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BLUE TRANSFORMATION: STRATEGIES AND ACTIONS FOR MORE SUSTAINABLE AGRIFOOD SYSTEMS IN THE MEDITERRANEAN

WEBINAR OUTCOMES

KEY MESSAGES -

- The Mediterranean fisheries and aquaculture sectors are crucial for the region's aquatic food systems, supporting food security, enhancing livelihoods and protecting heritage.
- Blue Transformation outlines a vision to expand aquatic food systems and increase their contribution to nutritious and affordable healthy diets for the most vulnerable, while fostering equitable growth, especially for those communities that depend on fisheries and aquaculture.
- Propelling sustainable growth of fisheries and aquaculture in the Mediterranean region demands concerted efforts in investments, governance, technological innovation, and knowledge exchange to address a series of intricate challenges and leverage promising opportunities. Blue governance and policy reforms can encourage public-private partnerships and private investment in innovative projects. In the Mediterranean, science-based management plans and the institution of dedicated fisheries restricted areas have been instrumental in decreasing overexploitation in fisheries, while also fostering an enabling environment for the sustainable development of aquaculture.
- Investing in scientific and technological research for fisheries, aquaculture and related marine sectors is essential to stimulate innovation that promotes environmental sustainability and economic resilience as a driver of Blue Transformation in the Mediterranean. Governments, academic institutions, and the private sector should foster collaboration to fund research and development, while innovation centres and incubators are crucial to accompany startups.
- Tailored education pathways are crucial to align academic efforts with labour market needs and support youth employment in Blue Transformation-related sectors.
- Multistakeholder and community-driven approaches are effective in fostering collaboration, dialogue, knowledge exchange, and partnership across sectors and regions. Engaging coastal populations in the design and implementation of interventions helps sustained change towards adopting alternative economic models that preserve marine ecosystems and biodiversity.
- Enhanced regional cooperation is essential to integrate agrifood and blue sectors, advancing the Blue Transformation roadmap towards holistic regional development and achieving the Sustainable Development Goals (SDGs).

SPEAKERS



Moderator: Yasmine Seghirate El Guerrab Administrator, CIHEAM



Almotaz Abadi

Deputy Secretary General, Water, Environment and Blue Economy, Union for the Mediterranean (UfM)



Teodoro Miano

Secretary-General, CIHEAM



Delilah Al Khudhairy

Director for Maritime Policy and Blue Economy, Directorate-General for Maritime Affairs and Fisheries (DG MARE) of the European Commission



Miguel Bernal

Executive Secretary, General Fisheries Commission for the Mediterranean (GFCM), FAO



Mounir Ghirbi

Director of International Cooperation and Research Promotion, National Institute of Oceanography and Applied Geophysics of Italy (OGS)



Rania Koussani

Agroeconomist Engineer, CSR Advisor, German Development Cooperation (GIZ) Tunisia office Project manager, <u>DEVLOK</u>



Nesrine Ziad

Associate, <u>Leancubator</u>



Mohammad Al-Sakran

Executive Director, Agaba Development Corporation (ADC) - UfM Jordan Co-Presidency



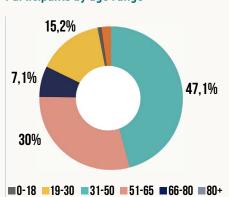
Roberta De Palma

Chief Technical Advisor, United Nations Industrial Development Organization (UNIDO)

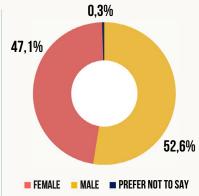
Participation statistics | 323 participants from 54 countries. Of which, 238 participants from 16 Mediterranean countries.

Number of participants by stakeholder group ACADEMIA AND RESEARCH INSTITUTION 141 INTERNATIONAL ORGANIZATION (INCL. UN) **166** PRIVATE SECTOR 47 33 CSO/NGO LOCAL OR NATIONAL GOVERNMENT 22 AND INSTITUTIONS OTHER 12 FINANCIAL INSTITUTIONS 2

Participants by age range



Participants by gender



THE "BI LIF" IN AGRIFOOD SYSTEMS

The opening remarks provided the institutional background for this webinar, highlighting the important collaboration among the SFS-MED Platform and the European Commission's (EC) Directorate-General for Maritime Affairs and Fisheries (DG MARE). The remarks were delivered by:



Directorate-General for Maritime Affairs and Fisheries (DG MARE)

represented by Ms Delilah Al Khudhairy, Director for Maritime Policy and Blue Economy.

DG MARE develops and carries out the European Commission's policies on maritime affairs and fisheries, by ensuring that the ocean resources are used sustainably and that coastal communities and the fishing sector have a prosperous future, promoting maritime policies and stimulating a sustainable blue economy, as well as promoting ocean governance at international level. DG MARE's main objectives are: to protect the maritime environment while maintaining Europe's competitiveness, to implement the new common fisheries policy (CFP), to leverage the potential of Europe's seas to create sustainable jobs that preserve natural resources, and to establish rules for the management and governance of the world's oceans together with global partners.



