



Food and Agriculture
Organization of the
United Nations



General Fisheries Commission
for the Mediterranean
Commission générale des pêches
pour la Méditerranée

GFCM strategy towards sustainable fisheries and aquaculture in the Mediterranean and the Black Sea

BACKGROUND INFORMATION

Genesis

Fisheries and aquaculture form an intrinsic part of the cultural fabric of the Mediterranean and the Black Sea and, for millennia, they have driven the blue economy of the region, providing essential coastal livelihoods and the basis for the so-called “Mediterranean diet.” Achieving food security and providing sustainable livelihoods for a growing world population while striving to reduce inequalities and support gender equity represent the main challenges of our era and the ultimate targets of the United Nations Sustainable Development Goals (SDGs).

Fisheries and aquaculture have a particularly important role to play in building sustainable food systems. In the Mediterranean and the Black Sea, maintaining high levels of sustainable yield and providing for livelihoods remains a particularly tall order. The countries of the region are characterized by densely populated coastal areas where the demand for fish protein is high. Together, these factors impose intense pressure on Mediterranean and Black Sea ecosystems, which already face unique challenges due to their semi-enclosed nature and little connection to other oceans.

Recognition of these challenges at the global and local scale has impelled countries and international organizations to act, revising existing strategies and creating new ones when needed. In this context, the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO) and all its members, in partnership with other multilateral initiatives, have stepped up to the task of reversing the concerning trends in natural resources seen in the region. In response to the advice of externally conducted performance reviews, the most recent of which was completed in 2019, the GFCM has adapted its institutional framework to become a more modern and agile Commission that is better able to respond to the challenges facing the region. These amendments also prompted the adoption of the mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries, which included ambitious targets to improve scientific knowledge and data collection on the most pressing issues facing the region’s fisheries and facilitate the adoption of effective management measures.

Acknowledging the major role that aquaculture is called to play in achieving food security in the region and the need to address the sustainability challenges posed by its rapid growth, the GFCM also adopted, in 2017, a strategy for the sustainable development of Mediterranean and Black Sea aquaculture, as a result of a participatory process involving all relevant stakeholders. By facilitating cooperation and fostering synergies, the aquaculture strategy should help the sector deliver its full potential by 2030.

Where are we now?

The fisheries and aquaculture strategies acted as driving forces behind high-level political commitments taken in the region, notably the MedFish4Ever Declaration signed in 2017 and the Sofia

Declaration signed in 2018, and accelerated progress by GFCM contracting parties and cooperating non-contracting parties (CPCs) in meeting the political commitments enshrined in these declarations. Both strategies proved to be efficient tools for translating these political commitments into concrete action and galvanized interventions in the region.

Despite the advances made through these strategies – as described below according to each target – many challenges remain and call for strengthened political will and capacity to step up efforts in the implementation of existing policy frameworks. Working towards sustainable fisheries and aquaculture management also requires a better integration into ocean governance frameworks, taking into account the precautionary principles and the ecosystem approach.

Fisheries science and management

Reverting the trend in the overexploitation of fishery resources and addressing biodiversity has been the main focus of the GFCM across its area of application. This was addressed under Target 1 “Reverse the declining trend of fish stocks through strengthened scientific advice in support of management” and Target 4 “Minimize and mitigate unwanted interactions between fisheries and marine ecosystems and environment” of the fisheries mid-term strategy.

The significant increases in the quality and quantity of available information and fisheries data has driven the adoption of more and better management efforts at the local, subregional and regional levels. In recent years, the GFCM has adopted 10 management plans aimed at ensuring the long-term sustainability of fishing activities and six decisions addressing conservation issues. It has made important strides to increase spatial management capabilities thanks to the creation of nine fisheries restricted areas (FRAs), including the Jabuka Pomo Pit FRA, often mentioned as a virtuous example of preservation of fisheries resources and cooperation between CPCs. Moreover, the GFCM has ramped up efforts to ensure management advice is based on accurate, timely and comprehensive information, by carrying out surveys at sea, launching large-scale research programmes, improving onboard monitoring through a dedicated bycatch and discard monitoring programme and launching the first pilot studies on mitigation measures. In this regard, the organization of events such as the Forum on fisheries science in the Mediterranean and the Black Sea (Fish Forum), held in 2018, has contributed to boosting the science-policy interface and fostering cooperation and exchange.

As a result of these efforts, and although much still remains to be done, there are promising signs showing that active management makes a difference. According to the latest report on *the State of the Mediterranean and Black Sea fisheries* (SoMFi 2020), the GFCM has begun to reverse the prevailing trend of overexploitation in the region, with an increase of more than 10 percent in the share of stocks that are sustainably exploited and a reduction of more than 15 percent in exploitation ratios, along with a rise in overall stock biomass. This demonstrates that a collapse of fisheries stocks can be prevented and that adequate conservation measures can help revert the trend in overexploitation and increase the sector’s profitability.

In order for fisheries to continue playing their socio-economic role in the face of climate change and increasing anthropogenic pressure on the marine environment, sustained efforts must continue towards rebuilding stocks above levels that can produce maximum sustainable yield (MSY).

Socio-economic dimension

Hand-in-hand with management, the fisheries strategy has underlined the essential social and economic dimension of the sector in the region. Under its Target 1 “Reverse the declining trend of fish stocks through strengthened scientific advice in support of management” and Target 2 “Support livelihoods for coastal communities through sustainable small-scale fisheries”, the strategy has

accelerated the work of CPCs to promote sustainable livelihoods in the fisheries sector, particularly within the small-scale fisheries (SSF) sector and the communities which rely on them. This work advances the principles and objectives of the MedFish4Ever Declaration and the Sofia Declaration, which uphold the need for further integration of the socio-economic dimension in fisheries management, including in the context of recreational fisheries, and which advocate for capitalizing on relevant linkages with the Blue Economy to promote growth, jobs and investment. Furthermore, these efforts have advanced the implementation of the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines) in the region.

