CONTEXT AND CHALLENGES

The global challenges related to sustainable food systems have become a worldwide priority, recognized and embraced by the international community. Over the past decade, these issues have garnered strong and renewed commitments from heads of state, governments, and international organisations. These commitments have been crystallised in key declarations such as the COP 28 Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, issued by the United Arab Emirates in 2023. The African Union has also made significant strides, starting with the Malabo Declaration of 2014, which focuses on Accelerated Growth and the Transformation of Agriculture in Africa for Shared Prosperity and Improved Living Conditions, followed by the Nairobi Declaration of September 2023. Similarly, in November 2022, the OECD issued a Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems, which aligns with earlier commitments made by the G20 in the Matera Declaration of June 2021. Most recently, the G7 issued a statement following their summit in Puglia in June 2024, and the G7 Agriculture Ministers, meeting in Syracuse in September 2024, reaffirmed their commitment to making agriculture and food systems more productive, resilient, and sustainable in order to enhance food security and nutrition.

These declarations, in alignment with the SDGs and the 2030 Agenda for Sustainable Development, emphasise the critical threats to food security and sustainable development. They underscore the urgent need to act on food systems to ensure their resilience and sustainability, by enhancing food sovereignty, promoting gender equality, building capacity, and empowering youth. Additionally, the focus is on the production, sharing, and transfer of knowledge and technology, while mobilising the private sector to support these objectives.

Unprecedented and interdependent climatic, environmental, and socio-economic crises are exerting immense pressure on food security, health, nutrition, sustainability, and livelihoods across Mediterranean societies. The region is particularly vulnerable to the effects of climate change, soil degradation, and biodiversity loss. Compounding these issues are major demographic and societal shifts, including rapid urbanisation. These dynamics, further influenced by globalisation, have led to increasing demands and pressures on food choices, causing significant upheavals in food production, processing, and consumption systems throughout the region.

These profound changes call for a reassessment of current practices and a reevaluation of how natural resources are used, particularly in terms of food sovereignty, the green and blue transitions, community resilience, and future food policies. Agricultural and food systems that successfully implement climate mitigation and adaptation measures, harness science, technology, and knowledge transfer to manage resources efficiently, and invest in youth and innovation, have the potential to generate sustainable economic and social opportunities, especially in the most vulnerable rural areas of the Mediterranean.

It is thus essential to adopt a shared and integrated understanding of sustainable food systems, specifically tailored to the Mediterranean context, and developed through multi-stakeholder collaboration. An approach grounded in knowledge, partnership, and innovation is imperative to address the complexity of the multiple and interconnected challenges facing the Mediterranean region.

VISION AND AMBITION OF CIHEAM

The vision that inspired the creation of CIHEAM in 1962 remains as relevant today as ever. Its establishment was driven by the firm belief that peace is rooted in shared prosperity, and that this prosperity, particularly in the agricultural sector, is underpinned by the training of key actors, the development, and the dissemination of knowledge.

The founding agreement of CIHEAM explicitly states that “agriculture being the fundamental activity of the Mediterranean basin, it is desirable to establish, in the field of higher agricultural education, close cooperation between the countries of this region, whose unity is based on geological, geographical, climatic, and human foundations; and that agricultural development requires the closest cooperation among Mediterranean countries.”

This vision must now be enriched in light of current challenges. CIHEAM must adopt an integrated, multi-stakeholder approach, clearly identifying the major issues and key driving forces—climate change, mitigation and adaptation strategies, food security, socio-economic environments, humanitarian crises, distress migration, and the exploitation of natural resources—that play pivotal roles in shaping the region’s future.

At a time when these issues are giving the Mediterranean region global priority, and while the European Union is developing a 'new pact for the Mediterranean' aimed at strengthening partnerships in key areas of mutual interest, CIHEAM has a unique opportunity to highlight its concrete role, its longevity, its legitimacy, and its grassroots presence, in order to make its mark in decision-making bodies. As one of the few intergovernmental Mediterranean organisations engaged in multilateral cooperation, CIHEAM must be more widely recognised by policymakers as a leading actor bringing significant added value to the region by working towards food security, inclusive development, and consequently, peace and solidarity.

