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CIHEAM
International Center for Advanced
Mediterranean Agronomic Studies



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PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION
IN THE MEDITERRANEAN AREA

GREEN GROWTH: STRATEGIES AND ACTIONS TO SHIFT TOWARDS SUSTAINABLE AGRIFOOD SYSTEMS IN THE MEDITERRANEAN REGION

WEBINAR OUTCOMES

KEY MESSAGES

- The Mediterranean region's population is projected to reach 550 million by 2050,¹ placing further pressure on agrifood systems. Without a **shift towards more systemic and holistic approaches that embrace sustainable practices**, food may become increasingly expensive and less secure, exacerbating social and economic inequalities, and further damaging the environment.
- **Organizational innovations** enabling access to knowledge and giving representation to rural and marginalized populations, as well as **digital innovations** are accelerators for the adoption of sustainable agrifood practices.
- **Financial innovation is functional to incentivize sustainable agrifood practices**. The example of carbon farming provides a promising business model to incentivize greener agricultural practices, since farmers receive a financial compensation for the adoption of practices that mitigate emissions, improve soil health and protect biodiversity, such as regenerative agriculture.
- The transformation of the agrifood system and its ability to adapt to the challenges posed by the climate and environment crisis and food security threats hinge on **securing the necessary finance and fostering a supportive policy environment**. Government policies play a pivotal role in attracting sustainable investments by the private sector and financial institutions.
- **Research, training, and skills development constitute indispensable tools to engage a young working-age population** through new employment and educational opportunities that truly accelerate agrifood systems transformation towards the attainment of green growth.
- **Multi-stakeholder platforms** are key to promote collaborative and integrated approaches to innovation and research with the aim to achieve the sustainable transformation of agrifood systems.

SPEAKERS



Moderator:

Antonella Autino

Project coordinator, [PRIMA Foundation](#)



Yasmine Seghirate El Guerrab

Administrator, [CIHEAM](#)



Nora Ourabah Haddad

FAO Representative in Lebanon, [FAO](#)



Joan Colón Jordá

Head of the Sustainability Accounting and Optimization Unit, [BETA Technological Center](#) at UVIC-UCC



Bernard Ader

Vice-president, Committee of Professional Agricultural Organisations - General Confederation of Agricultural Cooperatives ([COPA COGECA](#)) and President, French National Council for Food Resilience ([CNRA](#))



Nada AlFreihat

Head of the Organizations Section, Directorate of Agreements and International Cooperation, [Ministry of Agriculture of Jordan](#)



Madhi Khomsi

Project Coordinator, [BusinessMED](#)



Ebru Edin

Chairperson, Business Council for Sustainable Development Türkiye ([SKD Türkiye](#))

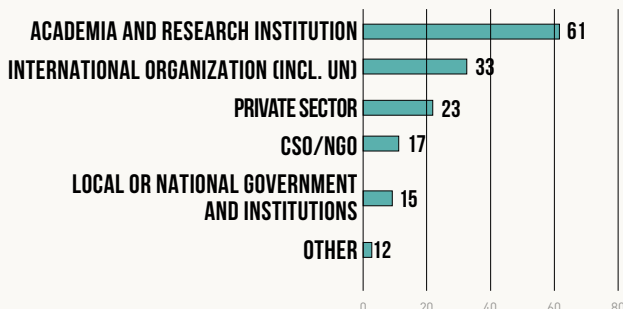


Giuseppe Provenzano

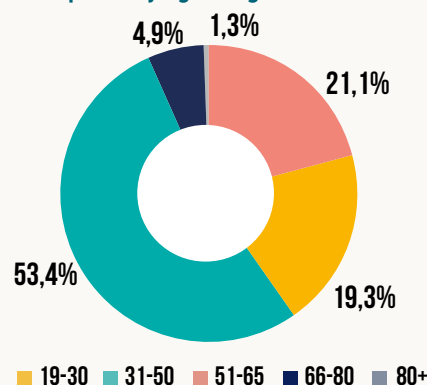
Project Manager, Higher Education and Research Division, Union for the Mediterranean ([UfM](#))

Participation statistics | 161 participants from 30 countries. Of which, 135 participants from 15 Mediterranean countries.

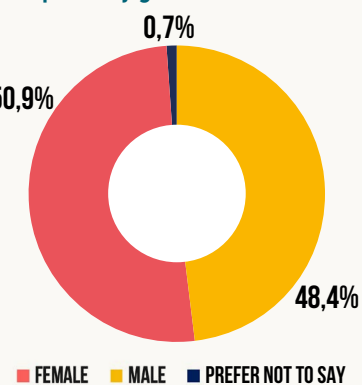
Number of participants by stakeholder group



Participants by age range



Participants by gender



OVERVIEW OF GREEN AGRIFOOD SYSTEMS AND THEIR BENEFITS

The opening remarks provided the technical background for this webinar through an overview on green agrifood systems, providing a specific example with the perspective of Lebanon. They were delivered by:



International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)

represented by Ms Yasmine Seghirate El Guerrab, Administrator.