Recognizing the particular importance of small-scale fisheries to Mediterranean and Black Sea coastal communities and livelihoods, a ten-year Regional Plan of Action for Small-Scale Fisheries (RPOA-SSF) was adopted in 2018 as a political commitment toward long-term sustainability. To advance its implementation, dedicated activities such as the SSF University were launched. The creation of cooperation platforms such as the Friends of SSF platform also enabled to address interdisciplinary issues, such as access to social protection, and build synergies among the ongoing work of regional stakeholders. In addition, to support its conservation and management interventions, the GFCM has underscored the contribution of fisheries to social development by improving socio-economic data collection and drawing attention to social protection as a means to strengthen the resilience of coastal communities. In this respect, socio-economic surveys were launched in eight CPCs and recreational fisheries pilot studies were executed in all GFCM subregions. However, in order to ensure the full implementation of the RPOA-SSF, further coordinated action is essential.

Compliance and enforcement

Adopting management decisions is only half the battle: the decisions also need to be enforced and their implementation needs to be monitored so that they can reach their objectives. This need was addressed by Target 3 “Curb illegal, unreported and unregulated fishing through a regional plan of action” of the fisheries mid-term strategy.

Over the past few years, the GFCM has strengthened its legal framework and capacity to ensure compliance in the region, through the development of high-seas joint inspection schemes and the piloting of a centralized vessel monitoring system. At the global level, the GFCM has also played a key role in drawing attention to the need to fight illegal, unreported and unregulated (IUU) fishing. As a result, a Regional Plan of Action to Fight against IUU Fishing (RPOA-IUU) was adopted in 2017, operationalizing at the technical level the political commitments under the MedFish4Ever Declaration and the Sofia Declaration. Moreover, upon an initiative from the GFCM, an international day for the fight against IUU fishing is now celebrated around the world on 5 June each year. Finally, within the framework of the Initiative for the sustainable development of the blue economy in the western Mediterranean (the WestMED Initiative), the first Mediterranean virtual regional training academy on fisheries control and inspection was created, coordinated by the European Fisheries Control Agency (EFCA) and financed by the European Multiannual Fisheries Fund (EMFF).

Aquaculture

The vision for an aquaculture sector that is more competitive, sustainable, productive, profitable and equitable is enshrined in the GFCM aquaculture strategy adopted in 2017 and its three targets: Target 1 “Build an efficient regulatory and administrative framework to secure sustainable aquaculture development”, Target 2 “Enhance interactions between aquaculture and the environment while ensuring animal health and welfare“ and Target 3 “Facilitate market-oriented aquaculture and enhance public

perception”. Building upon these targets and adapting them to the ever-changing conditions and challenges will be an integral part of the new strategy.

Considering the growing importance and potential of aquaculture in the region, effective support was provided and led to the adoption of specific national strategies and development plans for aquaculture, which are now in place in more than 85 percent of CPCs. In addition, capacity development efforts were made towards the establishment and effective implementation of dedicated zones for aquaculture and more than 70 percent of CPCs now have specific provisions in place on allocated zones for aquaculture or aquaculture zoning within their national aquaculture strategies. Thanks to a strong network of producer organizations in the region, cooperation among stakeholders produced fruitful results, in particular through the establishment of several multi-stakeholder platforms at CPC level, promoting the participatory approach. Great strides were also made in sharing aquaculture knowledge and know-how. The GFCM Aquaculture Demonstrative Centres play an essential role in this knowledge-sharing: two centres are now established and in operation in the Black Sea and two more are planned to be created in the Mediterranean too. Other advances for the sector include promoting market-oriented production and social acceptability and highlighting the environmental services of aquaculture.

Adapting to emerging priorities

Capacity development has been a key priority in both the fisheries strategy, in particular its Target 5 “Enhance capacity-building and cooperation” and the aquaculture strategy, where capacity development and cooperation are a cross-cutting aspect in the three targets.

In parallel to the progress made on technical fronts throughout the implementation of its fisheries and aquaculture strategies, the GFCM has evolved to become a more modern organization, better able to adapt to and address emerging challenges and priorities in the region. The subregional approach adopted has been instrumental in addressing the specificities of each of its five subregions (western, central and eastern Mediterranean, Adriatic Sea and Black Sea); it is supported by technical units that are currently in operation in Bulgaria, Lebanon and Spain, soon to be followed by Tunisia and Croatia. Advances in implementing the subregional approach were also facilitated by the work done in collaboration with the FAO regional projects, which contributed to closer cooperation among CPCs, efficient exchange of information and discussions on the main actions of the strategies. Cooperation and partnerships with stakeholders have also accelerated, with the conclusion of 17 memoranda of understanding, and strategic activities have been promoted through specific projects supported by extra-budgetary funds. In addition, the GFCM can now count on a consolidated network of experts brought about by research programmes and by initiatives such as the Fish Forum 2018 or the Aquaculture Demonstrative Centres. Finally, better preparedness has boosted the ability of the Commission and its Secretariat to meet and adapt to rapidly changing circumstances brought on by the COVID-19 pandemic.

New challenges call for a new strategy

These achievements show that progress has been made in the right direction, but many challenges remain before Mediterranean and Black Sea fisheries and aquaculture can be assured of a sustainable future and contribute to their full potential to the blue economy.