Agaba Development Corporation (ADC)

represented by Mohammad Al-Sakran, Executive Director. ADC represented the Hashemite Kingdom of Jordan.

Launched in 2004 and owned by the Government of Jordan and the Agaba Special Economic Zone Authority, ADC is mandated to build new infrastructure and required superstructure, expand existing utilities, create necessary business enablers and manage/operate key facilities for the special economic zone. It strives to develop assets and optimize private sector participation in their development and management to stimulate the economy and promote growth and development in Jordan. Among its key activities, ADC has launched a number of enabler projects aiming at supporting the business environment in Agaba and formed several public and private partnerships.



Union for the Mediterranean (UfM)

represented by Mr Almotaz Abadi, Deputy Secretary General, Water, Environment and Blue Economy.

UfM is an intergovernmental Euro-Mediterranean organisation which brings together all countries of the European Union and 16 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, inclusive development and integration. The organisation champions women's rights, job creation, fosters cross-country connectivity efforts and addresses environmental and climate emergencies. The UfM also prioritises grant schemes and programmes to encourage entrepreneurship and job opportunities for young people, recognising their crucial role in shaping the region's future. The organisation is working on a unique instrument to accelerate investment in the blue economy and the creation of a regional civil protection instrument.



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represented by Mr Miquel Bernal, Executive Secretary.

The GFCM is a regional fisheries management organization established in 1949 under the provisions of Article XIV of the Constitution of FAO. With 23 contracting parties, including the EU, and six cooperating non-contracting parties, its main objective is to federate efforts of countries towards the conservation and the sustainable use of living marine resources, as well as the sustainable development of aquaculture, in the Mediterranean and in the Black Sea. It plays a critical role in fisheries governance and has the authority to make binding recommendations for fisheries conservation and management and aquaculture development.

The Mediterranean Sea has historically played a crucial role in the region's societies, economies, and agrifood systems. As per the UfM Ministerial Declaration on Sustainable Blue Economy¹ adopted in 2021 by the 43 Euro-Mediterranean countries, the sustainable blue economy encompasses a wide range of maritime and coastal activities that aim to balance economic growth, improved livelihoods, and social inclusion through the protection of marine and coastal ecosystems and biodiversity, the sustainable use of aquatic resources, as well as climate change mitigation and adaptation. Perfectly aligned with the sustainable blue economy agen-

da, the concept of "Blue Transformation" seeks to address key objectives such as sustainable aquaculture expansion, effective fisheries management, and value chain development. Blue Transformation outlines a vision to expand aquatic food systems and increase their contribution to nutritious and affordable healthy diets for the most vulnerable, while fostering equitable growth, especially for those communities that depend on fisheries and aquaculture.2

Fisheries and aquaculture are essential drivers of the Blue Transformation and key components of agrifood systems in the Mediterranean. With almost two million tonnes of combined production annually and employment for more than 700 000 people with a revenue of around USD 20.5 billion along the value chain,³ these sectors play a fundamental role in the region's agrifood systems, livelihoods and heritage, contributing to food security and better nutrition, aligning with the Mediterranean diet.

Sustainable fisheries are essential to ensure healthy fish stocks, which in turn support the livelihoods of coastal communities as well as job security along the entire value chain and the sector's future profitability. Consequently, concerted efforts are needed to develop science-based management plans, effectively implement capacity development programs, and adopt measures to minimize fisheries' impact on marine ecosystems, particularly vulnerable species. Capitalizing on innovation, digitalization, promoting best practices, inclusive policies, and social protection frameworks are paramount. Upholding compliance standards, such as combating illegal, unreported, and unregulated (IUU) fishing, and adhering to environmental protection conventions, is key to safeguard the interests of fishers and resource sustainability.

Aquaculture, when managed appropriately, contributes to nature preservation, restoration, and climate change adaptation and mitigation. It offers diverse ecosystem solutions, including extensive pond aquaculture and mollusc and algae farming, which yield not only food but also raw materials for various industries. Several regional framework documents provide guidance for the sector, such as the General Fisheries Commission for the Mediterranean's (GFCM) 2030 Strategy for sustainable fisheries and aquaculture in the Mediterranean and the Black Sea (GFCM 2030 Strategy), 4 the EC's Communication on a new approach for a sustainable blue economy in the EU⁵ and the UfM Ministerial Declaration on Sustainable Blue Economy.6 Through collaborative efforts among countries and regional stakeholders, as well as strategic interventions, significant progress has been made in the Mediterranean region over the past decade. According to the latest edition (2023) of The State of Mediterranean and Black Sea Fisheries,7 aquaculture production has nearly