Established in 1962, CIHEAM is a Mediterranean intergovernmental organization composed of 13 Member States (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia, and Türkiye). It operates through its four Institutes based in Bari (Italy), Chania (Greece), Montpellier (France), and Zaragoza (Spain), and the Headquarters based in Paris. All the activities of the CIHEAM are based on a bottom-up collaboration approach and are problem-solving oriented, in relation to the specific needs of the countries. CIHEAM's mission is structured around 4 pillars of development (Protecting the planet, Food security and nutrition, Inclusive development, Crises and resilience) and divided into 15 thematic priorities. CIHEAM's Strategic Agenda 2025 and its Action Plan aim to implement the 2030 Agenda for Sustainable Development in the Mediterranean in specific fields.



Food and Agriculture Organization of the United Nations

Food and Agriculture Organization of the United Nations (FAO)

represented by Ms Nora Ourabah Haddad, FAO Representative in Lebanon.

FAO is the United Nations specialized agency in food and agriculture, with a comprehensive mandate from its Members - 194 countries and the European Union - to work globally on all aspects of food and agriculture (including fisheries, forestry and natural resources' management), food security and nutrition across the humanitarian-development continuum. In Lebanon, FAO's programme focuses on the promotion of sustainable development of the agriculture sector, in close collaboration with the Ministry of Agriculture, other relevant ministries and stakeholders, including non-state actors. More recently, FAO has been supporting the coordination and planning mechanism for humanitarian and stabilization assistance to Lebanon in the context of the Syria crisis. FAO's programme relies on three priorities: sustainable, competitive and inclusive business agrifood value chains for enhanced food and nutrition security; sustainable management of natural resources for healthy ecosystems in the context of climate change; increased resilience of agrifood actors following a humanitarian-development-peace nexus approach.

The need for sustainable agrifood systems is becoming increasingly urgent as the global demand for food continues to rise. The Mediterranean region's population is projected to reach 550 million by 2050,² placing further pressure on agrifood systems. Without a **shift towards more systemic and holistic approaches that embrace sustainable practices**, food production may become increasingly expensive and less secure, exacerbating social and economic inequalities and further damaging the environment.

The concept of green agrifood systems have gained prominence because agrifood systems are the main drivers of environmental degradations. They are also struggling to provide decent livelihoods, exacerbating disparities and contributing to climate breakdown. These systems bring forth complex, interconnected challenges affecting food security, health, nutrition, and overall sustainability. Transitioning towards more sustainable agrifood systems in the Mediterranean requires systemic and integrated solutions that transcend single-disciplinary approaches.

THE EXAMPLE OF LEBANON

The Lebanese agrifood system faces a multitude of challenges, including climate change, land degradation, pollution, resource competition, population growth, and migration. Additionally, economic, health, and financial crises, including hyperinflation and currency devaluation, have further strained the food system's components. Lebanon's supply chains are characterized by fragmentation, informality, reduced productivity, dominance by a limited number of input suppliers, and declining invest-

ment. The affordability of agrifood inputs has dwindled, leading to a reduction in agricultural input expenses. On top of this, affordability of food in Lebanon has decreased significantly due to plummeting purchasing power. Quality and safety concerns, coupled with malnutrition, are also emerging as critical issues. Against this background, FAO is developing the latest Country Programming Framework for the period 2023-2026, focusing on three main priorities: sustainable, competitive and inclusive business agrifood value chains for enhanced food and nutrition security; sustainable management of natural resources for healthy ecosystems in the context of climate change; increased resilience of agrifood actors following a humanitarian-development-peace nexus approach.

Three approaches were described as examples of systemic, multi-sectoral solutions embraced by FAO in Lebanon. First, the **integrated agro-sylvo-pastoral approach places the environmental and economic recovery at the core of the transformation of the agrifood system**. By providing a balance between restoring ecosystem services and productive agricultural land functions, this approach combines capacity building and job creation in reforestation and climate-smart agricultural practices; at the same time, it includes peace-building components by strengthening community's resilience and reducing tensions over natural resources. Secondly, **organizational innovations for rural development improve both productivity and sustainability of agrifood systems through empowered farmers' organizations**. This approach enhances the technical and organizational

capacities of rural women through cooperative business schools, leading to more efficient value chains that sustainably use natural resources, ultimately enabling a conducive social and cultural environment for women's economic empowerment through green agri-business. The last example presented **digital innovations as accelerators of agrifood systems sustainability**. In particular, FAO Lebanon supported the country to introduce tools like the Farmers Registry Platform and the [Water Productivity open data portal \(WaPOR\)](#). The Farmers Registry improves transparency for government interventions and helps farmers access social protection schemes (see further details in box below), while the WaPOR tool involves local communities in data collection to share hydrological information transparently and establishing a water information system, contributing to water and food security

to the benefit of all stakeholders. These approaches contribute to achieving a sustainable management of natural resources for healthier ecosystems in the context of climate change, as well as to improving supply chains to enhance food and nutrition security and the resilience of the agrifood actors through the human development nexus approach, which is key in a complex and volatile environment such as the Lebanese one.