Catch levels are lower than in the 1980s, but the exploitation rates of shared stocks are mostly still high. Management plans need to be extended and control must be enhanced so that management measures can be fully enforced. Discards and the incidental catch of vulnerable species must be reduced and properly regulated. Aquaculture production needs to meet demand and grow sustainably. Moreover, an adequate balance between resources and fleet capacity must be found and innovation and greater social

support are needed to support the Mediterranean and Black Sea's ageing fleet and workforce. As the Mediterranean and Black Sea basins are also a very important recreational fishing areas, the impacts of recreational fisheries on fishery resources need to be assessed, monitored and managed.

In addition to this, there is an urgent need to reduce anthropogenic-driven impacts, such as climate change and all forms of pollution, including eutrophication and underwater noise, as well as non-indigenous species, in accordance with the objective of reaching good environmental status and following the ecosystem approach enshrined in the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention). Thanks to the close attention the GFCM is already paying to these issues, it is possible to build on the momentum and decisively move forward to address them.

In 2020, discussions were launched and the adoption of a new common vision and guiding principles emerged as the main course to consolidate the progress made so far, deliver on the commitments made and accelerate common efforts to promote the sustainability of the Mediterranean and the Black Sea. All in the face of climate change and increasing human pressures on the marine environment, which have led to rising temperatures, acidification, deoxygenation and sea level rise across the region.

Against the backdrop of the COVID-19 pandemic, which disrupted livelihoods and severely impacted the fisheries and aquaculture sectors, decisive action is all the more necessary to bolster their resilience. A new strategy can therefore play a central role in guiding this work and coordinating efforts among all actors to respond to the region's priorities and growing challenges.

A regional scope, a modular approach

The strategy has a regional scope and addresses the priorities of the Mediterranean and the Black Sea as a whole. Taking advantage of the GFCM's subregional approach that supports fisheries management and aquaculture development while better addressing local specificities, the actions of the strategy will be coordinated within the five GFCM subregions. More focused and tailored interventions to achieve each of the strategy's targets will be key to ensure efficient implementation and coordinated action while taking into account specific needs. In this respect, the GFCM technical units in the subregions will play a key role and act as decentralized hubs to organize local actions, involve necessary stakeholders, share subregional expertise and coordinate cooperation and technical assistance work.

Regional synergies and global commitments

Bringing together different sectors of the blue economy and promoting a multidisciplinary approach, the new strategy will federate all efforts to deliver on national, regional and global commitments, working in synergy with existing national and regional strategies such as the European Union's Green Deal, Farm to Fork and Biodiversity strategies.

Blue growth remains a key priority for the region. According to the Ministerial Declaration on Sustainable Blue Economy adopted on 2 February 2021 by the Union for the Mediterranean (UfM), fisheries and aquaculture are considered as the main pillars supporting food security in the region and the GFCM should remain the driving force behind regional cooperation towards sustainable fisheries and aquaculture management.

In the Black Sea, regional cooperation on blue economy is also supported by the implementation of the Common Maritime Agenda for the Black Sea (CMA) and its scientific pillar, the Strategic Research and Innovation Agenda for the Black Sea. Sustainable fisheries and aquaculture are among the priorities set forth within the CMA and are coordinated with the framework of the GFCM. At the national and

local levels, national hubs are foreseen to support stakeholders' awareness and engagement, exchange of best practices and networking while contributing to the regional dimension of the GFCM's strategies.

In the western Mediterranean, sustainable fish consumption and production as well as sustainable fisheries and aquaculture development are clearly set out among the priorities of the WestMED Initiative, launched in since 2017. In the Adriatic and the Ionian Sea, the European Union Strategy for the Adriatic and Ionian Region (EUSAIR) contains a dedicated pillar on blue growth, which includes specific objectives towards the sustainable adaptation of seafood production and consumption as well as a macro-regional priority for promoting sustainability, diversification and competitiveness in the fisheries and aquaculture sectors through education, research and development, as well as administrative, technological and marketing actions, including initiatives on marketing standards and healthy nutritional habits.

Under a global perspective, the path to sustainability is marked by the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) to end poverty, fight inequality and injustice, and tackle climate change by 2030, in particular SDG 14 to conserve and sustainably use the oceans, seas and marine resources for sustainable development. With just under ten years left to achieve the SDGs, the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) is of particular relevance to Mediterranean and Black Sea fisheries and aquaculture as it offers an opportunity to join efforts in ensuring that ocean science delivers benefits for the sustainable development of oceans and for society. The strategy can contribute to delivering the Decade's objectives in the perspective of the Mediterranean and Black Sea specificities. The strategy will also advance collective efforts under the Convention on Biological Diversity (CBD) and contribute to its post-2020 global biodiversity framework, currently being negotiated. It should also aim to integrate actions proposed ahead of the United Nations Food Systems Summit 2021 towards more inclusive, resilient and sustainable food systems.

As a United Nations specialized agency, FAO supports these global efforts. In particular, the quest for securing a productive and sustainable aquaculture to achieve food security is enshrined in FAO Strategic Objective 2 (SO 2) which is to “make agriculture, forestry and fisheries more productive and sustainable” as well as in the Code of Conduct for Responsible Fisheries (CCRF), which also promotes sustainable fisheries and responsible aquaculture. Moreover, the FAO Blue Growth Initiative aims at addressing food security and poverty alleviation thanks to the production of quality wild captured and farmed fish through integrated, sustainable and socio-economically sensitive processes. In this respect, the recent Declaration for Sustainable Fisheries and Aquaculture, endorsed by the FAO Committee on Fisheries on 8 February 2021, is a renewed call for action to implement the 2030 Agenda and achieve the sustainable management of aquatic resources, in light of the critical importance of fisheries and aquaculture for global agrifood systems transformation. This vision is enshrined in the strategy and will guide its implementation.

