



**GENERAL FISHERIES COMMISSION
FOR THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE**



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**Conclusions of the ad hoc meeting to launch the
GFCM Aquaculture Multi-stakeholder Platform (AMShP) including
Strategic Areas for aquaculture development
Izmir, Turkey, 12–13 December 2013**

BACKGROUND

1. These conclusions have been developed as an outcome of the ad hoc meeting to launch the GFCM Aquaculture Multi-stakeholder Platform (AMShP) held in Izmir, Turkey, on 12–13 December 2013 and organized by the GFCM Secretariat in collaboration with the Turkish Ministry of Food, Agriculture and Livestock. The meeting gathered more than 60 participants from Algeria, Croatia, Greece, France, Israel, Italy, Montenegro, Morocco, Romania, Spain, Tunisia, Turkey as well as representatives of international and intergovernmental organizations, NGOs, farmers, farmers' organizations and experts from Mediterranean and Black Sea countries.
2. In recent years, challenges for the sustainable development of aquaculture in the Mediterranean and Black Sea have drawn the attention of the GFCM, which has launched a series of initiatives addressing the sustainability of coastal and marine aquaculture in its economic, social and environmental dimensions as well as in governance. As a result, an in-depth reflection has started to identify new working methods supporting the development of aquaculture in the Mediterranean and the Black Sea and to consolidate the work of the GFCM Committee on Aquaculture (CAQ).
3. At its thirty-seven session (May 2013, Croatia), recognizing the need to urgently tackle environmental and socio-economic concerns in order to ensure the sustainable development of aquaculture in its competence area, the GFCM decided to set up a regional aquaculture multi-stakeholder platform (AMShP) to enhance dialogue and facilitate visioning, priority-setting and consultation.
4. On the occasion of the ad hoc meeting to launch the GFCM Aquaculture Multi-stakeholder Platform (AMShP), participants discussed common challenges and opportunities for Mediterranean and Black Sea aquaculture and identified key elements for implementing this instrument at the regional level.
5. The GFCM AMShP is based on a long-term vision of sustainable aquaculture development shared between GFCM Members, including all aquaculture stakeholders and partner organizations. It should provide an environment where national issues are addressed with the aim of providing regional solutions. All its activities should be in line with the principles enshrined in the *FAO Code of Conduct for Responsible Fisheries* (CCRF), and in particular with the provisions of Art. 9 on aquaculture

development following an ecosystem management-based approach. The platform is also consistent with the GFCM Framework Programme, more specifically with its work programme (WP3) on Promoting the role of aquaculture for food security and economic growth.

6. The AMShP builds upon the major outputs and results achieved by AquaMed and other GFCM projects on aquaculture such as InDAM, SHoCMed, LaMed and MedAquaMarket as well as by SIPAM.

7. Participants have agreed on the following aspects relating to the AMShP: (i) nature and scope of the AMShP; (ii) main challenges, objectives and beneficiaries; (iii) benefits; and (iv) functioning and general approach.

SUGGESTED ACTION BY THE COMMISSION

8. The Commission is invited to examine these conclusions and provide further advice as appropriate.

THE AQUACULTURE MULTI-STAKEHOLDER PLATFORM (AMShP)

NATURE AND SCOPE OF THE AMShP

The AMShP should act as:

- A **consultative body** supporting the CAQ in providing advice to the GFCM.
- A **working space** for dialogue and exchange of experience, information and knowledge among private, public and civil society stakeholders in order to propose innovative solutions to challenging issues relating to aquaculture development;
- A **pragmatic instrument** permanently open to researchers, national administrations, farmers and farmers' organization, interested private and public stakeholders, NGOs, civil societies and to other economic sectors and initiatives similar in scope, as appropriate;
- A **meeting point** between producers, researchers and administrators enabling the participation of farmers and farmers' organizations in decision-making and facilitating discussion among different thematic groups;
- A tool providing a **common ground** to capitalize on outcomes, best practices and lessons learnt from other relevant projects and initiatives and promote a level playing field;
- A **link** with other international and national/mirror platforms or similar structures;
- A **regional hub** to share results and outputs between members and with all GFCM partner organizations.

