



CIHEAM

International Center for Advanced
Mediterranean Agronomic Studies

SUSTAINABLE FOOD SYSTEMS



INTRODUCTION

Established in 1962, the CIHEAM (*International Centre for Advanced Mediterranean Agronomic Studies*) is a Mediterranean Organisation that strives to improve sustainable agriculture and fisheries, to ensure food and nutrition security and to contribute to the development of rural and coastal territories. The actions of the CIHEAM are based on a bottom-up collaboration approach and are problem-solving oriented, in relation with the special needs of the countries. The CIHEAM is recognised for its expertise in the management of international cooperation and research projects as well as for its offer of postgraduate and professional training.

The CIHEAM is currently implementing different activities related to Sustainable Food Systems (SFS) in the framework of its Action Plan 2025 for the Mediterranean (CAPMED 2025) in line, among others, with the following **UN Sustainable Development Goals (SDGs)**



In this context, the CAPMED 2025 intends to propose solutions to support transition and encourage multilateral initiatives able to bring countries, private and public stakeholders to work together around themes that are at the core of SDGs.

Furthermore, the CIHEAM is directing its training, research and cooperation activities towards the sustainability of food systems, going beyond the traditional limit of agricultural production. In fact, the study of food systems (**Box 1**) takes consideration of all the components of the food chain (not only agricultural production, but also the processing, distribution, marketing and consumption of food) and allows to better understand the main challenges to be addressed in order to ensure food and nutrition security. At the same time, this approach allows the analysis of agricultural productivity, the impacts on natural resources (e.g. water, land, biodiversity), distortions in agro-food markets, the potential for food production and consumption, income generation, well-being and employment.

As defined by the High Level Panel Expert in Box 1, in general, the development of Sustainable Food Systems could contribute to improving the development potential of the poorest rural populations, the most innovative food supply chains based on sustainable production, integration and equity between the various actors in the food supply chain, the promotion of sustainable diets and the progressive integration between agricultural and environmental policies.

Box 1. Definitions of key concepts: food system, sustainable food system and diets.

Food system: A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food and the outputs of these activities, including socio-economic and environmental outcomes. **Source: HLPE (2014).**

Sustainable food system: A sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. **Source: HLPE (2014).**

Sustainable diets: Sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy while optimizing natural and human resources. **Source: FAO (2010).**

Sustainable Diets (Box 1) represents another contribution to the sustainability of food systems. The promotion of such diets through consumer outreach activities, focusing on agro-diversity as a key factor, is an important step towards achieving sustainable production and consumption. Biodiversity is also important to ensure that all populations have access to good quality food in sufficient quantities for a healthy and active life. It also ensures a balanced nutritious diet, which is particularly important for rural Mediterranean communities with limited access to markets. Genetic diversity can make a significant contribution to population livelihoods in terms of nutrition and health, empowerment of marginal population groups, ecosystem health and culture.

The sustainability of the food chain is strongly influenced by consumer choices, although the best strategy to ensure the transition to more sustainable food systems, with impacts also on agriculture and food production, relies on the promotion of more sustainable consumption patterns and eating habits. In a market-driven economy, what is produced and how it is produced is largely dependent on consumer preference.

The sustainability of food systems is an important prerequisite for achieving not only food and nutrition security but also social, economic and environmental sustainability in the Mediterranean area. Unfortunately, however, the Mediterranean is also the place where sustainability issues such as climate change, population growth, loss of biodiversity, pressure on natural resources, soil erosion, high dependence on fossil fuels, cheap/indecent work, scarcity and pollution of water resources, migration, high dependence on imports are concentrated and amplified. The unsustainability of food systems in the Mediterranean, which is at the same time a cause and an effect of the challenges related to sustainability in the area, contributes to the erosion of the cultural food heritage of the region, which represents the real reason why the Mediterranean Diet (MD) was inscribed in 2010 in the representative list of the intangible cultural heritage of Humanity of UNESCO.