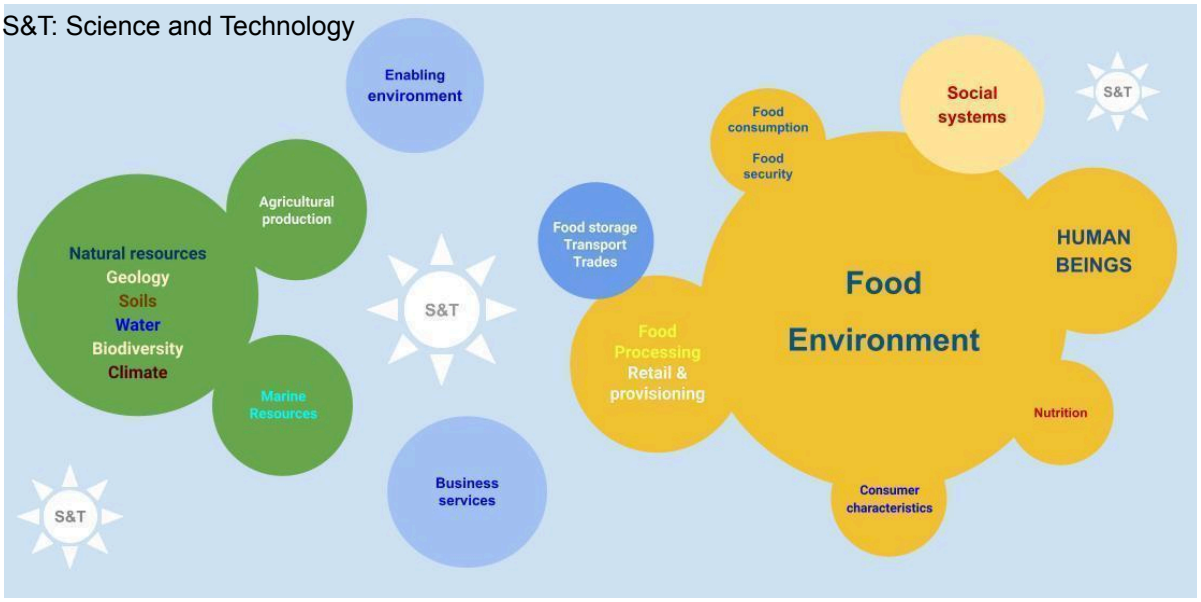
Aligned with the global commitment of the international community to advance towards more sustainable food systems, CIHEAM is fully dedicated, through its Strategic Plan 2030 (CSP 2030), to strengthening international cooperation and regional dialogue in order to accelerate this transition. This commitment aims to contribute to a prosperous and equitable future for the populations of the Mediterranean region.

The CSP 2030 seeks to interpret sustainable food systems in the Mediterranean not only as a conceptual framework but also as a source of numerous actions and solutions, ensuring that food production and consumption are as environmentally friendly and resource-efficient as possible, while fostering social and economic progress, benefiting both rural and urban communities, supporting trades, and contributing to human well-being.

A NEW THEORETICAL FRAMEWORK TO GUIDE THE ACTION OF THE CIHEAM

In a synthetic way, food systems strongly connect two large biological entities. On the one hand **Nature**, which includes land and water, soils, biodiversity and climate; on the other hand **Human beings**, in variable frameworks of socio-economic and cultural drivers. An apparently simple equation links the production and the consumption of food. The relationship is extremely complex either because food production is related to intricate systems of different domains or because consumption is not simply an individual act but involves aspects and conditions proper to the socio-economic environment to which it belongs.

A simplified graphical model is shown in the next figure.