MAIN CHALLENGES, OBJECTIVES AND BENEFICIARIES

Challenges

The AMShP should address the following challenges:

- Overcome aquaculture constraints linked to regional social and economic circumstances and conditions;
- Implement ecosystem management-based tools and support an integrated coastal zone management approach;
- Improve markets for aquaculture products and the diversification of the industry, considering the need to integrate small and medium-size producers in order to access markets and modern supply chains;
- Foster interaction and cooperation among different development systems at various levels of sector maturity in the region;
- Improve working conditions in aquaculture and promote aquaculture workers' welfare.

Objectives

The AMShP should support the activities undertaken by the GFCM in the field of aquaculture in order to facilitate a wider involvement of aquaculture stakeholders and contribute to CAQ technical advice to the GFCM to promote the sustainable development of aquaculture in the Mediterranean and Black Sea.

In particular, the Aquaculture Multi-Stakeholder Platform should:

- Provide assistance to GFCM Members in the development of policies, strategies, planning and of harmonized aquaculture legislations/ regulations;
- Promote a level playing field in the region providing for an equal access to markets;
- Promote public knowledge and improve the social image of aquaculture and aquaculture products in order to improve social acceptability and to valorize the aquaculture sector;
- Foster industry-driven research as well as dialogue among research and industry and support an efficient use of research outputs and dissemination of knowledge;
- Support innovation, knowledge transfer and capacity-building in the GFCM area;
- Foster dialogue and information sharing between aquaculture and other economic sectors (such as tourism) in order to identify problems and shared solutions and avoid possible conflicts;
- Develop strategies to assess the environmental interactions of aquaculture, according to present and expected levels of production including possible mitigation measures and valorize positive effects such as ecological services;
- Improve and increase domestic aquaculture production to ensure self-sufficiency and food security, in line with sustainable development principles.

Beneficiaries

The main beneficiaries of the work carried out by the AMShP will be:

- Stakeholders and decision-makers dealing with aquaculture and other decision-makers involved in related sectors;
- Stakeholders in the value chain: farmers, farmers' organizations and related industry actors;
- International and regional organizations;
- Research and educational institutions;
- Capture fisheries sector;
- Consumers and civil society at large.

BENEFITS FOR MEDITERRANEAN AND BLACK SEA COUNTRIES

The AMShP should help:

- Support the organization of activities in order to improve decision-making between farmers, associations and public administrations;
- Strengthen harmonization and compliance to regulations;
- Improve strategies to be implemented by the departments in charge of fisheries and aquaculture (or other equivalent bodies);
- Bring regional and specific solutions to country-level issues;
- Direct international funding resources to national challenges;
- Facilitate partnerships and cooperation between countries of different subregions within the GFCM area (e.g. South–North; Mediterranean–Black Sea, etc.);
- Strengthen capacity in the field of research and development, and support partnerships in research projects;

- Support the harmonization of national legislations;
- Minimize space competition in coastal zones.

FUNCTIONING AND GENERAL APPROACH

Institutional status

The institutional status of the AMShP should be defined at the ninth CAQ session (March 2015, Morocco).