BACKGROUND

Since 2010, the CIHEAM has been implementing an ambitious, multifaceted programme on the sustainability of food production and consumption, with a focus on the sustainability of food systems and diets in the Mediterranean area, using the MD as a case study. Through a multidisciplinary methodological approach based on appropriate indicators, the MD has been analysed to assess the sustainability of food patterns in the Mediterranean during several international workshops and meetings (Rome 2010, Bari 2011, Malta 2012, Milan 2015, Rome 2016, Bari 2017). It was also agreed, inter-alia, that a strategy to strengthen the sustainability of consumption patterns in the Mediterranean should aim to increase adherence to the Mediterranean dietary pattern through awareness campaigns and food education especially among young people. In this regard, during Expo Milano 2015, the CIHEAM launched the Med Diet EXPO 2015 Call as well as the Med Diet 4.0, that are innovative tools to highlight the multiple benefits of MD (not only healthy and nutritional, ones but especially environmental, social, economic and cultural) to promote it as a sustainable food pattern.



As a result of the work carried out and the knowledge acquired, attention was shifted to an MD pattern intended not only as a healthy diet, but above all as a sustainable diet that reduces the impact on the overall ecosystem by raising social, cultural and economic awareness. This approach is based on four aspects of sustainability (cf. Med Diet 4.0) :

- 1) Reduced environmental impact and richness in biodiversity;
- 2) Proven benefits on health and nutrition;
- 3) High socio-cultural values;
- 4) Positive economic returns on the community.

The CIHEAM therefore considers the MD as a lever to strengthen the sustainability of production and consumption patterns in the Mediterranean; based on seasonal, typical and local products, and shared by the actors of the food chain, it allows establishing and strengthening the links between production and consumption. Promoting the MD, based on the concept of frugality and sobriety, contributes to the reduction of food waste especially in the households. Food waste and loss is one of the greatest challenges currently faced by humanity and its reduction is key to reducing the environmental footprint of current food systems. Priorities 1, 2 and 3 of **the CIHEAM Strategic Agenda (CAPMED 2025)** advocate the fight against all forms of waste (including knowledge) precisely because the reduction of food/natural resources/energy waste and loss is an important prerequisite for achieving environmental sustainability, ensuring the sustainability of natural resource management and helping to mitigate climate change.

Nevertheless, to allow food systems in the Mediterranean to ensure sustainable food and nutrition security to all, it is important to also take account of food safety and quality, access to food, population mobility and migrations, animal and plant health, and agricultural markets.

OUR MISSION

In 2019 the CIHEAM decided to create an institutional Working Group on Sustainable Food Systems (CIHEAM WG-SFS) to coordinate objectives and increase synergies **the four Institutes (Bari, Chania, Montpellier and Zaragoza)** working on these areas of knowledge.. By improving coordination and developing common working plans, the CIHEAM expects to provide not only a stronger corporate vision, but also to contribute to the capacity building in the region and better support policy recommendations and priorities defined by national and international organisations.

This important mission is expected to be accomplished with the formulation of concrete solutions through a broad range of activities, including the organisation of Master programmes and specialised training courses for professionals, the participation in international projects, and the support and improvement of coordination between research institutions and networks.



PARTNERSHIPS WITH OTHER INSTITUTIONS & INTERNATIONAL ORGANISATIONS WORKING IN THE FIELD OF SFS

Over the last years, the CIHEAM has developed a strong collaboration with a wide range of education, research and development organisations – national, regional and international – dealing with food systems in the Mediterranean and beyond.

The CIHEAM and the FAO have initiated a cooperation programme on the sustainability of food production and consumption, with a focus on the sustainability of food systems and diets in the Mediterranean area, using the MD as a case study. In this context, different joint initiatives were promoted:

FAO, Bioversity, Ciheam Bari, in the Symposium on *“Sustainable Diet and biodiversity”*. Directions and solutions for policy, research and actions.

**November 2010,
Rome**

**29-30 November,
2011**

CIHEAM-Bari International Workshop, *“Sustainability of diets and food consumption patterns: the Mediterranean Diet as a pilot study”*

International Seminar of FAO and CIHEAM Bari on the Sustainability of Food Systems in the Mediterranean Area. *“Towards the development of guidelines for improving the sustainability of diets and food consumption patterns in Mediterranean Area”*.

**September 2012,
Malta**

**May 2016,
Rome**

Side-Event of FAO and CIHEAM Bari on *“The Mediterranean diet as a lever to improve the sustainability of food systems, production and consumption patterns in the Mediterranean region”*;

On the occasion of the 2016 International Year of Pulses, 1 st World Conference on the Mediterranean Diet, The Mediterranean diet as a lever to improve the sustainability of food systems, production and consumption patterns in the Mediterranean region, within the framework of the 2030 Sustainable Development Agenda.