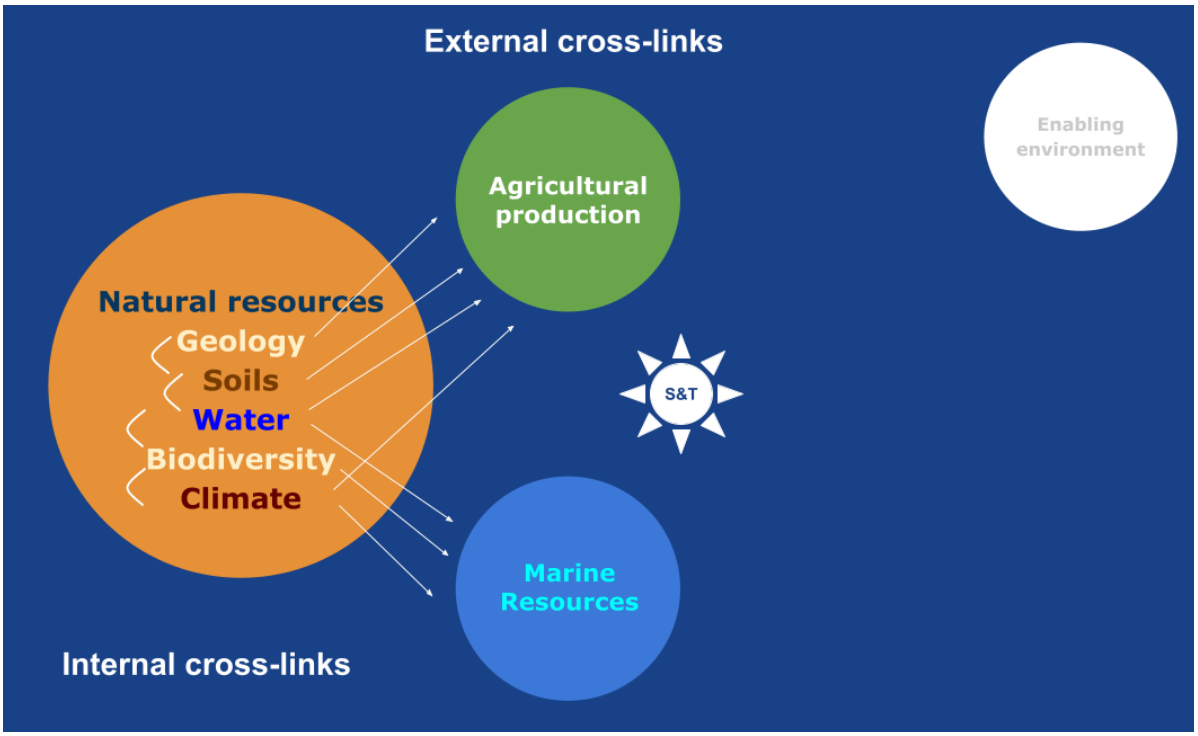


Model structure

Between the two extremes, all the different processes within the system (food transformation, storage and delivery, security, consumer and social aspects, nutrition) take on various degrees of significance as a function of any specific interest or observation.

Close-ups

Each sphere represents a specific portion of the food systems, shows variable dimensions and definitions which may change further according to both global and local factors, and to the site specific point of view or objectives of a study. Each of the chain rings allows its own conceptual dimension and different methodological approach. In fact, a single domain clearly represents a specific and complete universe with specific actors, process characteristics, internal and external drivers and conditioning factors.



Close-up example

Science and Technology (S&T)

Research outputs, need-oriented solutions and applied technology are the real driving force behind all processes, both in hard and in human sciences. The scientific research together with the creative thinking approach represent the most significant and innovative drivers for the development of individual processes and human communities in general. The new frontier of scientific thought must be closely associated with the specific needs and expectations of local communities and territories. A stronger connection between the scientific approach, the scaling factor of prototypes, the structural change of educational drivers and the development of an innovative business model can provide a strong stimulus in the development of small and bigger communities, also through the evolution of communities of practice and living laboratories.

The classical model of connection between fundamental or applied research and private businesses has shown very clearly a very limited usefulness in producing measures of growth and empowerment for the benefit of local or regional mediterranean communities. A **new approach** could envisage a different working environment in which all actors and stakeholders interact, share diverse approaches, backgrounds and experiences and actively co-plan solution-based procedures and actions. Participatory planning can be possibly adapted to several fields including education, training, scientific research, cooperation programmes and policy making.

Complexity

Complexity should be addressed with complex tools and methodologies. The typical triple helix system, comprising universities and research centres, private bodies and institutions, is naturally enriched by the human dimension, usually through the participation of associations and communities of all kinds which join through their experiences and programmes in various fields of activities. And, only recently, given the extraordinary attention paid to the environment and the severe impacts of climate change in particular, the system has evolved towards the new theoretical figure of the **quintuple helix** (universities, institutions, companies, communities, ecosystem).