. In the first period (1950-1965), rapid mechanisation allowed a spectacular growth in the cultivated area. The large-scale introduction of new Mexican varieties and their spread marked the start of the second stage (1966-1975) which would result in a shift from dependency to self-sufficiency. The introduction in 1975 of a "technological package" suited to the conditions of dry cultivation of wheat in winter on the Anatolian plateau, the wheat loft of Turkey, was the third stage of the cereals revolution. This semi-arid type zone alone accounts for almost half the area under wheat cultivation in the country. The technological package seeks, in particular, to increase the moisture available for wheat cultivation by improving ploughing to reduce evaporation of water from the soil.

From Yavuz Tekelyoglu, "L'agriculture turque : entre puissance et adaptation", in Pierre Blanc (dir.), *Du Maghreb au Proche-Orient : les défis de l'agriculture*, Paris, L'Harmattan, 2002.

WHEAT YIELDS, 2000-2006



PLANT PRODUCTS

MEDITERRANEAN SPECIALITIES

Specialisation and concentration. Turkey, Italy, Spain and Egypt are the leading producers of fruit and vegetables around the Mediterranean and represent over 65% of total production (by volume) of the zone. Tomatoes are the most widespread product. They account for 20% of production in Italy, 14% in Spain, 31% in Egypt, 35% in Jordan, 26% in Turkey and 15% in Morocco. Grapes have a not inconsiderable share of production, especially in the countries of the North Mediterranean (22% in Spain, 41% in France, 26% in Italy). Citrus fruits occupy an important place in production, especially in Israel (20%), Morocco (15%) and Spain (17%). Despite the diversity of production of fruit and vegetables at Mediterranean level, there is nevertheless a degree of specialisation at country level. Thus, in each of the countries of the Mediterranean basin, some 65% of production (by volume) is covered by five products. This specialisation is found in terms of the two shores of the Mediterranean: while orchard products represent over half the production of the countries of the north Mediterranean (Italy, France, Spain), market gardening is predominant in the majority of the SEMC (over 65% of production in Morocco, Turkey and Egypt).

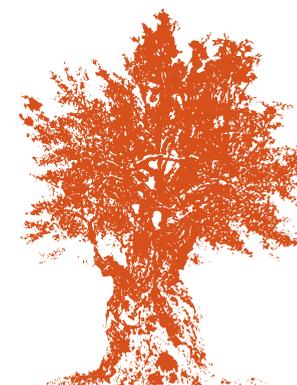
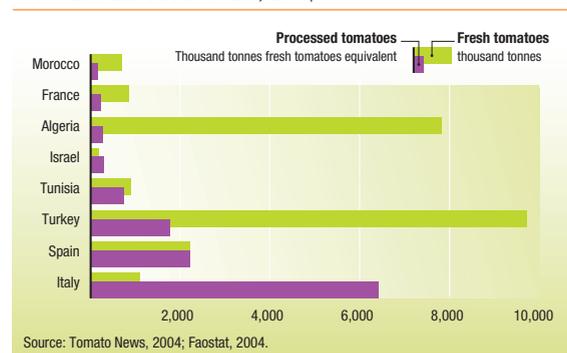
The pre-eminence of domestic markets. In the majority of countries, especially the SEMC, production is primarily destined to supply domestic markets. Turkey exports only 14% of its production, Egypt 13% and Morocco 24%. Exports are thus an important outlet for the production of Spain, France and Israel with 62%, 57% and 33% respectively of production by value. Certain fruit and vegetables are even essentially export products (of which 60% by value go to the European Union). In Spain, 53% of the production of oranges and 72% of mandarins are exported. Similarly, 25%

of Israeli grapefruit, 31% of Moroccan oranges and 20% of Moroccan tomatoes are sold in foreign markets. In the SEMC, production for export is a quite separate branch from products destined for domestic markets. More capitalist and more innovative, this production often comes from larger enterprises which meet the high demands in terms of the phytosanitary and commercial standards of the European market and hyper and supermarkets. This export production is often located in zones separate from that destined for the domestic market, which is seasonal and closer to the major consumer markets. As Mediterranean production of fruit and vegetables consists mainly of perishable products, it is not surprising that the Mediterranean countries export essentially to their neighbouring countries. Thus, the great majority of trade in fruit and vegetables in countries of the Mediterranean zone (53%) occurs within the zone. But following the example of tomatoes, the share of fruit and vegetables destined for transformation should not be overlooked. Italian tomato production and a not

inconsiderable part of Spanish production is largely destined for the manufacture of canned and bottled products. As tomatoes produced for transformation do not have the same characteristics as tomatoes destined to be sold fresh, the two branches of production are completely separate in those countries.