doubled in the last decade, reaching an annual volume of 870 000 tonnes in 2021 compared to 450 000 in 2011, while the level of overexploitation in fisheries has decreased, falling from 73 percent in 2020 to 58 percent in 2021, representing the lowest rate observed since the trend in overexploitation was first reversed a decade ago. This trend is also reflected at a global level, where, for the first time ever, farmed aquatic animals exceeded captured aquatic animals by volume.8 Effective science-based management plans and the institution of dedicated fisheries restricted areas, supported by scientific research and capacity development initiatives, have been instrumental in achieving these outcomes. Furthermore, efforts have been prioritized to enhance other actors along the value chain of fisheries and aquaculture products, including promoting consumer awareness and empowering women in the sector.9 Albeit being central to agrifood systems in practice, a recent study¹⁰ of the National Pathways for Food Systems Transformation deriving from the UN Food Systems Summit (UNFSS) process in the Mediterranean has highlighted that a disconnect remains between food systems and the blue sectors of fisheries and aquaculture. In most National Pathways, marine life and aquatic resources are rarely emphasized, as agrifood systems are generally associated with land-based farming in such documents. To overcome this gap, international collaboration and cooperation among regional partners through bodies such as FAO's GFCM, the United Nations Environment Programme's Mediterranean Action Plan (UNEP-MAP), the UfM Stakeholder Conference on Sustainable Blue Economy and the European Commission's DG MARE can play a pivotal role in bridging the gap between Blue Transformation and the food systems agenda in the Mediterranean region. These are key actors to boost the progressive integration of fisheries and aquaculture into a wider systemic perspective, by building alliances that address common environmental, economic and social priorities, as a substantial contribution to the achievement of the Sustainable Development Goals (SDGs).

GFCM 2030 STRATEGY FOR SUSTAINABLE FISHERIES AND AQUACULTURE IN THE MEDITERRANEAN AND THE BLACK SEA

COLLABORATION / MEDITERRANEAN & BLACK SEA

The <u>GFCM 2030 Strategy</u> for sustainable fisheries and aquaculture in the Mediterranean and the Black Sea¹¹ promotes an integrated approach to addressing key challenges in fisheries and aquaculture management. The GFCM 2030 Strategy is composed of five targets, covering 1) fisheries and ecosystems, 2) compliance and enforcement, 3) aquaculture, 4) livelihoods and 5) capacity development. The GFCM 2030 Strategy is the key tool to implement the five commitments of the Malta MedFish4Ever Ministerial Declaration¹² signed by 16 countries in 2017. The five commitments are: enhance the data collection and scientific evaluation of the status of resources in the region; establish ecosystem-based fisheries management frameworks; develop a culture of compliance and eliminate IUU fishing; support sustainable small-scale fisheries and aquaculture; and increase solidarity and cooperation in the Mediterranean. This integrated strategy takes into consideration environmental and ecosystem dimensions, as well as livelihoods, and the need for ensuring capacity development across this region.

THE REGIONAL PLAN OF ACTION FOR SMALL-SCALE FISHERIES IN THE MEDITERRANEAN AND THE BLACK SEA

COLLABORATION / O MEDITERRANEAN & BLACK SEA

The Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF) is a historic political commitment setting out a ten-year roadmap towards the long-term environmental, economic and social sustainability of the small-scale sector. Signed as a Ministerial Declaration in September 2018, it adapts to the context of the Mediterranean and the Black Sea the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines), which were endorsed by FAO as the first international instrument dedicated entirely to the small-scale fisheries sector. The plan sets out the specific principles, objectives and concrete actions that are needed over the following decade to guarantee a sustainable future for small-scale fisheries in the region. It takes a holistic view of the small-scale sector and the vital role it plays in the economic, social and cultural context of the Mediterranean and the Black Sea, including all these dimensions in its strategic aims. The fishers themselves, and the communities they support, are at the heart of the plan. It is the only regional plan of action in the world to tailor the SSF Guidelines to the regional level. It underwent a mid-term review in 2024 in the margins of the 36th session of the Committee on Fisheries (COFI).

UfM STAKEHOLDER CONFERENCE ON SUSTAINABLE BLUE ECONOMY

COLLABORATION / O MEDITERRANEAN

Held in Athens on 19 and 20 February 2024, the <u>Conference</u> convened over 350 representatives from maritime industries, academia, public authorities, companies, and non-profit organizations to evaluate the progress made within the framework of the ten Sustainable Blue Economy priority areas adopted with the Ministerial Declaration of 2021 and to discuss the way forward. The main messages emerging from the Conference emphasized the need for a level playing field, common rules, improved regulation, capacity building, data-driven interventions, and acknowledging regional disparities. Furthermore, the importance of combining a process/ project approach with inter-programme coordination was deemed crucial to achieve the Sustainable Blue Economy's objectives set at regional level, backed by the strong political/policy endorsement of the relevant Ministerial Declaration and Roadmap.