In addition to the three systemic approaches here described another key lever for agrifood systems transformation in Lebanon is **a process of inclusive national consultation through multi-stakeholder dialogues led by the Government**, aimed to reform institutional settings and policy instruments governing Lebanon's agrifood system.

FARMERS' REGISTRY IN LEBANON

EXPERIENCE /  LEBANON

In March 2023, the Ministry of Agriculture of Lebanon launched the [Farmers' Registry](#) in cooperation with FAO. Funded by the European Union (EU), the Farmers' Registry includes farm data, parcel and location identification data, farmers' livelihood conditions data, and farmers' household and socio-economic and demographic information. This initiative aims to register people practicing agricultural work and targets, in the first stage, 50 000 farmers across Lebanon. The registry will be used to manage the data of about 170 000 farmers in Lebanon, providing accurate knowledge of all the details in the agricultural sector, the cultivated areas, and the quality of the crops, and thus improving the ability to determine the quantities of production and match needs with capabilities, acting as a reference for the development and organization of the agrifood system. A communication [campaign](#) was launched by the Ministry of Agriculture to raise awareness on the importance of the registry and invite farmers to join the registry.

OUTCOMES OF THE PANEL DISCUSSION

The webinar aimed to address the following key questions:

- **What are the most effective and feasible strategies, incentives and technological solutions for greening agrifood systems in the Mediterranean region, and how can policymakers, researchers, and practitioners work together to implement them?**
- **How can stakeholders collaborate to address the challenges and gaps in knowledge, research, and innovation for sustainable agrifood systems in the Mediterranean?**

The panel discussion allowed to exchange experiences of several groups of stakeholders.

LEVERAGING POLICY FOR GREENER AGRIFOOD SYSTEMS

An overview of some of the solutions for transforming agrifood systems in the Mediterranean region was presented by:



BETA Technological Centre at Universitat de Vic-Universitat Central de Catalunya (UVic-UCC), represented by Mr Joan Colón Jordá, Head of the Sustainability Accounting and Optimization Unit.

The Centre was established in June 2014 to give a definitive boost to the research activity in the field of the environmental technologies. Its main mission is to be a relevant actor for the technological development, the improvement of competitiveness and the quality of life of rural societies. The Centre aims to become a pioneering actor in the integration of environmental, economic and social sustainability in the industrial sectors, as well as developing the ability to have a direct influence with all levels of public administration to accompany the development of environmental evidence-based policies.

The [European common agricultural policy \(CAP\)](#) entered into force in 2023 encompasses several key priorities and initiatives aimed at enhancing agrifood systems across the 27 European Union (EU) countries. The foremost concern within the EU is the imperative of **restoring biodiversity**, which has suffered degradation in Europe and necessitates immediate attention. The second pivotal aspect pertains to the **decarbonization of agriculture**: this multifaceted goal is pursued through the improvement of agricultural practices, carbon sequestration, and innovative farming techniques. Another key element of the strategy is the promotion of a **circular economy**, addressing the challenge of transitioning away from a globalized production and consumption model to one that emphasizes local production. The concept of food sovereignty, heightened in significance by the recent disruptions caused by the COVID-19 pandemic and the Ukrainian conflict, underscores the need for local production. Additionally, France advocates for responsible production, encompassing ecological considerations and ethical practices, along with the equitable treatment and well-being of workers in the agricultural sector. This emphasis on **social responsibility** aligns with the concerns of financial institutions that are increasingly attentive to the virtuousness and environmental sustainability of their investments.



Committee of Professional Agricultural Organizations - General Confederation of Agricultural Cooperatives (COPA COGECA)

represented by Mr Bernard Ader, Vice-president.

COPA represents over 22 million European farmers and their family members in a combined effort with its members to promote the best interests of the agricultural sector among the EU institutions and other relevant stakeholders. COGECA represents the general and specific interests of European agri-food, forestry, and fishery cooperatives among the EU Institutions and other socio-economic organizations contributing to European decision-making.

Strategies are being implemented to realize these objectives. **The EU utilizes a dual approach of incentivizing good practices through financing and implementing regulatory measures** to expedite progress. In France, there is a concerted effort to decarbonize various sectors, including agriculture and agrifood industries. The overarching objective is to improve production efficiency while reducing carbon energy consumption.