Implementation and timeline

In line with the global agenda, the strategy is proposed to cover a ten-year span and run until 2030. A mid-term review of its objectives and outcomes is foreseen in order to assess the progress made in implementing the strategy, review lessons learnt and provide recommendations on possible readjustments and improvements and ensure the targets will be met efficiently.

One vision, five targets

To fulfil its overarching vision towards the sustainability of fisheries and aquaculture in the Mediterranean and the Black Sea, the strategy is articulated around five targets:

Target 1. Fisheries and ecosystems: healthy seas and productive fisheries

Target 2. Compliance and enforcement: a level playing field to eradicate illegal, unreported unregulated fishing

Target 3. Aquaculture: a sustainable and resilient sector growing to its full potential

Target 4. Livelihoods: decent employment and engaged fishers for profitable fisheries

Target 5. Capacity development: efficient technical assistance, knowledge sharing and partnerships in a subregional perspective

The technical knowledge and expertise in the region underpins all the actions while fully integrating cross-cutting themes such as gender, governance, nutrition and climate change mitigation and adaptation.

TARGET 1. Fisheries and ecosystems

Healthy seas and productive fisheries

Building upon the work done so far and recognizing remaining challenges such as the still prevalent overexploitation of resources and the various threats to biodiversity in these semi-enclosed seas, Target 1 aims to address sustainability, conservation and environment issues in an integrated way, focusing on four priorities.

1.1. Improve technical advice on the status of fisheries and potential scenarios to provide a solid basis for management

This priority focusses on enhancing fisheries-related data collection, monitoring and analytical capacity towards the provision of solid advice to facilitate decision-making. It prioritizes stock assessment and simulations on the biological and socio-economic impacts of alternative management scenarios, including a focus on data-limited situations, small-scale fisheries as well as the use of multispecies approaches and integrated ecosystem assessments.

1.2. Implement evidence-based adaptive fisheries and ecosystem management

Building on transitional measures and management plans adopted under the mid-term strategy, this priority focusses on implementing efficient multiannual, adaptive management plans addressing all key fisheries in the Mediterranean and the Black Sea. A combination of quantitative harvest control rules for data-rich stocks and precautionary measures for data-limited resources can enrich existing management plans as well as inform new ones, thereby guiding the management framework towards increased sustainability in the Mediterranean and the Black Sea.

1.3. Strengthen the use of efficient area-based conservation measures as well as technical and nature-based solutions to conserve biodiversity and enhance the productivity of marine living resources

This priority focusses on the identification, including on the basis of environmental and socio-economic scientific evidence, and implementation of new fisheries restricted areas (FRAs) and on enhancing the efficiency and monitoring of existing ones in order to address significant adverse impacts of fisheries on vulnerable marine species, ecosystems and essential fish habitats. It also addresses the use of other bycatch and impact-reduction technical measures, such as those directed at improving fishing selectivity, deterring depredation and decreasing mortality of accidentally caught vulnerable species.

1.4. Prevent, mitigate and address emerging threats to fisheries and the environment, including plastic pollution, climate change and the expansion of non-indigenous species

This priority focusses on minimizing and mitigating any form of pollution deriving from the activities of the fishing sector, in particular abandoned, lost or otherwise discarded fishing gear. It also seeks the involvement of the sector in testing new technologies to remove marine litter, in particular plastics, from the marine environment. In addition, it aims to build on the work on climate change and non-indigenous species initiated during the previous strategy, by consolidating monitoring programmes such as the observatory for non-indigenous species, improving the initial assessments of potential impacts of these threats on the sector and implementing adaptive measures within existing and new management plans.

TARGET 2. Compliance and enforcement

A level playing field to eradicate illegal, unreported and unregulated fishing

Building upon the results obtained so far and with the aim to further operationalize the RPOA-IUU, Target 2 technically underpins the political commitments put forth by the MedFish4Ever Declaration and the Sofia Declaration. It should be instrumental in swiftly ending IUU fishing practices in the Mediterranean and the Black Sea and its execution will be guided by the overarching principles of transparency and fairness, focussing on four priorities.

2.1. Achieve full compliance with GFCM recommendations

This priority focusses on endowing the GFCM Compliance Committee with the necessary means to level the playing field in the GFCM area of application. Under the mid-term strategy, the GFCM has adopted an unprecedented number of management measures and provided technical assistance to help CPCs in addressing situations of non-compliance detected by the Compliance Committee. Although some work is still needed to achieve a level playing field, the root causes undermining such a crucial endeavour are now clear and will be addressed under this priority.

2.2. Consolidate a common system of enforcement

This priority focusses on building upon the progress made in the context of the GFCM's subregional management plans to enforce fisheries regulations. The mid-term strategy jump-started efforts by the GFCM towards a common methodology to regularly assess the extent and impacts of IUU fishing. Bearing in mind the high cost of enforcement measures, it will not be possible, without such a methodology, to identify where the main risks of illegal activities are likely to occur and deploy means to reduce those risks in critical marine areas. This priority addresses these issues and facilitates the implementation of a common system of enforcement.

2.3. Centralise monitoring, control and surveillance at the regional level

This priority allows CPCs to follow up on the decision they took to establish a centralised regional vessel monitoring system (VMS) and control system under the remit of the GFCM. The mid-term strategy laid the ground for such system by piloting the testing of key technical features which will be needed to set it up while ensuring full correspondence with national VMS already in place. At the same time, the prevalence of SSF in the GFCM area of application as well as the most recent advances in technology call for integrating tracking solutions into this system that would allow the broadening of monitoring, control and surveillance (MCS) on a modular basis. There is also a growing need to monitor the presence of fishing vessels operating inside or in the proximity of FRAs and to use spatio-temporal data for the scientific assessment of fish stocks. The possibility exists to now capitalize on the establishment of a centralised regional VMS and control system thereby reaping additional benefits for CPCs.