**July 2016,
Milan**

**13-15 March 2017,
Valenzano (Bari)**

Workshop of FAO; CIHEAM-Bari on *“Voluntary guidelines for the sustainability of the Mediterranean Diet in the Mediterranean Region”*.

During the 2nd MEDForum, the CIHEAM and the FAO launched a Field Research Initiative for PhD students and young researchers participating in the event.

**September 2018,
Sicily**

An example of the multi-stakeholder approach promoted by the CIHEAM in the framework of its activities on SFS. The Conference was organised by CIHEAM-Bari and the Forum on Mediterranean Food Cultures, with the technical support of the FAO, under the auspices of the CIHEAM; UfMS; the Italian Ministry of Foreign Affairs and International Cooperation; the Italian Ministry of Agriculture, Food, Forestry and Tourism; the Italian Ministry of Health; the Sicilian Region; the City of Palermo; IFMeD (International Foundation of the Mediterranean Diet); FENS (Federation of European Nutrition Societies). It was organised in collaboration with CNR, CREA, ENEA, ICAF (International Commission on Food Anthropology), ICARDA, SINU, SFN, SENC, Society for Nutrition Education and Behaviour, CMI (Center for Mediterranean Integration), and many other international and national institutions.

On the occasion of the 2nd World Conference on the Revitalization of the Mediterranean Diet, the CIHEAM, FAO and UfM (Union for the Mediterranean) expressed their interest to develop a joint proposal, as a collaborative effort, for the establishment of a Multi-stakeholder Sustainable Food Systems (SFS) Platform in the Mediterranean, to be defined in its operational inclusive format, for a broader participation and engagement of all interested stakeholders. In July 2019, in the renewed Memorandum of Understanding (MoU) between FAO and CIHEAM, the development of a multi-stakeholder sustainable food systems platform in the Mediterranean, within the framework of the United Nations One Planet SFS Programme was included in the MoU working plan.

Furthermore, partnerships on sustainable food systems have been also developed with the following organisations: *Aix-Marseille University, France; Al Quds Public Health Society, Palestine; American University of Beirut, Lebanon; Chouaib Doukkali University, Morocco; Hasan Kalyoncu University, Turkey; Hebrew University, Israel; Hellenic Health Foundation, Greece; Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE), France; Montpellier Supagro, France; Montpellier University, France ; National Institute of Nutrition and Food Technology of Tunisia; Sapienza University of Rome; Universitat Oberta de Catalunya, Spain; University of Bologna, Italy; University of Malta; University of Milan, Italy; University of Pisa, Italy; IAV-Hassan II; INRA-Meknès : ENSA-Algiers; Polydisciplinary Faculty of Errachidia, Morocco; The Applied Economics Research Center for Development, Algeria, The University of Bejaia - Research Unit (Modeling and Optimization of Systems), Algeria, The National Polytechnic School - Department of Industrial Engineering, Algeria, The research laboratory DEDSPAZA - University of Biskra, Algeria, The Higher Institute of Management of Tunis, Tunisia, Aristotle University of Thessaloniki, Greece, Agricultural University of Tirana, Albania, Horticultural Experimentation Center of Marsillargues, France, France, Olivier Institute, Tunisia, Society for Territorial and Environmental Prosperity-STEP Bulgaria; Universitatea de stiinte Agricole si medicina veterinara cluj napoca, romani; Universidade de Evora, Portugal, Global Research Alliance on Agricultural Greenhouse Gases (globalresearchalliance.org); International Olive Council (IOC); WRAP Circular Economy; Resource Efficiency (wrapglobal.org); Spanish Agency for Food Safety and Nutrition (AECOSAN); Red [REMEDIA](#) Scientific Network on GHG mitigation from the agroforestry sector in Spain; 4 per 1000 initiative (4p1000.org); [Agrotecnio](#) – Centre for Food and Agriculture Research, Spain; [AZTI- Tecnalia](#), Spain; [Technology Platform Food for Life](#) Spain.*

OUR MASTER PROGRAMMES AND SPECIALISED TRAINING FOR PROFESSIONALS

The CIHEAM offers a broad **training programme on sustainable food systems**, which includes several CIHEAM Master of Science programmes as well as several advanced short courses.