Notably, **carbon farming** provides an example of an approach that enhances carbon sequestration and improves soil health and biodiversity through financial compensation for the generation of carbon credits. In recent years, carbon farming has evolved into a business model incentivizing farmers to adopt sustainable agricultural practices that mitigate emissions and sequester and

store carbon, such as regenerative agriculture. In Mediterranean soils, the potential for carbon sequestration ranges from approximately 0.5 to 7 tons of CO₂ per hectare annually.³ As for the Mediterranean region, regenerative agriculture encompasses activities like preserving natural vegetation covers, adopting no-tillage or direct sowing methods, implementing organic fertilization with materials such as compost or digestates, and incorporating agroforestry. This offers numerous environmental and social benefits. In addition to carbon fixation, it has a positive impact on biodiversity and water usage, effectively reducing soil

**ORGANIZATIONAL
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INNOVATION
ACCELERATE
GREEN GROWTH**

erosion. Olive oil production and vineyards are the predominant crops for carbon credit applications in the Mediterranean, but credits have also been generated in fruit and cereal production. The strategy for carbon farming involves the generation and sale of carbon credits, with two main approaches: the action-based approach, where compensation is provided for specific actions, and the result-based approach, which requires the demonstration of emissions reduction before the issuance of credits. Currently, most initiatives operate within voluntary carbon markets. The process of obtaining carbon credits typically involves three key stakeholders: the farmer, intermediary companies managing voluntary carbon strategies, and the carbon credit buyer. Companies like BALAM Agriculture, Azolla Projects (more details in the box below), [Agreena](#), [Climate Farmers](#), and CREDITS play substantial roles in managing regenerative agriculture across Europe, acting as intermediaries between farmers and buyers. Carbon credits are then usually sold on common marketplaces such as [Climate Trade](#) and the [Bank of Climate](#).

Although progress is underway, it is essential to acknowledge that substantial work remains to be done in fully comprehending and implementing these “green” initiatives. Ongoing research efforts, involving numerous stakeholders, contribute to this endeavor. The **establishment of agricultural cooperatives emerges as a viable structure for educating, supporting, training, and facilitating the adoption of conservation agriculture and regenerative agricultural practices**. These practices entail re-learning the art of crop association, soil utilization, and crop rotation—a return to more sustainable practices that were sidelined during the era of chemical-intensive agriculture. Furthermore, the abundant solar resources available in certain regions, such as the Mediterranean one, offer opportunities to harness solar energy, which in turn can significantly enhance agricultural sustainability. The utilization of solar energy for carbon capture presents an avenue for financing and achieving a highly productive agriculture sector within the region.

CARBON FARMING INITIATIVES IN SPAIN

EXPERIENCE /  SPAIN

In Spain, the [Alliance for Regenerative Agriculture](#) is piloting a project in the regions of Catalonia, Aragón, Valencia and Andalusia, implementing regenerative agriculture in 5 000 hectares of land with the aim of selling credits by 2024, in collaboration with [Azolla Projects](#) and other stakeholders such as the BETA Technological Centre at UVic-UCC.

[BALAM Agriculture](#) is implementing the [Cultiva Carbono](#) (“carbon farming”) programme through six projects in different regions of Spain, for a grand total of almost 150 000 tons of CO₂ sequestered as of 2023. Among these, an olive oil production [farm](#) in Carmoña, near Sevilla, has already absorbed, over the last couple of years, more than 3 000 tons of CO₂ from which they have generated credits that were sold in the market at a price of EUR 35 per ton of CO₂. The project implementers are expecting to generate more than 10 000 extra credits in the next 10 years.

MOBILIZING INVESTMENTS, FINANCE AND INNOVATION FOR GREEN AGRIFOOD SYSTEMS

The perspectives on investment and innovation in green agrifood systems transformation were provided by:



[Business Council for Sustainable Development Türkiye \(SKD Türkiye\)](#)

represented by Ms Ebru Edin, Chairperson.



[Union of Mediterranean Confederations of Enterprises \(BUSINESSMED\)](#)

represented by Mahdi Khomsi, Project Coordinator.

SKD Türkiye was established in 2004 under the leadership of 13 private sector representatives and is a business association that only accepts corporate memberships. It is a platform focused on sustainability. Its member companies learn from each other, and they also inspire good practices. The members of the Council produce value together. On this platform, businesses are in contact, and they interact with strong partners. Owing to the international character of the Council, the members benefit from both global and national developments and accumulation of knowledge about sustainability. Through the expertise they obtain, they gain momentum in their own journeys of sustainability.

Created in 2002, BUSINESSMED is a platform for multilateral cooperation, promoting foreign direct investment, as well as dialogue and socio-economic integration in the Mediterranean. As one of the major economic development clusters mainly focused on the private sector, BUSINESSMED seeks to: increasing exchanges between the European Union and Mediterranean countries, enhance technological transfer and know-how toward countries in the Southern Mediterranean, increase foreign direct investment flows, implement a regulatory framework for investors, facilitate partnerships between the various business communities in the region, lobby and advocate for a wider participation of the private sector in policymaking to achieve a prosperous free-trade area in the Mediterranean.