Strategic approach

The Aquaculture Multi-Stakeholder Platform should operate through the following strategic areas:

- a) Spatial planning and allocated zones for aquaculture;
- b) Aquaculture and environment interactions;
- c) Disease management and aquatic animal health;
- d) Governance and regulatory frameworks;
- e) Quality and safety of products, markets and consumers;
- f) Research, knowledge sharing and technology transfer;
- g) Sustainable feed production and management;
- h) Technology innovation and diversification;
- i) Social responsibility; and
- j) Empowering aquaculture farmers' organizations

To ensure better functionality, efficient work and optimal results, these strategic areas will be articulated according to four main forums based on cross-cutting issues, thus avoiding overlaps between strategic areas:

- Forum 1: **Regulatory framework** for strategic areas a) and d);
- Forum 2: **Environment and disease management** for strategic areas b) and c);
- Forum 3: **Quality and market of aquaculture products** for strategic areas e), j) and i);
- Forum 4: **Technology and feed production** for strategic areas f), g) and h);

Communication strategies and capacity-building are transversal issues to be tackled within each of the ten strategic areas. The draft Strategic Areas are outlined in Appendix A.

Modus operandi

During a phasing-in period (until March 2015), the activities of the platform shall be coordinated by the GFCM Secretariat in collaboration with the CAQ Working Groups coordinators. An **ad hoc steering committee** will be in charge of facilitating this work. The steering committee will perform its functions on a voluntary basis, using mainly online facilities (e-mail, SharePoint, web, etc.), and support the activities of the GFCM Secretariat carrying out the following tasks:

- Prepare a concept note for a project proposal, including fundraising options for the support of the platform activities;
- Identify immediate and long-term actions to make the platform operational building upon existing knowledge and cooperation in each strategic area;

- Stimulate participation from the industry and farms, research institutions as well as any other interested partner who could be actively involved in each strategic area;
- Develop position papers and propose, facilitate and assess projects that reflect the interests and activities of the strategic areas;
- Explore possible interactions between strategic areas and synergies with other regional platforms and/or national/mirror platforms;
- Explore possibilities to organize a high-level event in 2014 or early 2015 to discuss key aquaculture issues, foster political will for a regional strategy on sustainable aquaculture and enhance the visibility of the regional platform. A preparatory meeting could be held during the first quarter of 2014, in cooperation with GFCM partner organizations and other possibly interested partners (such as Eurofish, IUCN, EATiP, FEAP, WWF, CIHEAM, Infosamak, etc.).