Although Euro-Mediterranean exports of fruit and vegetables are primarily from the EU countries (78% by value), they are nevertheless a very important sector for the SEMC. Fruit and vegetables represent over half of agricultural exports from those countries and are a not inconsiderable source of revenue. This may shed light on the debate concerning the opening of the European market to products from the SEMC in the framework of the Union for the Mediterranean. In the South, improving access to the EU market for the principal export products is a major challenge, while in the North, producers fear an exacerbation of Mediterranean competition in a sector which is very vulnerable to crises and which receives little support from the CAP. ■

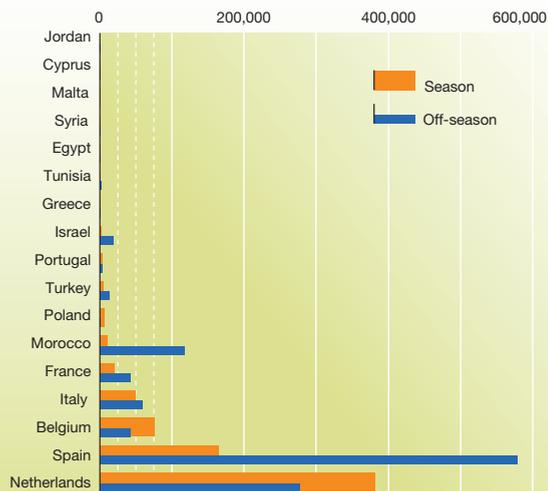
PROCESSED TOMATOES, 2004



SEASONAL AND COUNTER-SEASONAL

The tomato trade is highly seasonal. Thus, while trade in tomatoes within the EC essentially takes place during the "natural" period of production, i.e. during the summer, European imports from countries of the South Mediterranean (especially Morocco) consist primarily of counter-seasonal fruit. However, the profitability of production structures (glasshouses, ripening platform...) explains why production and thus European exports occur all the year round. This is especially true of Spain, where the volumes produced counter-seasonally far exceed those produced in summer.

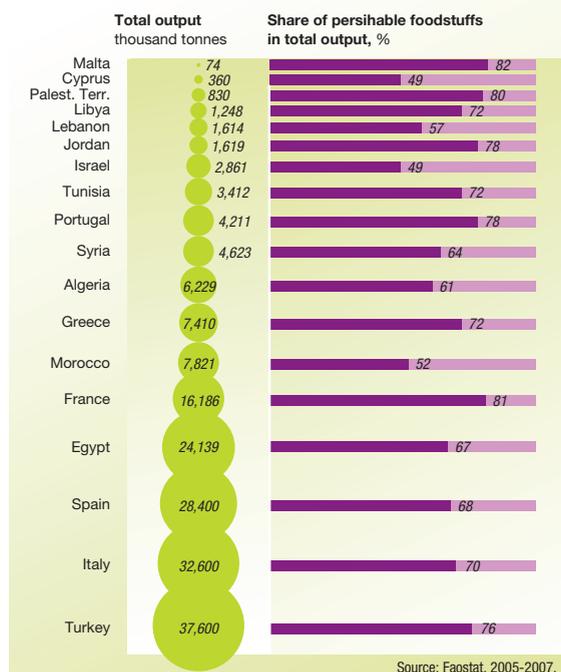
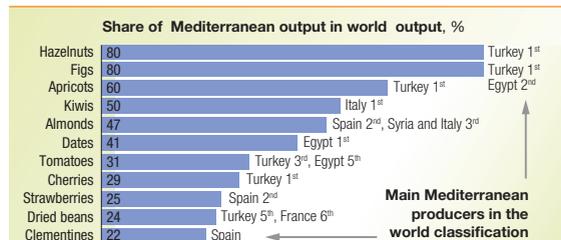
Tomato exports to EU countries by season
thousand tonnes



Sources: Tomato News, 2004; Faostat, 2004.

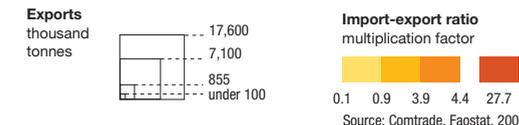
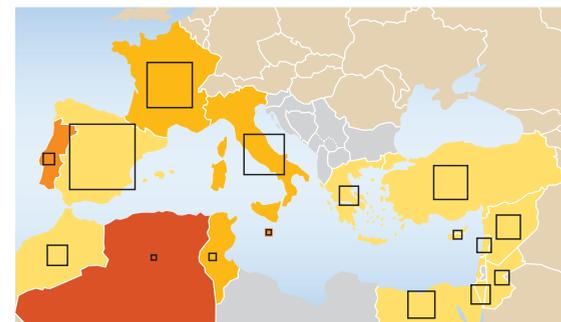
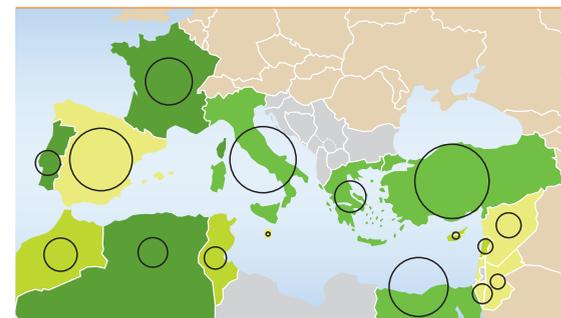
Atelier de cartographie de Sciences Po, 2009

FRUIT AND VEGETABLE PRODUCTION



Source: Faostat, 2005-2007.

FRUIT AND VEGETABLE PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION



Atelier de cartographie de Sciences Po, octobre 2009

Atelier de cartographie de Sciences Po, 2009