The climate crisis has had notable repercussions on the Mediterranean agrifood sector, giving rise to various micro and macro changes, particularly in areas such as water management, food security, and nutrition. It is worth noting that the agrifood sector is accountable for nearly 18 percent of global greenhouse gas (GHG) emissions⁴ but receives disproportionately minimal funding allocated for addressing climate change. Additionally, the region faces a substantial need for water resources, with water demand exceeding 75 percent due to its dry climate, compared to the global average of 70 percent. In the case of Türkiye, nearly 30 percent of the territory is expected to be classified as arid or semi-arid in the future, and it is estimated that water usage will triplicate over the next 25 years, intensifying the demand for financing in a context of limited water resources.

Taking the case of Türkiye as an example, the country ranks eighth globally in both agricultural productivity and production value. In 2022, 16 percent of Türkiye's workforce was engaged in the agrifood sector, contributing 5.8 percent to the nation's GDP.⁵ Notably, Türkiye surpasses the global average in fruit and vegetable production. This presents a multifaceted challenge but also an opportunity for transformative action. The agrifood sector can act as a key player in the efforts countering global warming through the reduction of greenhouse emissions and the enhancement of land carbon sinks. However, the financial resources necessary to promote a sustainable transition of the agrifood sector remain largely insufficient.

To contextualize the financial landscape, it is imperative to consider the broader perspective. According to the McKinsey Global Banking Review, an annual investment of USD 1.5 trillion is the requisite for sustainable finance between 2021 and 2030.⁶ Following again the case of Türkiye, the agricultural sector falls significantly below the general investment average. In 2023, the sector accounted for a mere 1.3 percent of total investments. The credit share stands at approximately 4 percent, with 40 percent of these loans being short-term. Regrettably, agricultural incentives receive only 1 percent of the total incentives granted by the Ministry of Industry and Technology.⁷ This glaring disparity between funding and the agri-food sector's contributions to the economy and its needs is evident.

Throughout the region, the transformation of the agrifood sector and its ability to adapt to the challenges posed by the climate crisis hinge on securing the necessary financing and fostering a supportive policy environment. Essential elements such as **irrigation projects and related investments remain underfunded**. While banks have initiated various financial products, their volumes require significant expansion. To address these challenges effectively, **structured financing schemes must be established**, facilitating greater bank involvement. Additionally, a notable challenge lies in the need to expand the financial offer to loans

to predominantly small farms, which banks may not be well-equipped to handle. Government policies play a pivotal role in attracting investments. In Türkiye, for example, ongoing initiatives, including the climate law and the [Green Deal Action Plan](#), are poised to capture the attention of the private sector, producers, and financial institutions, fostering sustainable agriculture and food production. Furthermore, a similar approach is required to stimulate consumers' demand for sustainable food products, with an emphasis on encouraging producers, farmers, and food businesses to prioritize investments in sustainable agriculture. Once again, one illustrative example of attracting investments is carbon farming, where farmers can certify and market the carbon captured through their practices. Such opportunities can incentivize farmers to invest in sustainable agriculture. Other prospective investment areas encompass increasing agricultural equipment production, adopting innovative agricultural practices, transitioning to electric or hydrogen-fueled refrigerated vehicle fleets, establishing cold storage facilities, adopting environmentally friendly packaging materials, and embracing biogas technology. Solar energy also emerges as a promising avenue for agricultural production, with solar panels and solar power plants receiving strong support from banks for financing, offering substantial potential for investments.

In the Mediterranean region, the majority of the actors involved in agri-food production are small-scale or family-owned enterprises. Consequently, their access to financing, necessary for enhancing agricultural efficiency through investments and operational costs, is severely limited. It is, therefore, important that efforts be conducted in **partnership with diverse stakeholders** from different nations, all geared towards

facilitating innovation among SMEs and providing them with the necessary technical and financial support. To this effect, in late 2021, BUSINESSMED joined the Mediterranean Innovation Partnership (MIP) Network led by CIHEAM, aimed at bolstering the Mediterranean entrepreneurial and innovation ecosystem. Within this framework, an annual report comprehensively assesses the evolving agri-food entrepreneurship landscape in the region and explores how the younger generation can stimulate innovation within agrifood companies. It is known that most Mediterranean small and medium-sized enterprises (SMEs) are grappling with pressing issues such as competitiveness, sustainability, internationalization, and innovation. These challenges necessitate novel solutions to facilitate their growth and longevity. Simultaneously, the pursuit of a greener economy and the preservation of natural assets offer both economic and environmental advantages. To harness this potential, initiatives are being implemented in the Mediterranean to promote innovative business models within the sphere of sustainability (see box below).