CIHEAM BARI

- Master of Science (M.Sc.) on *“Land and Water Resources Management: Irrigated Agriculture”*;
- Master of Science (M.Sc.) on *“Sustainable IPM Technologies for Mediterranean Fruit and Vegetable Crops”*;
- Master of Science (M.Sc.) on *“Mediterranean Organic Agriculture”*;
- Short training course on *“Sustainable Food Systems”* within the M.Sc. on *“Mediterranean Organic Agriculture”* (March 2019);
- Short training course on *“Introduction to the Blockchain for Agri-Food”* (July 2019);
- Advanced specialised course on *“Sustainable development of coastal communities”* (September-November 2019);
- Intensive high-level training course on *“Innovation and youth entrepreneurship in the Mediterranean agro-food sector”* (September-November 2019);
- Training Course on the *“Toolbox on Solar Powered Irrigation”* (November 2019).

CIHEAM CHANIA

Five Master of Science (M.Sc.) on :

- Business Economics and Management
- Food Quality and Chemistry of Natural Products
- Geoinformation in Environmental Management
- Horticultural Genetics and Biotechnology
- Sustainable Agriculture

- Master of Science (M.Sc.): ECODEVA co-accredited with the University of Montpellier (UM) and Montpellier Supagro / l'Institut Agro. Oriented on agricultural - food systems and natural resources management in a sustainable development perspective.

Associated Msc: Economics and Management of the Agricultural, Food and Rural Development.

- Master of Science (M.Sc.): Projects and Public Policies Engineering co-accredited with the University of Montpellier (UM). Oriented on the territorial development and the climate change.

Associated MSC: Territorial development and Projects

- Master of Science (M.Sc.): Agricultural Management and Territories co-accredited with the University Paul Valéry Montpellier 3 (UPVM3). Focused on agricultural production management systems taking into account the territories, the natural resources and the pollution reduction management.

Associated Msc: Agricultural Management and Territories

- Master of Science (M.Sc.) : Food Value Chains et Agrologistics To control the products supplies and transportation from the field to the final consumer's table.

Associated MSc: Food Value Chains and Agrologistics

Short professional training

- Rural development economics
- Development sustainability in the Mediterranean
- Evaluation methods of public policies (Unit of Master programme)
- Social utility evaluation (Unit of Master programme)
- Actors and natural resources managements (Unit of Master programme)



Master of Science programmes (recognized as fully equivalent to the official Master programmes of the Spanish University System)

- Agro-food marketing;
- Sustainable fisheries management (jointly organised with the University of Alicante and the Spanish Ministry of Agriculture, Fisheries and Food, and the technical support of FAO and GFCM);
- Aquaculture (jointly organised with the University of Las Palmas de Gran Canaria);
- Olive growing and oil technology (jointly organised with the University of Córdoba, the International Olive Council, the Government of Andalucía and the Spanish National Research Council)
- Plant genetics, genomics and breeding;
- Animal breeding and reproduction biotechnology (jointly organised with the Polytechnic University of Valencia and the Autonomous University of Barcelona, with the collaboration of the Agricultural Research Institute of Valencia and the National Institute for Agricultural and Food Research and Technology);
- Animal nutrition (jointly organised with the University of Zaragoza and the Spanish Foundation for the Development of Animal Nutrition);
- Sustainable water management and governance in natural and agricultural environments.

Summer programmes

- Mediterranean Agribusiness School (MABS) – Spanish Food Culture: the Mediterranean Diet and the Agro-Food Industry;
- Approaches to innovation and research for the sustainability of sheep and goat production systems (organised in the framework of the EU H2020 project iSAGE).



Advanced courses for professionals

Each academic year IAMZ organises a number of advanced courses in its life-long learning programme, most of them dealing with sustainable food production and consumption. An example of some of those organised in the last five years:

- Food sustainability assessment: a methodological approach (to be held in 2021)
- Biodegradable, recyclable, active and intelligent food packaging (to be held in 2021)
- Innovative tools and methods for ensuring seafood authenticity (jointly organised with FAO and EU SEA-TRACES project)
- Food loss and waste reduction and management (jointly organised with EU REFRESH project and ICARDA)
- Seafood value chain analysis (jointly organised with FAO)
- Sustainability assessment and social acceptance of aquaculture production (jointly organised with EU projects MedAID and TAPAS)
- Wastewater reuse for agriculture (jointly organized with ICARDA, FAO, IAMB and 5+5 Dialogue Water)
- Greenhouse gas mitigation in agriculture: concepts, methods and simulation tools (jointly organised with GRA, FAO, ICARDA, Red REMEDIA and 4 per 1000 initiative)
- Livestock and climate change: assessment of emissions, mitigation options and adaptation strategies (jointly organised with GRA, FAO, ICARDA, Red REMEDIA and 4 per 1000 initiative)
- Use of sensors in precision agriculture (jointly organised with ICARDA)
- Precision livestock farming (jointly organised with EU PLF Project, Bright Farm by Precision Livestock Farming)
- Water and energy in Mediterranean rural environments (jointly organised with ICARDA, FAO-RNE, IAMB and 5+5 Dialogue Water)
- Monitoring environmental effects of aquaculture
- Recent trends in conservation agriculture in Mediterranean environments (jointly organised with ICARDA and French Agri-agency Fert)
- Risk management in Mediterranean agriculture: agricultural insurance (jointly organised with the State Agency for Agricultural Insurance of Spain and CEIGRAM- UPM).



OUR INTERNATIONAL PROJECTS

A list of projects on sustainable food systems that have been implemented by the CIHEAM and its four institutes is provided hereafter.

CIHEAM



NewTechAqua (2020 – 2024) CIHEAM Bari; CIHEAM Zaragoza

CIHEAM BARI



MOAN - Mediterranean Organic Agriculture Network.



XF-ACTORS: Xylella Fastidiosa Active Containment Through a multidisciplinary- Oriented Research Strategy (H2020 2017-2020).



SKIN: Short supply chains Knowledge; Innovation Network (H2020, grant agreement N.728055).



FoodShift 2030: Food System Hubs Innovating towards Fast Transition by 2030 (H2020, CE-SFS-24-2019).

SME-Organics: Enhancing SME competitiveness and sustainability in the organic sector (Interreg Europe 2014-2020).

INTRA: Introducing innovations in traditional agro-food products to increase SMEs competitiveness (Interreg Greece – Italy 2007-2013).

FOOD4HEALTH: Sustainable and innovative Agro food and fisheries value chain for MSME's cross border market (Interreg IPA-CBC Italy Albania Montenegro, 2019-2022).

FOODING: Valorisation of Traditional Food Products for Competitiveness and Innovation of Italian and Greek SMEs (Interreg Greece – Italy 2007-2013).

NextFOOD: Educating the next generation of professionals in the agri-food system (H2020, RUR-13-2017, grant agreement No 771738) (CIHEAM Bari).

- **Agriculture; Quality:** Enhancement and valorisation of typical quality products of Apulia region (Regional Programme 2013-15; Apulia region, Italy).
- **Apulian Lifestyle:** Apulian LifeStyle per una lunga vita felice (Regional Programme; Apulia region, Italy).
- BON-SEA.
- LYBIA RURAL RESILIENCE (MAECI).
- Cibus.
- PON Agriculture.
- Feeding Knowledge.



[ECOVINEGOALS](#) : – (2020-22) ECOlogical VINEyards Governance Activities for Landscape, Strategies (INTERREG V-B Adriatic-Ionian Programme 2014-2020, Second Call for Proposal - Priority Axis



[LIVINGAGRO-Cross](#) Border Living laboratories for Agroforestry (ENI CBC-MED PROGRAMME; livingagro, 2020-23



[PLANT UP](#) – UPGRADING THE PLANT CAPITAL/ Enhancing Agro-biodiversity conservation and Agro-Ecology practices / EU - ESFRI Infrastructure projects/



[EMPHASIS PREP](#) - Pan-European plant phenotyping infrastructure/ HORIZON EU funded project (2017-2021)

- **TOMATOMICS**- Development of new tomato cultivars by using omics technologies/funded by “Research-Create-Innovate Second Cycle, Competitiveness, Entrepreneurship; Innovation (2020-2023)
- **ELAIDA**-Characterization and valorisation of olive genetic resources aiming at climate change adaptation and production of high nutritional and organoleptic value products of olive oil/ funded by “Research-Create-Innovate Second Cycle, competitiveness, Entrepreneurship & Innovation (2020-2023)
- **ROXY** – Oxygen Sensing a Novel Mean for Biology and Technology of Fruit Quality COST-European Cooperation In Science & Technology-Horizon2020 (2020-2023)
- **INTEGRAPE** – Data integration to maximise the power of omics for grapevine improvement - COST-European Cooperation In Science Technology- Horizon2020 (2019-2022)

