CIHEAM
International Center for Advanced Mediterranean Agronomic Studies

Sharing Knowledge, Feeding the Future

CIHEAM GLOSSARY

Struggling Against Triple Waste

Waste of Knowledge and Knowhow

Enhancing the sharing of knowledge and defending traditional knowhow

Throughout the history of the Mediterranean, agricultural practices adapted to the natural conditions of the region have been developed and passed on to new generations. Over time, farmers have acquired skills, traditional knowledge and knowhow that must be shared, transmitted, preserved and combined with innovation to meet the needs of agricultural production. This can be achieved through the establishment of networks for the sharing of scientific, technical and empirical knowledge.

Waste of Natural Resources and Energy

Managing natural resources and energy (water, soil, forests, energy, biodiversity...) more responsibly

Agricultural activity relies on the use of natural resources and energy and has thus a severe impact on fresh water resources, arable land and biodiversity. The Sustainable Development Goals (SDGs) adopted by the UN include the preservation of terrestrial, marine and forest ecosystems as well as responsible consumption and production. Agriculture must therefore adapt its activities to preserve and protect these natural resources while reducing its dependence on polluting fossil fuels. Restoration of arable land, improved irrigation efficiency, conservation of forest systems, biodiversity enhancement and adoption of green energy are fundamental for sustainable development.

Waste of Food

Reducing food losses and waste along food chains

A third of the food production for human consumption in the world is lost or wasted. From

production to consumption, food losses and waste are observed along the food chain. They are mainly caused by financial and technical limitations as well as by the behaviour of actors. Modernised infrastructure and increased awareness among consumers, retailers and agro-food industries could lead to a significant reduction of losses, thus improving food security and economic growth in the Mediterranean.

Examples of CIHEAM activities, publications and work on **Struggling Against Triple Waste**:
CIHEAM Action Plan for the Mediterranean
MEDITERRA 2016
ECOWASTE 4 FOOD Project

Boosting Sustainable Agriculture and Food

Promoting the Mediterranean diet

The Mediterranean diet is considered as a model for a healthy, sustainable and environmentally friendly lifestyle that is conducive to local producers. Yet, international trade exchanges and lifestyle changes are disrupting the eating habits of the region. Under nutrition and malnutrition are still present in the South and East of the Mediterranean while all Mediterranean countries are increasingly faced with obesity and diseases related to poor diet. Mediterranean diet should therefore be increasingly promoted.

Enhancing agro biodiversity conservation and agro ecological practices

Agro biodiversity is defined as "the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. It comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fibre, fuel and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil micro-organisms, predators, pollinators), and those in the wider environment that support agro ecosystems (agricultural, pastoral, forest and aquatic) as well as the diversity of the agro ecosystems". Agro ecology is the application of ecology to the development and management of sustainable agro ecosystems to increase or maintain agricultural production while reducing pressure on the environment and natural resources.

Improving food safety and quality

The quantitative and qualitative dimensions of food security are equally significant. Throughout the food chain, products can be exposed to multiple risks (pesticides residues, microorganisms and mycotoxins) that could affect quality in terms of nutrition, health and safety. It is therefore essential to develop best practices in production, handling, processing, distribution and traceability of food products. Improved logistics are also crucial as they help reduce losses and extend product shelf life. Prevention is the best way to ensure food safety and quality. Adequate legislation and efficient tools to detect contaminants should be developed and adopted.

Access to food

Physical and economic access to food is essential for food security. To ensure access to food, it is necessary to act simultaneously on the production and consumption stages of the food

chain. Access must be stable, sustainable and continuous, including in adverse circumstances (conflicts, disasters, etc.). Access to food is also related to farmers' access to inputs (land, water, seeds), markets and available services to facilitate the use of technologies. Water is the lifeblood of ecosystems, on which depend the food and nutrition security of present and future generations, economic growth and income generation.

Examples of CIHEAM activities, publications and work on **Boosting Sustainable Agriculture and Food**:
CIHEAM Action Plan for the Mediterranean
CIHEAM Chania Sustainable Agriculture Master's Program
MEDFORUM 2018
CIHEAM 2020 Ministerial Meeting
Mediterranean Diet Event

Investing in New Generations and Fragile Territories

Youth employment and lifelong learning

Many young Mediterranean people are struggling to find decent jobs. They are more attracted by service-related jobs in cities. Employment related to agriculture, the rural world, fisheries or forest is unattractive. Yet, given the youth unemployment rates in the region, agriculture (and associated sectors) must be considered as job providers. Innovative agricultural practices are redefining the work of farmers. Agricultural entrepreneurship is likely to provide the new generations with rewarding and remunerative employment, more competitive food production and economic wealth. This development is only possible with the involvement of younger generations and a deep change in the perception of these issues that are crucial for the future.