OUTCOMES OF THE PANEL DISCUSSION

The webinar aimed to address the following key questions:

- What are the most effective and viable measures, strategies and incentives to accompany a Blue Transformation in the Mediterranean, and how can stakeholders collaborate to implement them?
- How can regional collaboration for a Blue Transformation in the Mediterranean address the main challenges to the effective implementation of such measures?

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

SUSTAINABILITY AND CIRCULARITY IN FISHERIES AND AQUACULTURE

An overview of some of the solutions for introducing more sustainable practices in the Mediterranean aquatic food systems was presented by:



ENTORGANIZATION United Nations Industrial Development Organization (UNIDO)

represented by Ms Roberta De Palma, Chief Technical Advisor.

UNIDO is a specialized agency of the United Nations with a unique mandate to promote, dynamize and accelerate industrial development. Its mandate is reflected in SDG 9: "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation", yet UNIDO's activities contribute to all the SDGs. UNIDO's vision is a world without poverty and hunger, where industry drives low-emission economies, improves living standards, and preserves the liveable environment for present and future generations, leaving no one behind. UNIDO supports its 172 Member States through technical cooperation; action-oriented research and policy-advisory services; normative standards-related activities; and fostering partnerships for knowledge and technology transfer. The organization's focus areas are: ending hunger by helping businesses from farm to fork; stopping climate breakdown by using renewable energy and energy efficiency to reduce industrial greenhouse gas emissions; and supporting sustainable supply chains so that developing country producers get a fair deal and scarce resources are preserved.

Propelling sustainable growth of fisheries and aquaculture in the Mediterranean region demands concerted efforts in investment, technological innovation, and knowledge exchange to address a series of intricate challenges and leverage promising opportunities. UNIDO is one of the implementing partners of the SwitchMed initiative (see box below), launched in 2013 and aimed at fostering the blue economy by catalysing the transformation of fisheries, fish processing, and aquaculture industries towards more sustainable and circular business models. A comprehensive study¹³ conducted under this programme has underscored several critical areas requiring attention. Firstly, the technological advancement in aquaculture practices in the region remains notably below global best practices, particularly impacting feed conversion rates, which constitute a significant portion (over 60 percent) of operational costs. Enhancing these rates not only

promises substantial cost reductions but also bolsters environmental sustainability by curbing resource inefficiencies and aquatic pollution. Furthermore, the sector's heavy reliance on imported juveniles and fish feed poses inherent risks, highlighting a pivotal opportunity for local investment in juvenile production and feed manufacturing to fortify the industry's resilience and stimulate innovation. In parallel, the fish processing industry, although well-established, exhibits considerable gaps in energy, water, and

material efficiency compared to leading international standards. Moreover, a substantial volume of **fish byproducts**, traditionally utilized for fish meal and oil production, presents a ripe opportunity for the industry to explore more profitable applications and tap into new markets.

In addition to the abovementioned study, efforts to achieve both competitiveness and sustainability in Mediterranean aquaculture and fish processing industries are exemplified through targeted initiatives and case studies in the framework of Switch-Med. In **Tunisia, innovative approaches to aquaculture** involve piloting smart solutions, integrating advanced technologies such as automatic feeding systems and IoT-connected underwater cameras with AI. These technologies ensure precise and timely feeding based on real-time fish behaviour analysis, significantly

improving feed efficiency and operational productivity. Crucially, the design of these solutions considers local affordability, aiming to enhance technological adoption across the aquaculture sector in the region. Meanwhile, in **Morocco**, comprehensive resource efficiency audits within vertically integrated fish processing facilities have identified around 50 optimization measures. These audits span fish freezing, canning, and fish meal processing, highlighting opportunities to streamline energy, water, and material usage. The resulting improvements not only reduce operational costs but also enhance environmental sustainability, demonstrating a return on investment within approximately two years for many measures. Additionally, the exploration for alternative valorisation routes for fish byproducts in Morocco has shown promising economic viability. Ventures into producing collagen from skin and scales, high-quality fish meal for human

consumption, and hydrolysate for aquaculture and agriculture have proven economically attractive, with short payback periods, ranging from 0.5 to 2.6 months depending on the product. Scaling these initiatives requires extensive knowledge-sharing and capacity-building efforts within the industry, alongside strategic governmental support to incentivize innovation and facilitate market entry into global sectors like nutraceuticals and pharmaceuticals.

Another key opportunity in the Mediterranean could consist in **developing key indicators to measure the sustainability of the blue economy**, ensuring a balanced representation of its economic, environmental, and social dimensions. To this effect, a framework of indicators was proposed in a recent study by Plan Bleu. ¹⁴ Regional cooperation further accelerates the adoption of sustainable practices across Mediterranean fisheries and aquaculture, positioning these industries for long-term economic resilience and environmental stewardship. Collective commitment to advancing sustainable aquaculture practices is underscored by bodies such as the GFCM (see box above), the <u>FAO Committee on Fisheries' (COFI) Sub-Committee on Aquaculture</u> and regional cooperation frameworks like the <u>Accelerating Sustainable Aquaculture in the western Mediterranean (AquaWest) initiative</u>.