[METROFOOD-PP](#) (METROFOOD-RI Preparatory Phase Project) H2020-INFRADEV- 2018-2020 (Oct.2019- March 2022) as member of the Greek node



[MEDLENTISK](#) - Partnership for the exchange of best practices on lentisk tree fixed oil, an emblematic non-timber forest product in the Mediterranean ERASMUS+



[DTRaIN](#) - Design Thinking for Entrepreneurship in Agri-food Sector (2019-2022) Erasmus + KA2 - Cooperation for innovation and the exchange of good practices; KA202



[ECOPLANTMED](#) - ECOlogical use of native PLANTs for environmental restoration and sustainable development in the MEDiterranean region (ENPI CBC MED 2014-2015)



[CARE-MEDIFLORA](#) -Conservation Actions for Threatened Mediterranean Island Flora: ex situ and in situ joint actions” implemented by institutions of six Mediterranean islands (Balearic Islands, Corsica, Sardinia, Sicily, Crete and Cyprus) and the IUCN/SSC Mediterranean Plant Specialist Group (2016-2019).

- **CRETAR:** Research on the disposal of wild propagating material of aromatic plants in Crete. (Region of Crete, 2018-2019).
- **Pilot** actions for the conservation of the genetic material of *Castanea sativa* in the prefecture of Chania through genotype preservation of its local varieties and chestnut marketability, Ministry of Environment, Energy; Climate Change /Green Fund (2016-2020)
- Development of a methodology for the enhancement and protection of populations of endangered plant species in Crete. Pilot implementation in the prefecture of Chania, Ministry of Environment, Energy; Climate Change /Green Fund (2014-18)
- **AgroSilver Value** - Integrating silver knowledge from agroecology into the VET systems ERASMUS+ # KA2 # Strategic Partnerships for vocational education and training.
- **HONEYBEE ROADS** ; Creation of a national research network in the value chain of FUNDING: GSRT (General Secretariat of Research and Technology), Greek Ministry of Education, Research and Religious Affairs, 2019-2021



The Seed Bank of CIHEAM Chania is the best seed bank in Greece for native plant species, following international standards. It was established in 2000 and according to the initial design, it allows for the safe long-term storage of approximately 10,000 accessions. It is a member of the Mediterranean Network of [“Mediterranean Plant Conservation Centres - GENMEDA”](#) (18 members from North and South Mediterranean) and the “European Native Seed Conservation Network - ENSCONET” (24 European members). About 1300 accessions that correspond to about 400 plant species of the wild endemic and threatened Cretan flora and about 500 accessions of landraces from Crete and other regions of Greece are currently stored in the Seed Bank. The infrastructure is used for all the essential steps for the preservation of seed germplasm, such as Collection (well experienced personnel for the collection of the regional flora, taxonomy and plant identification), Curation, Seed drying (modern drying facilities including a dry room), and Storage (fully equipped cold room). In addition, there is a fully equipped laboratory for germination experiments.

- **Activa Blé** (2018-2021): Produce scientific knowledge on products made with traditional wheat varieties: nutritional interest and on economic and relational strategies to promote them.
- **TRAC** (2019-2023): The project will co-construct a support method to better take into account the work dimension in the strategic thinking of farmers during the creation or reorientation of their short circuit activity.
- **VALUETEAM** (2018-2021): Local and international valorization of Mediterranean agri-food products by quality certifications. The case of the paeonicultural sector
- **GESPPEIR** (2017-2020): Water Management, Phytosanitary. Forecast and Risk Indicators.
- **DEVLOK** (2017-2020): Implementation of a participatory and inclusive approach for strengthening the maritime, agricultural and rural economy of the Kerkennah Islands based on the sustainable development of the resources of the territories.
- **MADRE** (2017-2018): Metropolis and sustainable agriculture for a renewal of rural and urban ecosystems.
- **SEMIARID** (2017-2021): Sustainable and efficient Mediterranean farming systems : improving agriculture resilience through irrigation and diversification.
- **ECOWASTE 4 FOOD** (2017-2020): The general objective of the ECOWASTE4FOOD project is to improve the policies instruments of partners (Region) for regional development, as well as their ability to protect the environment and promote an economy efficient in resources by supporting eco-innovations in the food waste field.
- **HASAD** (2016-2018): Provide technical assistance to set up and manage agricultural service centres in the regions of Akkar and Baalbeck-Hermel.
- **FAO SEMED** (2016): Assess the opportunities and constraints for the development of farmers; cooperatives and producer organizations in the; region and the regions for future investments.