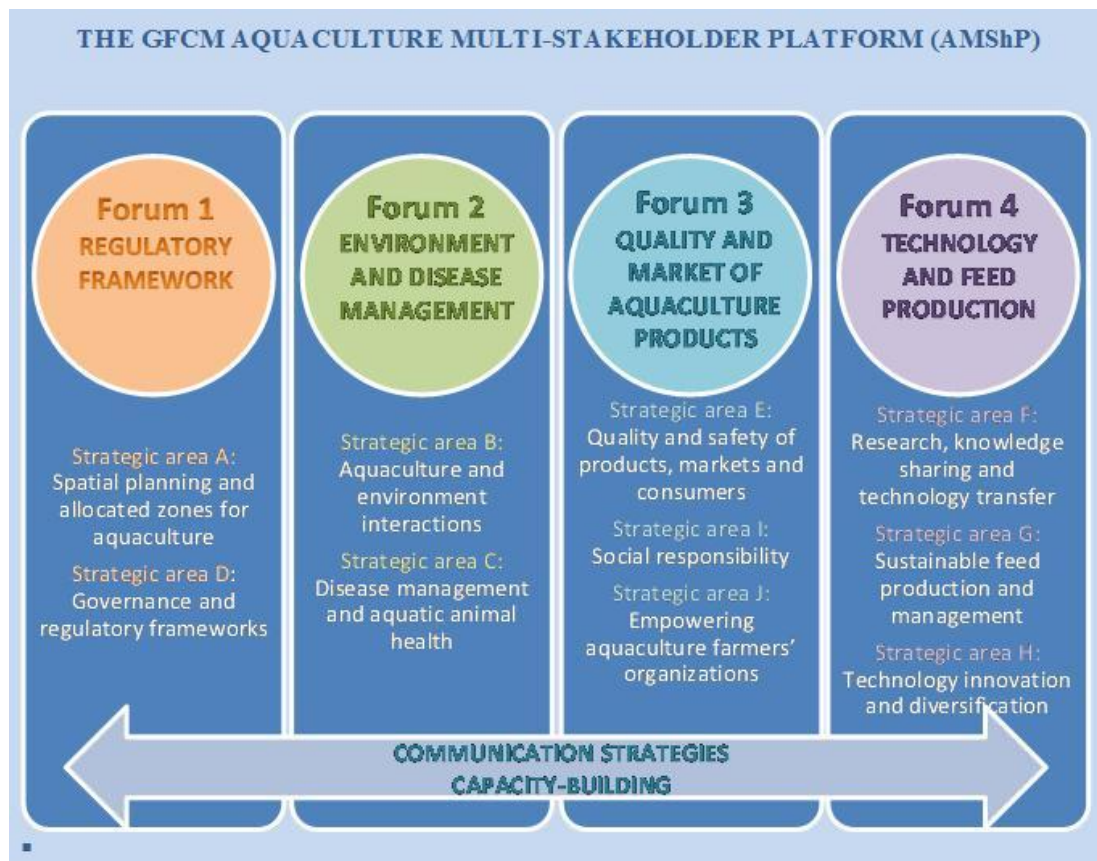
Steering Committee

The AMShP ad hoc Steering Committee is composed of the following members:

1. Ms Giovanna Marino (Italy)
2. Mr Jean Paul Blancheton (France)
3. Mr Hayri Deniz (Turkey)
4. Mr Mohammed Hadj Ali Salem (Tunisia)
5. Mr Hichem Kara (Algeria)
6. Mr Hassan Nhhala (Morocco)
7. Mr Javier Ojeda (Spain)
8. Mr Yannis Pelekanakis (Greece)

DRAFT GFCM-CAQ AQUACULTURE MULTI-STAKEHOLDER PLATFORM STRATEGIC AREAS

The draft strategic areas build mainly upon the results of a wide regional consultation initiated by the GFCM in June 2013 in Tunisia among experts, concerned agencies and the AquaMed project¹, summarized in several documents. In particular, the methodology employed and the major outcomes and results achieved which are included in the following documents: (i) a collective synthesis of research needs necessary to overcome the constraints identified at the Mediterranean regional level; and (ii) a five-year plan for follow-up meetings of the AquaMed multi-stakeholder platform were thoroughly considered and further elaborated. The results were integrated with the aquaculture regional priorities of the GFCM CAQ and results from the projects InDAM, SHoCMed, LaMed and MedAquaMarket² as well as from other regional initiatives. Finally, additional inputs were provided during the ad hoc meeting to launch the GFCM Aquaculture Multi-stakeholder Platform (Izmir, Turkey, December 2013). The AMSHP is based around four thematic forums according to ten Strategic Areas (SA) which take into consideration priorities for aquaculture development in the region (Figure below).



The background, main challenges, objectives and possible actions to be undertaken for each SA are outlined in the following pages.

¹ 'The Future of Research on Aquaculture in the Mediterranean Region (AQUAMED) is an EU Seventh Framework Programme (FP7) project implemented from June 2010–May 2013, which aimed to develop a cross-functional strategy for aquaculture research in the Mediterranean region (<http://www.aquamedproject.net>).

² Indicators for Sustainable Development of Aquaculture and Guidelines for their use in the Mediterranean (InDAM); Developing site selection and carrying capacity for Mediterranean aquaculture within aquaculture appropriate areas (SHoCMed); Mediterranean coastal lagoons management: interactions between aquaculture and capture fisheries (LaMed); Development of a strategy for marketing and promotion of Mediterranean aquaculture (MedAquaMarket).