SUSTAINABLE FISHERIES AND AQUACULTURE DEMAND INVESTMENT IN INNOVATION AND KNOWLEDGE EXCHANGE

SWITCHING TO A CIRCULAR ECONOMY IN THE MEDITERRANEAN (SWITCHMED) PROJECT

EXPERIENCE / 🔾 MEDITERRANEAN

The <u>SwitchMed</u> initiative is funded by the European Union (EU) and implemented by UNIDO, the United Nations Environment Programme (UNEP), UNEP/MAP and the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC), in close coordination with the EC's Directorate-General for Neighbourhood and Enlargement (DG NEAR). Launched in 2013 to speed up the shift to sustainable consumption and production patterns in the Southern Mediterranean through the promotion of circular economy approaches, the programme aims at achieving productive, circular and sharing economies in the Mediterranean by changing the way goods and services are consumed and produced so that human development is decoupled from environmental degradation. SwitchMed operates in Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine and Tunisia, supporting and connecting stakeholders to scale-up eco and social innovations. The initiative is fully aligned with regional frameworks, such as the EC's Circular Economy Action Plan for a cleaner and more competitive Europe, and contributes to UfM Working Groups on blue economy and on environment and climate change.

THE ROLE OF BUSINESS AND INNOVATION FOR BLUE TRANSFORMATION

The perspectives on leveraging innovation and startups for blue transformation were provided by:

LEANCUBATOR Leancubator

represented by represented by Ms Nesrine Ziad, Associate.

Leancubator is an innovation hub and incubator based in Algeria and specialised in supporting sustainable and innovative projects from design to implementation of programmes in multiple sectors including the blue economy, green economy, food tech, and fintech.

The Mediterranean region is witnessing significant developments in its blue economy through innovation, which is vital for fostering economic growth sustainably and enhancing the resilience of communities reliant on maritime resources. Current innovation efforts include continuous investment in **offshore wind, wave, and tidal energy production**, the adoption of innovative practices in fisheries and aquaculture such as **integrated multi-trophic aquaculture**, and research and development in **marine biotechnology** aimed at discovering bioactive compounds and creating bioplastics and pharmaceuticals from marine organisms. Additionally, **sustainable tourism** initiatives, particularly marine ecotourism and pescatourism, aim to support local economies while preserving coastal and maritime environments through maritime spatial planning.

Key players in this innovation landscape include research and development departments of major industrial groups, researchers, innovation centres, startups, and the entire ecosystem that facilitates this dynamic. Startups face several challenges, including achieving product-market fit, understanding industry challenges, accessing funding, building capacity, and establishing networks for partnerships. However, several opportunities are on the horizon. There is a growing interest from investors, financial institutions, and governments in sustainable blue economy projects, which can translate into specialized venture capital funding, support for crowdfunding initiatives, and easier access to bank loans and public subsidies for innovative companies. Investing in scientific and technological research related

to the blue economy is essential to stimulate innovation, with governments, academic institutions, and the private sector collaborating to fund research and development. Strengthening the role of innovation centres and incubators is also crucial, as they equip startups with necessary resources through capacity-building programs, facilitate access to funding, and help build valuable networks.

Fostering an open innovation dynamic enables startups and major corporations to connect and co-create sustainable solutions. Key success factors include enabling startups, which are agile but resource-limited, to collaborate with well-resourced but less flexible major corporations. This collaboration helps startups overcome challenges such as limited funding and market access while providing corporations with innovative solutions and reduced research and development costs. By positioning startups as solution providers and leveraging the resources and expertise of larger companies, both parties benefit from shared risks and accelerated time-to-market. Finally, blue governance and policy reform can further encourage public and private partnerships and private investment in innovative projects. Favourable regulatory frameworks, such as tax credits for large companies outsourcing research and development to startups and research laboratories, as well as subsidies and tailored financing facilities enhancing market access for innovators further support these dynamics, offering startups testing grounds and potential clients, while providing corporations with cutting-edge technological advancements.

ALGERIA STARTUP CHALLENGE

EXPERIENCE / 🔾 ALGERIA

In 2018, Leancubator launched <u>Algeria Startup Challenge</u>, which is today the largest startup programme creating opportunities for startups and companies to build the innovations of tomorrow. It supports startups and innovative projects with resources and by providing networking assistance to facilitate the co-creation of impactful and collaborative initiatives. To date, it has supported over 1800 startup and projects (for over 12 000 project holders) and held more than 300 coaching sessions.