- **HNV-Link** (2016-2019): Provide advocacy for agriculture under pressure but essential to the management of natural resources and for the sustainable development of territories.
- **Small Scall Agriculture in Algeria** (2018): Study on small-scale agriculture. RESEAU MED AMIN Agricultural Market Information Network.
- **Biodiv Balkan** (2012-2017): Biodiversity Conservation and Valorisation: Sustainable rural development in Balkan Mountains.
- **ENPARD** (2012-2017) Improve rural livelihoods by promoting inclusive economic growth and the sustainable development of rural areas; Contribute to food security by promoting a more secure and affordable food supply and strengthen food safety and quality standards for better promotion of products on national and international markets; Strengthen the capacities of administrations and stakeholders for better governance of agriculture and rural areas.
- **LACTIMED** (2012-2016): The Lactimed project aimed to strengthen the production and distribution of typical and innovative dairy products in the Mediterranean by organizing local supply chains, supporting producers and promoting their products on local and international markets.
- **ILLIAD** (2012-2016) The ILLIAD project aimed to propose a method for analysing the sustainability of food systems that takes into account the consequences of the organisation of these systems.

- **MedAID:** Mediterranean Aquaculture Integrated Development, EU H2020 2017- 2021 grant agreement No 727315, **Total budget: 6,999,996€**, Coordinating institution: CIHEAM Zaragoza, 34 Partners from 13 countries.
- **SIMRA:** Social Innovation in Marginalised Rural Areas, EU H2020 2016-2020 grant agreement No 677622, **Total budget: 5,937,203€**, Coordinating institution: The James Hutton Institute UK, 25 Partners from 13 countries.
- **iSAGE:** Innovation for Sustainable Sheep and Goat Production in Europe, EU H2020 2016-2020 grant agreement No 679302, **Total budget: 6,996,922€**, Coordinating institution: Aristotelio Panepistimio Thessalonikis Greece, 33 Partners from 7 countries.
- **LEGATO:** Legumes for the Agriculture of Tomorrow, EU FP7 2014-2017 grant agreement No 613551, **Total budget: 4,999,000€**, Coordinating institution: INRA France, 27 Partners from 12 countries.
- **CREAM:** Coordinating Research in Support to Application of Ecosystem Approach to Fisheries and Management Advice in the Mediterranean and Black Seas, EU FP7 2010-2013 grant agreement No 265648, **Total budget: 999,000€**, Coordinating institution: CIHEAM Zaragoza, 21 Partners from 17 countries.
- **Research Networks** (CIHEAM Zaragoza promotes and coordinates research networks that are structured groups of researchers working on common scientific areas, with a stable coordination structure, and a large and consolidated participation of persons, institutions and countries): SFS related networks are: Interregional FAO-CIHEAM Research Network on Sheep and Goats, Interregional FAO-CIHEAM Research Network on Pasture and Forage Crops, Interregional FAO- CIHEAM Research Network on Nuts, Mediterranean Network on Food Safety (SAMEFOOD).

OUR STRUCTURE AND RESOURCES

The WG-SFS is based on the infrastructures and resources of the four CIHEAM institutes, summarized here below, and will be coordinated by Roberto CAPONE (CIHEAM Bari), and a team of experts and complementary profiles from the CIHEAM Chania (Eleni STAMATAKI), the CIHEAM Montpellier (Myriam KESSARI), the CIHEAM Paris (Vincenzo FERSINO) and the CIHEAM Zaragoza (Manuela CEREZO).