STRATEGIC AREA 1: SPATIAL PLANNING AND ALLOCATED ZONES FOR AQUACULTURE

Background

Notwithstanding the general positive trend of marine and brackish aquaculture production in the Mediterranean and Black Sea, further aquaculture development struggles to find suitable areas to establish farms. Coastal marine aquaculture requires a high quality of water and strict environmental characteristics which may be available in limited areas where the complex interactions with other coastal users may cause conflicts and space competition. The sustainable integration of aquaculture in the coastal environment and in coastal zone activities would be achieved through the adoption and implementation of AZAs (Allocated Zones for Aquaculture), spatial planning, improved and harmonized site selection criteria and holding capacity standards adapted to the GFCM Area within an ecosystem approach to aquaculture (EAA) perspective.

Challenges

- Increasing pressure on the coastal zones requiring development of specific decision-making tools related to territorial management of activities and competing uses
- Lack of criteria for site selection, licensing and leasing procedures
- Lack of aquaculture integration at the local, national and regional level
- Space limiting factors, administrative and local conflicts
- Lack of indicators and reference points to monitor the sustainable development of aquaculture activities along coastal zones

Objectives

- To improve regional and national coastal aquaculture spatial planning and site management through the use of AZAs in support of appropriate environmental governance for aquaculture measures
- To implement a common regional strategy for the creation of AZAs for the responsible development and management of aquaculture activities
- To enhance the national capability of GFCM Member States in aquaculture spatial planning, use of geographical planning tools and implementation of AZAs
- To facilitate and monitor through indicators the development of aquaculture within other coastal human activities facilitated and
- To implement AZAs within an integrated coastal zone management framework

Actions

- Pilot actions to support marine spatial planning for aquaculture development (including managerial synergies in the AZA context: shared costs, common infrastructures, safety issues, monitoring capacity)
- Develop and disseminate guides for coastal marine areas for aquaculture activities according the implementation of AZAs;
- Develop Geographic Information System (GIS) tools for zoning and for the establishment of AZAs
- Training activities and national capacity building of competent authorities related to technical and legal aspects and establishing AZAs
- Cooperative programme on identification of mitigation measures and management issues (mitigation measures when exceeding Environmental Quality Standards; optimization of size depth/distance; climate change adaptation; etc.)

SPATIAL PLANNING AND ALLOCATED ZONES FOR AQUACULTURE



- Apply indicators and reference points (economic, social, environmental and governance) for site selection and monitoring in aquaculture

STRATEGIC AREA 2: AQUACULTURE AND ENVIRONMENT INTERACTIONS

Background

Assessing interactions between aquaculture and the environment – taking also into consideration other coastal and land-based activities – and monitoring aquaculture operations are essential activities to evaluate the effects and impacts of aquaculture on the environment and on aquaculture itself. Guidelines, harmonized aquaculture environmental monitoring programmes, environmental quality standards (EQS) including the prevention and control of contaminant procedures and of escapees should be developed and widely adopted at the regional level. Better management practices (BMPs) should be promoted to achieve a high level of integration of aquaculture with the environment and to be an effective means for the implementation of sustainable aquaculture. The adoption of BMPs could also improve in particular the public perception of aquaculture and the acceptability of aquaculture products by consumers. Coastal lagoons are highly ecological resilient and productive ecosystems and have always represented a source of livelihood for riparian communities. Actions should be supported for the sustainable management of coastal lagoons, including preventing environmental degradation, restoring ecological conditions, and preserving traditional aquaculture and artisanal fisheries, which represent a strategic component of local communities' common traditional knowledge.