2.4. Bolster coordination to address illegal practices related to the fishery sector

This priority addresses the main gaps identified throughout the implementation of the mid-term strategy in relation to the consequences of IUU fishing activities. While the mid-term strategy has recognized the importance of only allowing access to the market to legally caught fishery products, the extent of action taken in this respect has remained limited. The culture of compliance promoted by the GFCM could be severely hampered if decisive action is not taken. Much has been done in terms of

regulating harvesting activities in the region. Tackling the equally important aspect of regulating what occurs where harvested catch ends (from bait to plate) should be the next step. In 2019, during the GFCM High-Level Conference on MedFish4Ever Initiatives: Advances and Renewed Commitments, the importance of certification, traceability and the market dimension of the fisheries sector was stressed. Creating working connections in the context of interagency coordination in this regard will be achieved under this priority.

TARGET 3. Aquaculture

A sustainable and resilient sector growing to its full potential

Building upon the achievements reached so far, Target 3 will ensure the sustainable development of the aquaculture sector and its contribution to sustainable food systems, and work towards its resilience against global challenges and crises such as climate change, plastic pollution and the COVID-19 pandemic.

3.1. Support responsible investment

This priority focusses on creating conditions to attract investors that look beyond short-term financial return and take a responsible stance on the overall impact of their investment, notably, environmental and social impact. The GFCM will continue to work closely with CPCs to develop a regulatory and administrative framework that efficiently accommodates the sustainable development of aquaculture based on responsible production and due diligence, and promotes sustainable investment in line with blue economy finance principles.

3.2. Promote practices supporting sustainable environment, products and sector

This priority focusses on the “blue transformation” of the aquaculture industry through science-based solutions, a life-cycle approach to the assessment of impact, as well as marine spatial planning (MSP) tools and following the ecosystem approach to aquaculture (EAA). Amongst the best practices to be promoted, green innovation and nature-based solutions, digitalization and traceability should have a critical role. Reducing the sector’s environmental footprint, dealing with climate change and pollution and securing animal health and welfare will be crucial in achieving the sustainability of the sector. Diversification towards aquaculture with lower environmental impact (e.g. low trophic aquaculture, integrated multi-trophic aquaculture), alternative feeds, reduction of the use of plastic and aquaculture offering environmental services (e.g. bioremediation or preservation of ecosystems) should also be promoted through the Aquaculture Demonstrative Centres (ADCs).

3.3. Improve the perception of aquaculture

This priority will ensure the competitiveness, resilience and social acceptability of the sector. The aim is to promote a sector which, beyond food security in the region, provides consumers with an easy and affordable choice of healthy and sustainable proteins. The GFCM will continue building on its fruitful collaboration with producer organizations and relevant stakeholders, including to enhance the image of aquaculture and its products. Awareness of seafood health benefits, information and consumer understanding regarding the environmental value of low impact aquaculture, certifications, and new business solutions and opportunities will play a pivotal role. Furthermore, this priority seeks to ensure that the sector is fair and inclusive, by providing the necessary opportunities to small-scale farmers in the supply chain, as well as supporting the empowerment of women and youth, thus further transforming the industry and leaving no one behind. Finally, a participatory approach in the development of aquaculture, as well as a better integration of aquaculture activities and other economic activities in local communities should be promoted.

3.4. Capitalize on technology and information systems

This priority aims to provide CPCs, producers, stakeholder platforms and other relevant institutions with all the necessary tools and information on aquaculture production, trade and markets. This will be achieved through the overall modernization of data collection, analysis and dissemination

processes and the use of modern information technologies. A sustainable, market-oriented sector requires sound and up-to-date information for decision making, which can be achieved by capitalizing on innovative, flexible and affordable technologies – a key factor for delivering quality-controlled data and products. The Aquaculture Market Observatory to be established by the GFCM will play a central role in this respect, acting as a data and information hub for aquaculture stakeholders in the Mediterranean and Black Sea region.

TARGET 4. Livelihoods

Decent employment and engaged fishers towards profitable fisheries

Building upon the work done and recognizing the importance of promoting resilient fisheries-based livelihoods while fully and efficiently implementing the RPOA-SSF, Target 4 aims to address issues such as employment, socio-economic knowledge, value chains and participatory decision-making in an integrated way, through four priorities.

4.1. Support productive and resilient employment along the fisheries value chain

This priority focusses on enhancing sustainable livelihoods by fostering decent working conditions, including health and safety standards in the workplace, and productive employment opportunities for men and women in the fisheries sector, particularly young people. Access to social protection programmes and financial services will be promoted as a central component, supporting the resilience of fishers and enhancing their capacity to prepare for and respond to crises such as the one triggered by the COVID-19 pandemic as well as climate change, among others. Finally, linkages with other Blue Economy sectors will be encouraged to promote livelihood diversification and the sustainability of the sector, including through specific training, upskilling and reskilling programmes.

4.2. Enhance the socio-economic information supporting decision-making processes

This priority focusses on strengthening the understanding of the socio-economic impact of fisheries, including recreational fisheries, along the value chain. Socio-economic data collection and analysis will be enhanced, so as to better integrate this information into decision-making processes. This priority will also shed light on the role of women in fisheries, including in gleaning activities and pre- and post-harvest activities.

4.3. Foster dynamic and innovative fisheries value chains

This priority focusses on identifying and implementing innovative solutions to enhance the profitability of fisheries, making value chains more efficient and responsive to market demand, while ensuring food security and ready access to fresh, local products. Actions will promote innovation to facilitate sustainable direct selling initiatives, minimize food waste, enhance traceability, promote certification of local and sustainable products, heighten consumer awareness and improve the integration of fisheries in a circular economy.