Examples of innovative initiatives supported in Algeria span across blue economy sectors, including energy transition, coastal and maritime tourism, waste management, aquaculture, and fisheries, particularly from a food security perspective. Notable examples include:

- A startup that developed a 100% solar-powered refrigeration system, which ensures sustainable energy use at a lower cost and is primarily used for the transportation and cool storage of seafood products.
- A startup offering a comprehensive carbon footprint calculation solution based on artificial intelligence, catering to the food industry's need to track and reduce their carbon footprint.
- An educational farm startup focused on sustainable fish farming to enhance the value of water resources and fish rejections.
- An alternative fish feeding solution based on fermented raw materials and food waste to address the high costs of traditional fish breeding practices.

INTEGRATED APPROACH TO PLASTIC POLLUTION MANAGEMENT: THE CASE OF TUNISIA

A concrete example of the effectiveness of an integrated approach to tackle the pressing challenge of marine plastic litter was presented by:



Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Tunisia office

represented by Ms Rania Koussani, Agroeconomist Engineer, CSR Advisor and Manager of the <u>DEVLOK</u> Project (*Local Development of the Kerkennah Islands*).

GIZ is active in Tunisia on behalf of the German Government and the EU, among others. It works with local partners on more than 50 projects and supports the country in its economic policy and democratic development, with a focus on Tunisia's rural regions. The priority areas of German development cooperation in Tunisia are: sustainable economic development and employment promotion; regional development, local governance and democracy; water and the protection of natural resources. GIZ also works to support the regions' economic performance to attract greater investment to the country, helping to create employment opportunities. GIZ also promotes the sustainable regional use of water resources. Together with public, private and civil society organizations, solutions are developed for agricultural practices and rural development that conserve resources. Other focus areas include energy and climate as well as migration. GIZ also coordinates country-specific activities on digitalization, sustainability and gender.

Since the 1950s, an average annual increase of 8.4 percent in production has led to plastics becoming ubiquitous worldwide. Coupled with other factors such as inappropriate and/or uncontrolled disposal practices, inadequate waste management infrastructure and insufficient recycling technologies, along with a lack of public awareness and incentives, this has resulted in plastic litter being universally present in the environment, where it can leak into waterways and the ocean. 15 Marine plastic litter is considered the most pervasive form of pollution impacting the ocean, constituting three quarters of all marine litter worldwide, 16 and posing significant environmental as well as socio-economic impacts. Microplastics and nanoplastics result from the degradation of plastic waste and can pose a threat to aquatic organisms, food safety and public health. 17 It is estimated that the Mediterranean is polluted by 730 tonnes of plastic waste every day, accounting for between 95 to 100 percent of total floating litter, and more than 50 percent of seabed litter. Coastal population and tourism are the main drivers of plastic waste generation and marine litter in the region, 18 associated with take-make-waste economic models responsible for degrading ecosystems, contributing to biodiversity loss, and threatening public health.

The Kerkennah Plastic Free strategy is a concrete example of how an integrated and participatory territorial approach can help targeting the reduction and management of plastic waste. Developed by WWF Tunisia and CIHEAM Montpellier in the framework of the DEVLOK project (see box below) funded by the EU Delegation in Tunisia and of the MedIsWet (Mediterranean Islands Wetlands) project funded by the MAVA Foundation, the initiative was designed to foster sustainable development by supporting youth and women's activities within fishing communities. Kerkennah Plastic Free addresses the critical issue of plastic pollution, which has been exacerbated by oil drilling, erosion, and the increasing salinity of underground water reserves. Plastic waste, including abandoned, lost or otherwise discarded fishing gear (ALDFG), has led to the degradation of marine resources and negatively impacted the fishing industry, which is the islands' primary economic activity, contributing to 40 percent of their economic returns. 19 To combat these challenges, the project established a system for the local recovery of plastic waste. This system includes setting up certified plastic collection areas and developing

methods to break down and repurpose plastic. For example, collected plastics are often transformed into materials that can be reused within the community, such as fishing gear or collection bags for further clean-up activities.

The initiative has significantly involved the local community,

including local authorities, civil society representatives, and vo-

lunteers, all working together through a participatory approach.

Educational institutions have engaged students in plastic collection activities, and youth organizations have conducted targeted clean-up campaigns. Local businesses, including shops and bars, have also committed to supporting plastic collection efforts. This integrated approach has yielded several positive outcomes. By reducing plastic waste, the initiative has enhanced the local environment, making the islands more attractive for sustainable tourism. Improved environmental conditions have led to better quality food products from both land and sea, enabling local fisherfolks to sell their products at higher prices. Additionally, the initiative has promoted pescatourism, which aligns responsible environmental practices with the fishing industry. Overall, the initiative managed to create a virtuous cycle that strengthens the local economy, improves food security, and fosters a sustainable future for the Kerkennah Islands. Through community engagement and innovative waste management practices, these initiatives demonstrate a successful model for integrating environmental sustainability with economic development in Mediterranean island communities. The success of stakeholder mobilization hinged on several critical factors. Local women in Kerkennah played a pivotal role by shifting from using plastic to metallic fish traps. This change was part of a broader partnership between the Mediterranean shores, wherein collected plastic was ground into small pieces and exported to specialized companies capable of repurposing it into new products. Achieving concrete participation from all stakeholders required substantial time and effort. It took years to garner commitment and foster collaboration around the common goal of sustainable development. The crucial element was ensuring that the plans devised were designed for long-term implementation, allowing the community to build a sustainable future collectively. This long-term perspective was essential to overcome initial challenges and to establish enduring participation and cooperation among the diverse stakeholders involved.