Challenges

- Lack of regional harmonized environmental monitoring programmes for aquaculture
- Lack of application of risk analysis (pathogen; and emerging disease; ecological including alien species in aquaculture)
- Lack of awareness on risk management components; including lack of knowledge on insurance processes in aquaculture production
- Vulnerability of the aquaculture sector to climate change stressors
- Unregulated restocking activities with aquaculture products
- Environmental degradation of several coastal lagoons in the Mediterranean and the Black Sea due to inadequate management

Objectives

- To increase the knowledge of interactions between aquaculture and the environment
- To minimize the impacts of aquaculture on the environment, and vice versa, as well as impacts on biodiversity and to develop and implement appropriate mitigation strategies
- To promote the development of aquaculture better management practices (BMPs)
- To increase awareness and understanding of the insurance approach in aquaculture
- To develop adaptation and mitigation strategies to reduce the impact of climate change on aquaculture
- To prevent any further degradation of coastal lagoons and their restoration and/or preservation

Actions

- Develop and disseminate regional guidelines on risk analysis methods in aquaculture (alien species, water quality, pathogens, drugs and feeds)
- Promote BMPs for farmers at the regional level on, inter alia, stocking density; harvest calendar; feeding protocols; disease diagnosis; reporting; surveillance and control; and develop a flexible tailor-made service for farmers depending on the size of the farms and enterprises

- Establish a database of alien species in the Mediterranean and Black Sea., develop bio-technical methods to assess and minimize the negative impact of alien species on the environment
- Research and training on efficient use of water resources and maintenance of water quality (integrated multi-trophic aquaculture, recirculating aquaculture and other systems)
- Training activities and capacity building on BMPs approach and on impact of pathogens introduced by aquaculture on wild populations
- Cooperative research activities and development of tools and models for the AZA, environmental impact assessment (EIA) and EMP
- Cooperative research and pilot action on restocking good practices
- Apply indicators and reference points on environmental risk analysis
- Develop research on effects of climate change on aquaculture and adaptation and mitigation measures
- Support actions for the sustainable management of coastal lagoons

STRATEGIC AREA 3: DISEASE MANAGEMENT AND AQUATIC ANIMAL HEALTH

Background

Aquaculture presents a number of biosecurity concerns that pose risks and hazards to both its development and management, and to the aquatic environment and human health. Biosecurity implies that appropriate measures to reduce the probability of a biological organism or agent spreading to an individual, population, or ecosystem, and to mitigate the adverse impact should be put in place.

Biosecurity threats in aquaculture include any disease which could potentially cause losses in a farm. Entry points for spread of diseases comprise animal movements, international trade/globalization (trans-boundary aquatic animal diseases - TAADs), aquaculture inputs: (e.g. seed, feed), water, birds, fomites (e.g. equipment, such as nets and siphon hoses), and invasive alien species. Beside spreading pathogenic agents and parasites, invasive alien species can also be considered one of the key causes of loss in biodiversity.

Managing the health and welfare of farmed fish depends on the overall management of the farm, including the responsible use of veterinary medicines, biological products and chemicals. The use of such products must be undertaken responsibly as to ensure fish health while maintaining food safety and food quality, and minimizing the potential impacts to human health and the environment.



Challenges

- Weak regional capacity diagnosis and disease monitoring
- Scarce application of risk analysis to aquaculture pathogen risks and genetic risks
- Sustainability of aquaculture and biodiversity threatened by risks of pathogen spreads and newly emerging diseases
- Low availability of vaccines and therapeutics
- Risk of escapee and impacts from alien species

Objectives

- To develop harmonized aquatic animal health programmes and biosecurity measures at the regional level
- To minimize the risks of pathogen spreads and newly emerging diseases
- To enhance health and resistance to pathogens
- To minimize impacts on ecosystems and human health from Mediterranean and Black Sea aquaculture
- To improve diagnostic tools, national capacity control and prevention of pathologies
- To enhance the responsible use of drugs and vaccines

Actions

- Research on epidemiology of aquatic animal pathologies (bacteria, viruses, parasites) and risk analysis (use of novel techniques to study the interactions of wild fish and pathogens)
- Capacity building in risk assessment and biosecurity measures for disease prevention
- Cooperative programme on technologies and systems to reduce the incidence of disease/parasite infestations (genetic selection towards increased immunity of aquatic organisms)
- Development of diagnostic skills at the national level and systems for the early diagnosis of pathogens
- Support networks of research institutes and on-going development programmes working on aquatic animal health and linked to the ongoing programmes