4.4. Foster the active engagement of fishers in participatory management processes and facilitate their role as guardians of the sea

This priority focusses on enhancing the capacity of all producer organizations, and notably small-scale fisher organizations, to engage as active contributors in management through a multi-level participatory process. In particular, efforts will be made to integrate fishers into knowledge-building activities, capturing their local ecological knowledge (LEK), empowering them to advocate for their needs through management consultations and partnering with them to institute participatory management models, such as co-management arrangements. The participatory approach is envisaged to be developed in a tailored and adaptive manner and is recognized, in particular, as an important governance tool for the identification, implementation and management of fisheries restricted areas.

TARGET 5. Capacity development

Technical cooperation, knowledge sharing and efficient partnerships in a subregional perspective

Building upon the work and achievements under the mid-term strategy, including the outcomes of the Fish Forum 2018, and capitalizing on previous technical assistance work carried out through the relevant FAO regional projects, Target 5 aims to continue providing capacity development support to coastal countries, including by empowering the GFCM technical units in the subregions in order to ensure that commitments under the MedFish4Ever Declaration and the Sofia Declaration are met. The execution of activities under this Target will be guided by the overarching principle of solidarity and be underpinned by broad and inclusive partnerships through three priorities.

5.1. Streamline capacity development at the subregional level

This priority focusses on tailoring the capacity development to the specificities of the different GFCM subregions and assisting CPCs to fulfil the untapped potential of their fisheries and aquaculture sectors. Through the establishment of its technical units, the GFCM has set in motion a process that should ultimately deliver on-the-ground technical and scientific support adapted to the different needs of each subregion. Specific focus will be placed on the role of education and human development in the field of fisheries and aquaculture, including for women and young people, and on promoting innovation and research in marine technology.

5.2. Promote technical cooperation and boost scientific research and innovation

This priority capitalizes on the experience mustered through the launch of research applied programmes and the consolidation of existing scientific networks. It will benefit from the knowledge harnessed in the wider community of scientists and stakeholders working in fisheries, aquaculture and the conservation of marine ecosystems throughout the Mediterranean and Black Sea region so as to address gaps in knowledge on specific cross-cutting themes. It will thereby accelerate innovation in the fishing and aquaculture sectors, including through cost-efficient interventions that improve livelihoods and competitiveness.

5.3. Enhance the role of partnerships in fisheries and aquaculture from a blue economy perspective

This priority focusses on expanding strategic cooperation between the GFCM and its current and potential partners, from countries to international organizations and programmes, academia and research institutions, civil society organizations, professional associations and cooperatives and the private sector. This priority seeks to boost the progressive integration of fisheries and aquaculture into a wider blue economy outlook, by building alliances to address common environmental, economic and social priorities. It will also support the GFCM's participation and involvement in relevant global fora and international events to ensure a committed response to calls and policies adopted at the international level towards meeting agreed goals and targets (such as SDG, the post 2020 Global Biodiversity Framework and the UN Decade for Oceans)

Proposed list of actions

TARGET 1. Fisheries and ecosystems: Healthy seas and productive fisheries

1.1. Improve technical advice on the status of fisheries and potential scenarios to provide a solid basis for management

- A. Enhance data collection on Mediterranean and Black Sea fisheries
- Adopt a regional strategy on data collection and develop innovative tools to facilitate the integration of information into comprehensive scientific advice in support of decision-making
 - Strengthen the implementation of regional scientific surveys at sea
 - Establish research programmes to enhance data collection aimed at:
 - developing possible management measures;
 - assessing and mitigating the incidental catch of vulnerable species in the Black Sea; and
 - strengthening and developing the collection of information on oceans and the seas in order to better predict the impact of climate change on the functioning of living resources and their management, as well as on carbon absorption.
 - Improve the regular data collection and monitoring of recreational fisheries, particularly for the main coastal species, with a view to integrating recreational fisheries data in assessments, when relevant
- B. Consolidate scientific evaluations and management advice for the Mediterranean and the Black Sea
- Incorporate the effects of anthropogenic activities, such as climate change and marine pollution, into scientific and decision-making processes
 - Revise the current list of GFCM priority species for the Mediterranean and the Black Sea, in accordance with the best scientific information available
 - Provide technical advice on management options (including through management strategy evaluation and in data-limited contexts) to inform existing and new management plans and enhance the adaptive approach
 - Develop ad hoc stock assessments for key coastal species, in view of the sustainable management of coastal fisheries, in line with the RPOA-SSF

1.2. Implement evidence-based adaptive fisheries and ecosystem management

- A. Enhance science-based fisheries management
- Develop multiannual management plans for all GFCM priority fisheries and relevant SSF, based on solid scientific advice (e.g. risk-based management in Target 1.1)

- Develop SSF management plans per subregion, supported by data collection and regular stock assessment of priority SSF species
 - Operationalize the ecosystem approach to fisheries as well as ecosystem-based management through the development of a framework tailored to the Mediterranean and the Black Sea
 - Adopt measures within multiannual management plans on gear selectivity in order to reduce the impact of fishing on bycatch (both discards and incidental catch of vulnerable species)
- B. Manage and adapt the fishing capacity to ensure an adequate balance between resources and fleet capacity in all coastal countries
- Assess the impact of shifting the fishing effort from offshore demersal fishing areas to coastal areas
- C. Develop a framework to investigate the interactions between fisheries and other sectors such as aquaculture

1.3. Strengthen the use of efficient area-based conservation measures as well as technical and nature-based solutions to conserve biodiversity and enhance the productivity of marine living resources