Funded by the EU in the framework of the bilateral agreement with Tunisia as part of the European Neighbourhood Policy, the DE-VLOK project was implemented in the country between 2017 and 2021, promoting a participatory and inclusive approach to reinforce the maritime, agricultural and rural economy of the Kerkennah Islands by supporting economic and social initiatives that enhance the local and specific resources of the islands for the benefits of the overall population. The project's focus area was threatened by numerous tensions, such as access to the profits of oil drilling, overfishing and competition for the fisheries resource, land and maritime pollution, seasonal population flows, departure site for irregular migration, etc. The main results of the project include the institution of a **local development committee for dialogue and for a collective management of the project**; awareness of 500 local people raised on the development challenges of the territory and regularly participate in the dialogues and coordination meetings; capacity of 100 local stakeholders (public, private, development organizations, civil society) developed on inclusive and participative processes, territorial and local planning, economic development; the institution of a territorial project integrating the needs of the local population and the national strategic orientations and the long-term establishment of 40 additional economic and social projects; the consolidation of partnerships with European development organizations.

SKILLS, EDUCATION AND EMPLOYMENT

The importance of training skills and tailored education curricula to meet labour market demands was highlighted by:



National Institute of Oceanography and Applied Geophysics of Italy (OGS)

represented by Mr Mounir Ghribi, Director of International Cooperation and Research Promotion.

OGS is an Italian public research institution under the supervision of the Italian Ministry of University and Research. It specializes in conducting research in the fields of earth science and oceanography on an international level. Its expertise is applied in the field of earth, sea, and polar sciences to contribute to the dissemination of scientific knowledge and to solve environmental, economic, and social problems. The main activities undertaken are research, development, and technology transfer projects for the benefit of the territories, with a particular focus on issues related to major global challenges. The institute's strategy aims at a close integration between research, innovation/technology transfer, and training/dissemination activities, as well as a synergy between the different research funding instruments.

Scientific collaboration and science diplomacy are crucial for fostering partnerships to address pressing issues such as biodiversity loss, pollution, food security, and sustainable aquaculture in the Mediterranean region. Collaboration between academia and productive sectors is essential for real-world applications of research and innovation.

Tailoring education paths and training according to the needs of the productive sector helps ensure economic benefits and employment opportunities in the blue economy for young people, especially in countries facing high unemployment rates. In this respect, the Mediterranean faces significant challenges, including high youth unemployment rates, exemplified by Italy's 24.4 percent in 2022²⁰ and Tunisia's 34.4 percent in 2019²¹.

Furthermore, developing advanced university masters, certification opportunities and training of trainers programmes that match skills with labour market needs may help highly educated individuals to find employment in the blue economy sectors. Several cooperation initiatives (see boxes below) are also contributing to these efforts, building capacities of a variety of stakeholders ranging from youth to local administrations in the whole Mediterranean area. However, mobility is often hindered by visa issues, which need addressing to facilitate the free movement of scientists and students. The collaboration of foreign ministries is being sought to promote the timely release of "scientific visas" to allow mobility and ultimately foster international cooperation.

RESEARCH AND EDUCATION BUILDING URBAN INSTITUTIONS FOR LOCAL DEVELOPMENT (REBUILD) PROJECT

EXPERIENCE / 🔾 LIBYA

The REBUILD project, co-funded by the European Union and coordinated by the Autonomous province of Trento, Italy, aims at strengthening local public services in Libya through a permanent training mechanism delivered by Libyan universities to Libyan municipalities. More specifically, it contributes to the improvement of the capacity of the 10 partner municipalities to design, implement and evaluate local public policies. One of the focus areas is to revitalize Libya's economy through the blue economy, particularly by enhancing the fisheries sector. This initiative, managed by OGS, aims to standardize and commercialize Libyan fish products to meet international market standards. Training of trainers in the fisheries sector is a core component, providing Libyan professionals with the necessary skills and knowledge to improve their practices and output. A key achievement of the project was the successful diplomacy effort that brought together mayors from various Libyan municipalities in a meeting in Trieste, Italy, where local authorities from Benghazi to Tripoli could work together on strategies for commercializing fish internationally, demonstrating a significant step toward economic recovery and stability for Libya through the blue economy.