- Establish a regional monitoring programme in order to prevent epidemics and an emergency response systems at national and regional level
- Research to develop effective vaccines

STRATEGIC AREA 4: GOVERNANCE AND REGULATORY FRAMEWORKS

Background

A sound development of aquaculture in the region requires good governance and sound regulatory frameworks. It is widely acknowledged that one of the major bottlenecks to aquaculture development at the regional level is bureaucracy and red tape which result in lengthy and cumbersome processes to complete aquaculture license and farming authorizations. Such constrain stems from the lack of a single administrative body in charge of aquaculture (one window) to centralize all administrative aspects related to licensing and authorizing new aquaculture operations. The need for improved regulatory frameworks for aquaculture activities require also the tackling of issues related to human and animal health, environment and market. In consideration of aquaculture dimensions in Mediterranean and Black Sea, these aspects should be defined, correctly addressed and harmonized at the regional level.



Challenges

- Lack of regulatory frameworks for aquaculture (namely rules and procedures regulating the sector)
- Overlapping of many legislations and authorities and lack of strategies for aquaculture and long-term planning
- Lack of a single administrative body in charge of aquaculture
- Lack of harmonized norms and standard methods on aquaculture cross-cutting and cross-bordering issues and challenges (environment, market, human and animal health) in the region

Objectives

- To contribute to the simplification of administrative procedures to complete licensing and authorization to undertake aquaculture activities
- To support the establishment of aquaculture legal frameworks accompanied by harmonized procedures, national strategic plans and guidelines supported by a system of reliable indicators and reference points

Actions

- Production of guidelines and national capacity building aimed in supporting the simplification of administrative process for licensing
- Cooperative research programme among the different national administration and stakeholders aimed in harmonizing regulatory frameworks on cross-cutting and cross-bordering issues (market; environment; animal and human health)

STRATEGIC AREA 5: QUALITY AND SAFETY OF PRODUCTS, MARKETS AND CONSUMERS

Background

In the Mediterranean and Black Sea, competing in the present aquaculture products trading context would require a shift from production-oriented approach into a market-oriented production strategy addressing concepts such as product quality and safety, economic efficiency and market promotion. Market-oriented aquaculture entails knowledge on customers, competitors and markets. Information on consumption, consumers' preferences and price trends would be crucial to planning production at the farm, company or national authority level. It is envisaged that producers should position their products on the market as high value products based on their environmental performance, high health standards and traceability, and further develop domestic and international markets.



Challenges

- Increasing demand for value-added seafood products for their convenience, versatility and different flavour profiles
- Need for a clear aquaculture production/ marketing strategy and vision, a well-structured market data and information collection as well as efficient dissemination tools
- Need for product differentiation and the adoption of quality management systems including certification, traceability and eco-labelling
- Scarce knowledge and harmonized methods to guarantee high quality and safe fish and shellfish productions and to avoid pollution threats from other human activities and from toxic algal blooms
- Often negative public perception and image of aquaculture and consumption of aquaculture products

Objectives

- To improve food safety and quality, and marketing strategies for aquaculture products
- To enhance regional and national capacity on quality certification and traceability of aquaculture products, food safety and quality promotion
- To boost communication with consumers and public perception of aquaculture and enhancement of consumer demands
- To guarantee the safety of aquaculture products with high quality standards and maximum human health benefits
- To improve the understanding of the dynamics of regional seafood markets and strategies to increase competitiveness
- To promote a more competitive and responsible Mediterranean and Black Sea aquaculture industry through a regional aquaculture marketing programme, diversified production, and improved public aquaculture image

Actions

- Cooperative research on prevention and control of contamination in aquaculture products
- Provide technical assistance/training for small-scale and medium-size farmers to increase their competitiveness and risk management capabilities