- A. Establish effective area-based measures to minimize and mitigate impacts on vulnerable species, sensitive habitats and essential fish habitats
- Determine the bottom fishing footprint in the Mediterranean and the Black Sea
 - Complete the GFCM Mediterranean geodatabase of sensitive benthic habitats and explore the use of artificial reefs to enhance the conservation of biodiversity
 - Establish a roadmap/regional plan of action for the establishment of new protected areas (such as fisheries restricted areas and/or other effective area-based conservation measures) based on the mapping of essential fish habitats and vulnerable marine ecosystems
 - Identify, designate and establish ecologically representative and coherent networks of well-managed FRAs, both within and beyond national jurisdictions
 - Engage fishers – particularly small-scale fishers – in the participatory management of marine protected areas and FRAs, as well as in the designation of new area-based measures, as relevant
- B. Reduce discards and incidental catch of vulnerable species
- Develop a regional plan of action to monitor the incidental catch of vulnerable species (for example by enhancing on-board observer programmes) and reduce/mitigate their interaction with fisheries
 - Adopt measures to reduce discards, including gear selectivity improvement and area-based measures

1.4. Prevent, mitigate and address emerging threats to fisheries and the environment, including plastic pollution, climate change and the expansion of non-indigenous species

- A. Develop an adaptation strategy to cope with the potential effects of climate change and non-indigenous species
- Develop impact indicators on the effects of climate change in the Mediterranean and the Black Sea, also based on real-time information networks from CPCs
 - Establish a regional observatory and a research programme on non-indigenous species in the Mediterranean and the Black Sea, interacting with all existing activities in the region
 - Adopt measures to prevent the introduction and significantly reduce the impact of non-indigenous species and/or to manage their fisheries
 - Conduct a full assessment of the socio-economic impacts of climate change on the fisheries sector, including from the expansion of non-indigenous species, with a view to formulating future measures, contingency plans and management plans
- B. Develop a regional adaptation strategy to cope with the potential effects of marine pollution on marine ecosystems, including pollution from land and sea sources of plastics, ocean noise, abandoned, lost or otherwise discarded fishing gear as well as nutrients and contaminants

TARGET 2. Compliance and enforcement: A level playing field to eradicate illegal, unreported and unregulated fishing**2.1. Achieve full compliance with GFCM recommendations**

- A. Reinforce the Compliance Committee procedures in relation to the categorization of non-compliance and possible appropriate measures to deter non-compliance
- B. Evaluate and further develop across the region national legislation concerning investigation procedures and sanctioning measures against non-compliance with fisheries management measures
- C. Conduct a performance review for both flag state and coastal states in the GFCM area of application in line with the FAO Voluntary Guidelines for Flag State Performance
- D. Develop and adopt effective sanctions for issues of non-compliance in FRAs

2.2. Consolidate a common system of enforcement

- A. Develop measures for recreational fisheries
- B. Develop measures on transshipment in the GFCM area of application
- C. Develop a common sighting procedure and a corresponding code of conduct
- D. Develop a common framework for the recuperation of abandoned, lost or otherwise discarded fishing gear

2.3. Centralise monitoring, control and surveillance at the regional level

- A. Develop a permanent international joint surveillance and inspection scheme across the Mediterranean and the Black Sea
- B. Strengthen capacity building across the region, in particular on the use of new technologies for MCS
- C. Improve the GFCM Authorised Vessel List (GFCM AVL) and other specific subregional list of fishing vessels and make it more transparent and functional, in particular by facilitating the cross-check of information and detection of non-compliance.

2.4. Bolster coordination to address illegal practices related to the fishery sector

- A. Organize a fisheries inspection university for the common training of practitioners across the region with relevant GFCM partners
- B. Establish a mutual assistance system to facilitate the regional electronic exchange of information on data related to port state measures, in line with the requirements of the FAO Port State Measures Agreement
- C. Develop a common traceability system and trade monitoring framework with digital certification schemes in the GFCM area of application

TARGET 3. Aquaculture: A sustainable and resilient sector growing to its full potential

3.1. Support responsible investment

- A. Organize technical consultation on responsible investment in the Mediterranean and the Black Sea in order to agree on specific principles to promote the sustainability of the sector
- B. Create a forum of finance and aquaculture stakeholders to promote environmental, social and governance investment in the region (Blue Investment Alliance)
- C. Develop, through a consultative process, guidelines and indicators for financial institutions, investors and producers
- D. Collaborate with CPCs and stakeholders towards the creation of enabling legal and administrative frameworks

3.2. Promote practices supporting sustainable environment, products and sector

- A. Improve the footprint of the industry through capacity building, by creating and disseminating to producers toolkits on responsible practices and state-of-the-art techniques (including nature-based solutions), and by providing hands-on training on production and research through GFCM subregional knowledge-sharing hubs such as the ADCs
- B. Further promote marine spatial planning tools through increased technical assistance to CPCs
- C. Prevent the further degradation of lagoon ecosystems by adopting the GFCM's guidelines on the management of coastal lagoons

3.3. Improve the perception of aquaculture

- A. Promote an extrovert, market- and export-oriented aquaculture sector through capacity building on business planning and marketing
- B. Increase awareness and improve the image of the aquaculture sector and its products and promote responsible practices through the production of communication and training tools
- C. Promote certification as a sustainability driver through capacity building, appropriate regulatory frameworks and awareness activities
- D. Focus on social, gender and inclusiveness issues by promoting relevant policies, including through training and incentives

3.4. Capitalize on technology and information systems

- A. Create and further promote GFCM subregional knowledge-sharing hubs, including existing and new ADCs, the Aquaculture Market Observatory and other information systems
- B. Foster and promote research, innovation, and hands-on training on state-of-the-art production techniques and nature-based solutions via GFCM subregional knowledge-sharing hubs
- C. Reinforce production and market data management practices by modernizing and streamlining the data collection, analysis and dissemination process, through the use of modern information technologies