FINANCIAL INNOVATION IS FUNCTIONAL TO INCENTIVIZING SUSTAINABLE AGRIFOOD PRACTICES

“INVESTMED” PROJECT: INNOVATIVE SUSTAINABLE START-UPS FOR THE MEDITERRANEAN

EXPERIENCE /  MEDITERRANEAN

[INVESTMED](#) is an EU-funded project (EUR 3.4 million), under the [ENI-CBC Med Programme](#), to support the development of new, sustainable entrepreneurship and business initiatives by facilitating access to new markets with the final goal of generating increased economic opportunities and jobs for young men and women. This endeavor encompasses diverse domains, including the green economy, agri-food sector, and the blue economy. The project is designed to address both economic and environmental priorities and is focused on fostering sustainable business practices in Egypt, Lebanon, and Tunisia. This project is an example of successful collaboration with universities and research centers to foster the development of new business models in the sustainability sector. Moreover, essential financial support has been provided, recognizing the pivotal role of funding in ensuring sustainability. To further extend the impact, support has been allocated to three business support organizations in replicating this successful approach, thus broadening the reach and aiding a more extensive demographic. Furthermore, 38 sub-grants have been allocated to SMEs seeking to innovate and enhance their technical capacities, enabling them to access new markets and augment their innovation efforts. Support extends to innovative business models, with particular emphasis on areas such as circular supply chains, which prioritize waste reduction, resource optimization, and the promotion of recycling and material reuse, as well as initiatives aimed at reducing food waste and promoting upcycling.

“NATIOONS” PROJECT: SUPPORTING THE SOIL DEAL FOR EUROPE ACROSS NATIONAL COMMUNITIES

EXPERIENCE /  MEDITERRANEAN

The main objective of [NATIOONS](#) (funded by the EU with EUR 3 million) is reaching out to and preparing regional and national stakeholders to apply for and implement soil health Living Labs, facilitating the deployment of the EU Soil Mission across European regions during most of the first ‘induction and pilot’ phase (2021-2025). The belief is that Living Labs, when comprehensively understood and effectively applied within the tertiary education sector, can serve as a pivotal tool for fostering collaboration and innovation. These Living Labs bring together key stakeholders to address pertinent challenges, with a particular emphasis on soil-related issues. By promoting this approach, the aspiration is to unlock the potential of collective, participatory ideation, involving diverse actors within the ecosystem. Such an approach can yield impactful solutions for the agrifood sector. In pursuit of these objectives, active efforts are made to organize national engagement events, create matchmaking platforms to establish Living Labs, and facilitate access to EU funds, particularly through the Horizon programme.

MEDITERRANEAN INNOVATION PARTNERSHIP (MIP) NETWORK

COLLABORATION /  MEDITERRANEAN

The [Mediterranean Innovation Partnership \(MIP\) Network for youth entrepreneurship and technology transfer in the agrifood sector](#) aims at favouring knowledge sharing, cogeneration and transfer for entrepreneurship, business creation and innovation. By creating a Mediterranean Innovation Ecosystem, MIP strives to enhance the collaboration among public institutions and Innovation Support Organizations (ISOs) to support the creation and innovation of agrifood enterprises of young entrepreneurs. Established in 2016 and coordinated by CIHEAM Bari, it is the first Mediterranean Network for youth entrepreneurship and technology transfer in the agrifood sector among the following Mediterranean countries: Albania, Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Tunisia and the International Intergovernmental Organization Standing Working Group in Southeastern Europe. Other international organizations that have joined the MIP network are: the International Center for Agricultural Research in the Dry Areas (ICARDA), the Euro-Mediterranean University (EMUNI), the Lebanese Agricultural Research Institute (LARI), BusinessMed, the Mediterranean Universities Union (UNIMED) and the International Network for Small and Medium Sized Enterprises (INSME).

THE CASE OF JORDAN: A COMPREHENSIVE APPROACH FOR MORE SUSTAINABLE AND RESILIENT AGRIFOOD SYSTEMS

An example of the importance of policy actions to enable agrifood systems transformation was provided by:



[Ministry of Agriculture of Jordan](#)

represented by Ms Nada AlFrihat, Head of the Organizations Department in the Directorate of Agreements and International Cooperation.

The Ministry of Agriculture of Jordan plays a pivotal role in the country's efforts to ensure food security, promote sustainable agricultural practices, and enhance the livelihoods of its rural communities. With a rich history deeply rooted in agriculture, Jordan recognizes the significance of this sector in its economy and society. The Ministry is responsible for developing and implementing agricultural policies, supporting farmers, and advancing research and innovation in the agricultural domain. It strives to strike a balance between traditional farming methods and modern techniques, addressing challenges such as water scarcity and climate change while fostering agricultural growth and resilience in the Kingdom of Jordan.