BLUE SKILLS INITATIVE

EXPERIENCE / O MEDITERRANEAN

The <u>Blue Skills initiative</u>, implemented by OGS on behalf of the Italian Ministry of University and Research and labeled by the Union for the Mediterranean, is designed to provide comprehensive education and training to support the sustainable blue economy across the Mediterranean region. This project offers a range of programmes, from training of trainers and summer schools to advanced master's degrees (see below) and mobility opportunities. It aims to develop a skilled workforce that meets the needs of the labor market while promoting sustainable practices. The initiative has attracted participants from various Mediterranean countries and beyond, including students from Trinidad and Tobago and Kuwait. Now in its seventh edition, the project emphasizes the importance of talent circulation and international collaboration, hosting students in Trieste and facilitating the exchange of knowledge and expertise across borders.

UNIVERSITY OF TRIESTE'S MASTER PROGRAMME ON SUSTAINABLE BLUE ECONOMY

EXPERIENCE / 🔾 ITALY

The <u>Sustainable Blue Economy Master's programme</u> is offered at the University of Trieste, Italy and has been recognized as the best in Europe in 2023. The purpose of the programme is to enhance the educational offerings for young people from Mediterranean countries in the marine and maritime field, to promote sustainable economic development, and contribute to the promotion of employment in the so-called blue jobs sector, while also aiming to foster dialogue among Mediterranean countries through the tool of Science Diplomacy. This programme involves collaboration among the productive sector, local authorities, and academia to tailor training paths. Advancements in artificial intelligence and robotics for fisheries and aquaculture are also being integrated into the curriculum.

MULTISTAKEHOLDER COLLABORATION FOR BLUE TRANSFORMATION IN THE MEDITERRANEAN

The closing remarks were delivered by:



International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)

represented by Mr Teodoro Miano, Secretary-General.

Established in 1962, CIHEAM is a Mediterranean intergovernmental organization composed of 13 Member States. 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 acwtivities 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.

Multistakeholder and participatory approaches at local, national and regional levels need to drive the Blue Transformation, which is, indeed, a long-term process. Dialogue and regional cooperation are a must in this interface. The Mediterranean region faces the dual reality of an overexploited and endangered sea alongside the significant, yet underestimated, potential of the blue economy to generate wealth and development. The current crossroads present an opportunity to choose a path towards a sustainable future. To achieve this, the region needs enhanced multilateralism and cooperation in data collection, sharing, transparency, and confidence-building. Science and research must make innovation a common good, with an emphasis on training and capacity building, particularly for coastal communities. The involvement of economic and financial players (private sector, including small and medium-sized enterprises, banks and international finance institutions, insurance firms, etc.) is essential, as is the development of a regional vision for more sustainable agrifood systems, which FAO, CIHEAM, UfM and

PRIMA have promoted for years through the SFS-MED Platform. Multistakeholder collaboration and cooperation have the potential to foster dialogue, exchange expertise, provide training, and produce knowledge, which are key ingredients for agrifood and aquatic food systems transformation, given the interconnectedness of sea and land and the environmental, social, and economic relationships that bind them. This type of collaboration is already happening at regional level, through key players such as the SFS-MED Platform and the UfM Mediterranean Blue Economy Stakeholder Platform managed by UfM, serving as regional hubs for knowledge sharing and partnership building, and backed by political and institutional processes, such as the UfM Ministerial Declarations. These represent collective efforts across organizations and underscore the need for action-oriented strategies that bridge the "blue" and "green" agendas at the strategic level and engage political spheres to cultivate awareness and political will for innovative approaches to address value chains and unemployment challenges in the region.

SFS-MED PLATFORM

COLLABORATION / O MEDITERREAN

The <u>SFS-MED Platform</u> 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 <u>SFS-MED Platform's Coordination Desk</u> for further information about the modalities of engagement.

UfM MEDITERRANEAN BLUE ECONOMY STAKEHOLDER PLATFORM

COLLABORATION / O MEDITERRANEAN

The Mediterranean Blue Economy Stakeholder Platform (MedBESP) is a regional networking platform for sharing knowledge and supporting the development of the blue economy. It can be defined as a "one-stop shop/online web portal allowing for the consolidation and sharing of general, technical and sectoral information related to marine and maritime affairs in the Mediterranean". The Platform is a web-based portal aimed at providing a systemic and coherent framework to improve maritime governance in the Mediterranean by promoting and achieving: a more strategic, integrated and coordinated approach to policies and actions impacting on the sea; inter-systems co-operation and synergies across sectors and borders at regional, sub regional and national level; a common and coherent framework, bearing in mind regional specificities of the Mediterranean, to enhance exchange and dissemination of knowledge, networking and capacity-building. Among others, the platform facilitates contacts between existing education networks, exchange information including pedagogic tools and serves as an interface for mobility programs.

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⁷See note 3.

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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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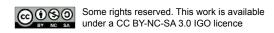
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