- D. Utilize data management to ensure the traceability of aquaculture products from sea to plate, using technologies such as the blockchain technology as well as through capacity building activities and the creation of relevant regulatory frameworks

TARGET 4. Livelihoods: Decent employment and engaged fishers towards profitable fisheries

4.1. Support productive and resilient employment along the fisheries value chain

- A. Advance the principle of decent work in the Mediterranean and Black Sea fishing sector, including through fair and safe working conditions and access to social protection:
- Support efforts by CPCs to ratify and implement international instruments and governance mechanisms relevant to decent work in the fisheries sector, including but not limited to the ILO C188 Work in Fishing Convention, the IMO Cape Town Agreement, the FAO Port State Measures Agreement and other complementary instruments to prevent, deter and eliminate IUU fishing
 - Support efforts to prevent and eradicate forced labour
 - Facilitate access to social protection programmes and financial services to support investment and reduce the vulnerability of fishing communities
 - Support upskilling and reskilling processes and initiatives addressing fisheries and aquaculture operators as well as fish workers
 - Support safety at sea and improved working conditions for fishers, including through the introduction of new technology, gear and fishing methods permitting fishers to work in better conditions.
- B. Promote policies that support and recognize the contribution of small-scale fisheries in food security, employment and income for coastal communities
- Fully implement the RPOA-SSF, in line with the concrete targets and priority actions identified
 - Develop national plans of action for the implementation of the RPOA-SSF
 - Develop pre-financing mechanisms to support small-scale fishers in accessing available financial resources that would facilitate the implementation of the RPOA-SSF
 - Provide capacity-building processes and peer-to-peer exchanges to promote transnational cooperation to catalyse implementation of the RPOA-SSF
 - Expand the mapping SSF website in a SSF hub for Mediterranean and Black Sea SSF, creating a database of best practice and prototypes for alternative economic solutions to fisheries (e.g., fish tourism, integration of agricultural and fisheries products)
- C. Support equal opportunities for women and promote youth development to ensure generational knowledge transfer and turnover
- Ensure equal opportunities for the full and effective participation of women at all levels of the fisheries sector, including in leadership and decision-making roles, combating gender-based discrimination and supporting gender-sensitive policies
 - Facilitate the access of women in the fisheries sector to education and training, technology, credit, entrepreneurship opportunities and more

- Increase substantially the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- Develop livelihood strategies to support generational turnover in fishing communities

4.2. Enhance the socio-economic information supporting decision-making processes

- A. Support the collection of accurate, timely, complete and gender-disaggregated social and economic data on fisheries-based livelihoods, including vessel and shore-based fisheries, the pre- and post-harvest sectors, as well as recreational fisheries
- B. Facilitate the integration of socio-economic information into decision-making processes for fisheries management
- C. Assess interactions between small-scale fisheries and recreational fisheries at a subregional level and identify opportunities for livelihood diversification and new revenue between the sectors (e.g. pescatourism)

4.3. Foster dynamic and innovative fisheries value chains

- A. Carry out value chain studies to assess the sustainability and profitability of select priority fisheries, including those of particular importance to SSF, to support the development of value chain upgrading strategies and to reduce food waste towards increasing the value of fish products in support of sustainable and inclusive ocean economies
- B. Support capacity development to strengthen and valorise short value chains for small-scale fisheries products, including by leveraging technological innovations for direct selling (e.g. digital fish market places and direct selling apps) and by raising consumer awareness to the benefits of buying local
- C. Empower market value chain operators and consumers to make informed choices to support the sustainability of fish stocks, including through product certification and the use of digital technologies to support traceability (e.g. block chain technology)
- D. Facilitate the participation of fishers in a circular economy, including through innovative livelihood diversification activities to combat food waste and capture marine litter
- E. Encourage the reduction of pre- and post-harvest loss and waste in the sector, including discards, through appropriate actions, including awareness building, education and training, in particular, safety and quality standards for safe fish processing and distribution and healthy consumption

4.4. Foster the active engagement of fishers in participatory management processes and facilitate their role as guardians of the sea

- A. Raise awareness about the ecology of the ecosystem on which fishers act and the impact of their fishing methods when operating in specific maritime areas.

TARGET 5. Capacity development: technical cooperation, knowledge sharing and efficient partnerships in a subregional perspective

5.1. Streamline capacity development at the subregional level

- A. Enhance coordinated international support for implementing effective and targeted capacity-building to support national plans in implementing the GFCM Strategy, including through shared cooperative research
- B. Further implement the BlackSea4Fish project, also taking into account all actions proposed in other relevant targets

5.2. Promote technical cooperation and boost scientific research and innovation

- A. Organize a biennial GFCM forum on data collection and scientific research conducive to scientific advice, for the creation of scientific partnerships and the exchange of best practices and technology

5.3. Enhance the role of partnerships in fisheries and aquaculture from a blue economy perspective

- A. Continue implementing SDG 14 and other ocean-related SDGs to address holistically the current global challenges facing sustainability under the 2030 Agenda for Sustainable Development
- B. Integrate into the GFCM framework the developments under the Convention on Biological Diversity (CBD) of the post-2020 Global Biodiversity Framework, which will provide a 30-year vision to reduce pressures on marine biodiversity, promote their sustainable use and safeguard their ecosystem functions
- C. Support and integrate targets established under the United Nation Decades of Ocean Science for Sustainable Development and Ecosystem Restoration (2021-2030)
- D. Complement and establish relevant partnerships with RFMOs to promote the sustainable management of the stocks under their purview and their ecosystems