In Jordan, the government has undertaken several **strategic initiatives** to enhance the resilience and sustainability of its agrifood systems. These initiatives encompass various aspects, including water management, agricultural modernization, support for local production, food security, healthier eating promotion, reduction of food waste, and strengthening food safety regulation. One significant development in this regard is the identification of the agrifood sector as one of the four growth pillars in the [Government's Economic Priorities Program 2021-2023](#). As a result, the government launched the *National Plan for Sustainable Agriculture (2022-2025)* in January 2022 (see box below), and the first [National Food Security Strategy \(2021-2030\)](#) in June 2021. Furthermore, in the framework of the UN Food Systems Summit process started in 2021, Jordan developed its [national pathway](#) for agrifood systems transformation. In parallel, the Ministry of Agriculture is working to **restructure agricultural incentives and subsidies** to encourage productivity and water use efficiency, facilitate shifts in cropping patterns, and promote the adoption of water-efficient and climate-smart technologies. These incentives may include subsidized loans, competitive loan conditions, or investment grants for climate-smart practices. In 2022, the Ministry allocated approximately JOD 2.5 million (USD 3.5 million) to subsidize the interest rates of agricultural loans for around 3 000 projects related to irrigation water efficiency technology, with an estimated value of about JOD 28 million (USD 39.5 million).

Furthermore, [the World Bank](#) is supporting the Government of Jordan in adopting a multi-faceted approach to boosting food system resilience. This support includes investments in climate-smart agriculture production that are creating jobs, building capacity of a new generation of farmers and agricultural specialists to spearhead water efficient and climate resistant farming techniques through the continual adoption of good practices

and innovations. All of this is aligned with Jordan's new *National Food Security Strategy* (see above). As part of this endeavour, the World Bank supported the [Agriculture, Resilience, Value Chain Development and Innovation \(ARDI\) programme](#), launched in early 2023, which will provide about 30 000 farming households with financing to adopt climate smart agricultural practices. The programme builds on the ongoing pilot project [Exploring High-Value, Socially Inclusive and Water Efficient Agriculture](#), which promotes an innovative social enterprise model for commercial fruit and vegetable production in marginalized areas using highly water efficient hydroponic technology. The programme is expected to generate around 12 000 employment opportunities, particularly for women and youth.

Additionally, efforts are being made to address food loss and waste issues. Jordan faces challenges related to food loss and waste, with an estimated 1 million tons of wasted food reported in 2021 by UNEP.⁹ To tackle these challenges, the

Ministry of Agriculture launched the *"No food waste initiative"* in 2022, with the support of FAO and the World Food Programme (WFP) aiming to address the root causes of waste and explore ways to utilize waste as a resource for purposes such as feed, energy, and fertilizer. The initiative is aligned with the *National Food Security Strategy* and aims to roll out a number of interventions to provide an in-depth understanding of the issue of food loss and waste, raise awareness, and foster positive and responsible production and consumption behavior. Through a comprehensive agrifood systems approach, the initiative will embrace innovative ways to achieve its goals. Furthermore, also under the framework of this initiative and in collaboration with FAO and WFP, the Ministry of Agriculture launched an [enabler project](#) aimed at empowering and supporting local initiatives that work on food waste management in Jordan.

A SUPPORTIVE POLICY ENVIRONMENT IS KEY TO UNLOCKING FINANCE FOR TRANSFORMATION

Ministry of Agriculture launched the *"No food waste initiative"* in 2022, with the support of FAO and the World Food Programme (WFP) aiming to address the root causes of waste and explore ways to utilize waste as a resource for purposes such as feed, energy, and fertilizer. The initiative is aligned with the *National Food Security Strategy* and aims to roll out a number of interventions to provide an in-depth understanding of the issue of food loss and waste, raise awareness, and foster positive and responsible production and consumption behavior. Through a comprehensive agrifood systems approach, the initiative will embrace innovative ways to achieve its goals. Furthermore, also under the framework of this initiative and in collaboration with FAO and WFP, the Ministry of Agriculture launched an [enabler project](#) aimed at empowering and supporting local initiatives that work on food waste management in Jordan.

Launched in January 2022, the [National Plan for Sustainable Agriculture](#) focuses on addressing the challenges faced by the agrifood sector in Jordan. These challenges include climate change, limited water resources, regional instability, inadequate financial resources for agricultural capital investments, a lack of marketing opportunities, and underdeveloped farmer organizations. To address these challenges, the plan outlines three primary objectives:

1. Improving farmers' living conditions by reducing production costs, enhancing product quality, opening new export markets, attracting private investments into the value chain, supporting women and youth in the sector, and improving agricultural risk management.
2. Increasing the sector's productivity by introducing efficient crops, partnering with the private sector to expand agricultural activities in new areas, enhancing veterinary services, rehabilitating arid land in the Badia region, improving agricultural extension services (including digital means), and implementing afforestation programs.
3. Promoting efficient water and irrigation resource use, including the promotion of water use efficiency technologies, rainwater harvesting, and climate-smart agricultural practices.

To achieve these objectives, the plan proposes policy reforms and investments across six priority areas, involving various government agencies such as the Ministry of Agriculture, the Ministry of Finance, the National Agricultural Research Center, the Agricultural Credit Corporation, municipalities, donors, and the private sector. In total, the plan encompasses 75 activities within these six priority areas.