Rural and Coastal Development

The development of rural and coastal areas should be aimed at enhancing specific resources of fragile territories and improving the living conditions of their inhabitants. This development must include economical (provision of basic infrastructure, agricultural and fishery products, tourist activities and services, sources of employment, economic resources), social (poverty reduction, role of women, access to land, sea exploitation) and environmental (protection, sustainable use of ecosystems and natural resources) dimensions. Integrated development of coastal areas would enable to adapt to new challenges and benefit from the complementarities and potential multifunctionality of fishermen and farmers. In addition, the necessary inclusion of farmers and fishermen to avoid inequalities between territories is strategic for socio-political stability.

Gender Equality and Inclusion of Vulnerable Groups

The notion of vulnerable groups refers to categories of populations, individuals or organisations with specific characteristics (age, sex, religion, social, economic, ethnical, physical etc.) that make them at higher risk to fall into precarious situations. These groups are less able to anticipate, resist and recover from shocks and disasters. They are more likely to suffer from food insecurity and poverty but also to be marginalised in development projects and growth processes. Inclusive development must ensure that all populations are involved in the process while increasing their capacity. Gender equality is a central aspect of the inclusion of vulnerable groups. Women and men should enjoy the

same opportunities, including economic participation and decision-making. Their different aspirations and needs should be equally considered.

Agro-Smart Business

Faced with changes and challenges, rural areas have shown their resilience and ability to provide solutions. "Smart rural areas" are increasing across the Mediterranean. In these areas, good governance, public policy support to local initiatives, societal responsibility, multi-stakeholder dialogue in decision-making and implementation efforts, inclusive investments and synergies between research, development needs and value creators are combined. An agricultural revolution is needed in production methods and practices to provide consumers with products of sufficient quantity and good quality but also to provide more sustainable options in a context of increasing environmental constraints and social challenges.

Examples of CIHEAM activities, publications and work on **Investing in New Generations and Fragile Territories**:
CIHEAM Action Plan for the Mediterranean
CIHEAM Bari International Conference

Preventing Risks and Managing Tensions

Mobility and migrations

Historically, the Mediterranean region has always been a melting pot marked by the mobility of peoples. Migration can be internal with a rural exodus that continues while socio-economic perspectives in cities seem to be less favourable. It can also be international with people seeking better living conditions abroad. However, there are also displaced people that are forced to migrate due to security problems. The amplification of distress mobility in the region raises many humanitarian and political issues, positioning debates on the management of emergency and short-term management of these complex dynamics. Root causes of migration should be addressed simultaneously in order to highlight possible solutions from the perspective of agricultural and rural development and food security.

Climate change mitigation and adaptation solutions

The struggle against climate change must take consideration of agriculture and food security. Although agriculture and forestry are important emitters if greenhouse gases, they also provide solutions for the adaptation to and mitigation of climate change. The ability of soils to sequester GHGs and biomass help reduce global warming and the adoption of sustainable irrigation systems leads to a decrease in desertification. Incorporating the cultivation of trees, the development of agroforestry also contributes to the reduction of emissions caused by deforestation.

Animal and plant health change

Harmful organisms in animals and plants seriously compromise food security and safety with severe economic and environmental consequences for specific species, crops and territories. Globalisation increases the risk of introducing harmful organisms that may become invasive due to climate change, thus leading to serious health crises. Organisms that are present in the region may also become

harmful due to climate change. Moreover, health crises occur due to conflict, poor storage and transport infrastructures, weak quarantine measures or lack of veterinary care; poor communication with stakeholders and civil society. Now handled by most stakeholders (younger generations) high technology may greatly support actions to control pests and diseases. The strengthening of quarantine measures, the adoption of advanced tools in the entire production chain for plants and animals, knowledge sharing and networking can greatly contribute to limit health crises.

Agricultural markets

Most Mediterranean countries depend on international markets to meet their food needs. This trade is also important for their own economic dynamics since they export a significant part of their agricultural products. The increased unpredictability of budgetary dimensions of this agricultural trade echoes the growing trade partners with globalised and multi-stream fluxes. Price volatility is increasing and weighs on producers or consumers, especially the most vulnerable ones, and on public finances. The resilience of countries, societies and farmers and fishermen is fundamental in such an uncertain environment.

Examples of CIHEAM activities, publications and work on **Preventing Risks and Managing Tensions**:
CIHEAM Action Plan for the Mediterranean
CIHEAM 2010 WatchLetter
CIHEAM Climate Change Analysis