CIHEAM BARI

The CIHEAM Bari fosters synergies and complementarities between research, training, networking, technical assistance, partnership and cooperation activities in order to promote food and nutrition security in the Mediterranean countries. Training activities are carried out on-demand and in the framework of research and cooperation projects. These activities regard, inter alia, the following thematic areas: sustainability of the Mediterranean food systems including food safety, security and nutrition, energy use, natural resources optimisation; impacts of organic agriculture on food security and sustainable livelihoods in urban and rural communities; typical and traditional agro-food products, nutraceutical compounds in food, quality and authenticity of extra virgin olive oil; internationalisation policy and marketing strategies; quality management, organic trade data, market, consumer and value/supply chain analysis; ecosystem-centred approach to manage natural resources in agriculture and mitigate climate change impacts on different agricultural systems; life cycle approach for efficient use of conventional and non-conventional resources, for a sustainable food chain management; enhancement and protection of native genotypes of Mediterranean crops; pest/pathogen identification, characterisation, epidemiology and control; innovative, eco-friendly and automated technologies and methods for agricultural production, e.g. precision agriculture and irrigation, post-harvest techniques.

The Mediterranean Agronomic Institute of Chania (CIHEAM Chania) focuses on the provision of postgraduate education, the implementation of high standard research and the systematic support of innovation at regional, national and European level in the fields of Business Economics; Food Quality; Geoinformation in Environmental Management; Horticultural Genetics and Biotechnology; and Sustainable Agriculture.

The institute, in the course of its participation in a large number of development, pilot and research projects, as well as through other activities such as training, networking, and laboratory services, tackles many challenging issues connected with the agri-food sector, food and nutrition security in the Mediterranean. It has implemented actions that deal with the complex and diverse problems of the sector, by designing and implementing policies, disseminating good practices and research outcomes, and generating reciprocal benefits for all actors involved. Our areas of interest are related with the whole food chain and by extension the whole food system originating from agriculture, forestry and all parts of the broader economic, societal and natural environments, i.e farming, conservation of natural resources, ecosystem management, food production, food technology and food processing packaging and distribution, food quality and food safety, labelling, standardization, policy issues, etc.

Research and training activities are very much interrelated – supported by the Laboratories of CIHEAM Chania, i.e the Food Quality and Chemistry Laboratory which provides research and laboratory services for quality analyses (ISO 17025) in food featuring antibiotics in honey and volatile toxicants in water; and, the Laboratory of Sustainable Agriculture, which, taking into account the increasing demand for food quality and safety as well as sound management of biotic and abiotic resources towards a minimum environmental impact, aims at targeting and experimentally testing production critical points: agrobiodiversity, nutrients, water, energy use, CO₂ emissions, etc. Last but not least the Seed Bank of CIHEAM Chania, dedicated to the study and conservation of the Mediterranean plants, represents a considerable contribution to the sustainability of the food system.

The CIHEAM Montpellier develops educational, research and expertise activities. Its areas of expertise and action focus on subjects related to the sustainable food systems with several entries: public policies, farming systems, circular economy, sustainable value chains with the specific and transversal considerations: the climate change and the territory.

The IAMM is accredited to issue the French national diploma of Master and the training programmes strongly emphasise on methodological and practical courses largely focused on sustainable food systems (see list above).

Our educational activity is backed by research activities benefitting from the vibrant environment provided by the scientific community in Montpellier, particularly active and recognised in in our fields of interest. We thus develop different projects and host PhD students in these areas: environment, assessment, institutions, arid areas, desertification; Farm and territory modelling / management of agricultural water demand through action models / Development of simulation games to aid decision-making in agriculture; alternative food networks, collective action for sustainable food systems, responsible organisations; territorial development, rural employment, public policies, spatial planning; agronomy / environment: Mediterranean cropping systems, sustainable management of natural resources (water and soil), cropping systems, production systems, agro-environmental sustainability ; value chains analysis, international markets analysis.



Established in 1962, the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) is a Mediterranean intergovernmental organisation composed of 13 Member States (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey). It operates through its 4 Institutes based in Bari (Italy), Chania (Greece), Montpellier (France) and Zaragoza (Spain) and the Headquarters based in Paris.

As a key player in multilateral cooperation in the fields of sustainable agriculture and fisheries, food systems, coastal and rural development, its missions revolve around four main objectives :



Protection of the planet by combating all forms of waste: waste of natural resources, food waste and waste of knowledge and know-how;



Food and nutrition security by boosting sustainable agriculture and food systems;



Inclusive development by investing in new generations and fragile territories;



Prevention of crises by managing tensions and working for the resilience of communities.

The CIHEAM strives to achieve these objectives through education and capacity building, networked research, cooperation and technical assistance and political dialogue. Cooperation is essential for CIHEAM, which collaborates with more than 50 countries, several regional and intergovernmental organisations, and more than 600 universities and research centres.

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