COLLABORATIVE SOLUTIONS TO INTERCONNECTED CHALLENGES

The closing remarks were delivered by:



Union for the Mediterranean (UfM)

represented by Mr Giuseppe Provenzano, Project manager.

UfM is an intergovernmental Euro-Mediterranean organisation which brings together all countries of the European Union and 15 countries of the Southern and Eastern Mediterranean. UfM's mission is to enhance regional cooperation, dialogue and the implementation of projects and initiatives with tangible impact on citizens, with an emphasis on young people and women, in order to address the three strategic objectives of the region: stability, human development and integration. UfM activities in the area of Higher Education and Research contribute to promoting regional cooperation in the fields of higher education, research and innovation, as well as in vocational training and mobility, to achieve a positive agenda for the youth in the Mediterranean by increasing employability, promoting intercultural dialogue and preventing extremism.

Agrifood systems in the Mediterranean are marked by the interconnectedness of various critical issues, including the environment, water, research, innovation, and education. These interconnections are reflected in regional programmes such as UfM's [Research & Innovation Agenda](#) and the [GreenerMed Agenda](#). **Research, innovation, knowledge, science, and skills constitute indispensable tools that enable the attainment of green growth.** The significance of training and skills development becomes particularly pronounced in a region where a substantial portion of the population (approximately 70 percent⁹) is under the age of 30. Agrifood systems remain a cornerstone for national growth in many governments' strategies; however, old and new challenges persist, calling for a re-thinking of such systems. The presence of 180 million people facing water scarcity,¹⁰ declining crop yields due to climate change and a warming Mediterranean

Sea (twice the global average rate compared to the pre-industrial period), and persistently limited access to finance and technology for smallholders can be tackled through new employment and educational opportunities that truly accelerate agrifood systems transformation, targeting a burgeoning young population.

This situation underscores the **need to act with urgency towards a collaborative, multi-stakeholder approach** to achieve a sustainable agrifood systems transformation, involving international organizations, governments, private sectors, cooperatives, universities, and research centers. In this context, the SFS-MED Platform (see box below) serves as a common ground for regional dialogue aimed at enhancing the innovation, environmental sustainability, and social consciousness in the pursuit of a more sustainable regional food system.

The [SFS-MED Platform](#) is a multi-stakeholder initiative co-led by FAO, CIHEAM, UfM and PRIMA as an affiliated project of the One Planet Network's SFS Programme. The Platform is a **forum** for multi-stakeholder dialogue and collaboration, a **network** for strengthening knowledge sharing and capacity building, and a **catalyst** for regional cooperation on priority themes for sustainable agrifood systems transformation in the Mediterranean. The SFS-MED Platform is open to all agrifood systems stakeholders in the Mediterranean region and aims to create a community to leverage and share the knowledge, experience and skills of agrifood systems actors across the Mediterranean region towards concerted action for the sustainable transformation of agrifood systems. Contact the [SFS-MED Platform's Coordination Desk](#) for further information about the modalities of engagement.

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NOTES

¹United Nations, Department of Economic and Social Affairs, Population Division. 2019. *World Population Prospects 2019: Highlights*. ST/ESA/SER.A/423. New York, United Nations. https://bit.ly/UNDESA_prospect

²See note 1.

³McDonald, H., Freluh-Larsen, A., Lóránt, A., Duin, L., Pyndt Andersen, S., Costa, G., and Bradley, H. 2021. *Carbon farming – Making agriculture fit for 2030, Study for the committee on Environment, Public Health and Food Safety ENVI*. Luxembourg, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament. <https://bit.ly/48GlqKc>

⁴Türkiye Bankalar Birliği (TBB). 2023. *Tarım Sektörü Raporu*. İstanbul, Türkiye, TBB. <https://bit.ly/3Qp9Bj1>

⁵See note 4.

⁶McKinsey & Company. 2022. *Banking on a sustainable path. Global Banking Annual Review 2022*. New York, USA, McKinsey & Company. <https://mck.co/45gZjqQ>

⁷See note 4.

⁸United Nations Environment Programme (UNEP). 2021. *Food Waste Index Report 2021*. Nairobi, UNEP. <https://bit.ly/3sbWiay>

⁹Blöss-Widmer, I. 2022. Make Way for Numbers: The Age Race in the Mediterranean. In: *IEMed Mediterranean Yearbook 2022*. Barcelona, Spain, European Institute of the Mediterranean (IEMed). <https://shorturl.at/iEGHM>

¹⁰MedECC. 2020. *Climate and Environmental Change in the Mediterranean Basin – Current Situation and Risks for the Future. First Mediterranean Assessment Report*. [Cramer, W., Guiot, J., Marini, K. (eds.)]. Marseille, France, UfM, Plan Bleu, UNEP/MAP. <https://doi.org/10.5281/zenodo.4768832>

RESOURCES

The recording of the webinar is available at this [link](#) and the agenda of the webinar is available at this [link](#).

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