- Implementation of a programme of activities in support of a market-oriented approach in production planning and dissemination tools
- Cooperative research on products technologies, analyses and control methods and rapid test for farmers on bio-toxins contamination in aquaculture products
- Implementation of a programme in support to aquaculture farmers on, *inter alia*, market opportunities, certification schemes and traceability, collective actions

STRATEGIC AREA 6: RESEARCH, KNOWLEDGE SHARING AND TECHNOLOGY TRANSFER

1. Background

Research plays a fundamental role in aquaculture and any progress in the industry goes hand in hand with relevant technical findings and successful knowledge sharing with the industry. The Mediterranean and Black Sea show a high degree of variability in aquaculture research capacity and ability to communicate key findings to the aquaculture industry and other interested parties. This calls for enhanced synergies through a common research strategy, improved coordination and an effective dissemination and application of results. Research should focus on strategic objectives, appropriate linkages should be ensured so that research effort is not duplicated or fragmented, and available funds be used accordingly.



Challenges

- Inadequate research focus and weak linkages between research, extension and industry
- Lack of transfer to industry of applied research results, knowledge and technological innovation
- Lack or weak scientific cooperation and knowledge sharing among the different activities within the Mediterranean and Black Sea research institutions

Objectives

- To develop a strategic research and innovation agenda with a selection of research priorities relevant to end-users
- To promote and improve knowledge transfer of research results and innovation to end-users resulting in uptake and application

Actions

- Develop an up-to-date strategic research and innovation agenda with a selection of research priorities relevant to end-users, and adopt a multidisciplinary approach to include all the components of sustainable development into research
- Develop innovative tools and communication/dissemination methods to efficiently and effectively transfer knowledge to the industry and the research needs from the industry to research
- Creation of networks to foster international partnership and transnational cooperation including research
- Set-up a network group of economic interest involving industry, research, policy makers, economists and consumer associations
- Develop a programme to uptake innovations by industries through the implementation of “researchers renting programmes”

STRATEGIC AREA 7: SUSTAINABLE FEED PRODUCTION AND MANAGEMENT

2. Background

Aquaculture has been growing at a fast pace during the last decades, concurrently with the production of feed, as a large part of the industry relies on the supply of external feed inputs. Aquaculture production is expected to grow in future to contribute to an increasing demand for high value aquatic food, and although aquaculture is more efficient in converting feed inputs into proteins compared to other livestock farming industries, concerns do exist over the likely competition for feed resources. Although the proportion of fed species production is increasing, the content of fish meal in aquaculture feed for different cultured species is steadily decreasing in time, yet representing a consistent global quantity. On the other hand, the use of fish oil by the aquaculture sector will probably increase in the long run. These trends raise sustainability concerns with on-going debates over the use of fish and other resources to produce fishmeal and fish oil for aquaculture feed, and some research is being carried out to identify more cost-effective dietary fishmeal replacers. Good feed management is also crucial in controlling the direct and indirect environmental impacts of farming operations (eutrophication and pollution associated with excess nutrient waste).



Challenges

- Fed aquaculture of carnivorous species is largely dependent on fish meal and fish oil coming mainly from marine capture fisheries with evident concern about the implications
- At the farm level, the cost of feed can represent a large part of the production cost with evident impacts on the economic sustainability dimension of the sector
- Lack of good feeding management practices

Objectives

- To promote the use of alternative and sustainable raw materials (replacement of fish oil and fish meal) to supply farmed species' major dietary source of protein and lipids
- To improve quality and cost-effectiveness of the feed
- To minimize the environmental impact from aquafeed
- To adopt and implement good feed management practices at farm level

Actions

- Cooperative research programme on developing knowledge on feed technologies and sustainable raw ingredients to produce cost-effective aquaculture feed with improved quality
- Support cooperative research on farmed non-carnivorous species
- Promote specific BMPs on feed management at farm level

STRATEGIC AREA 8: TECHNOLOGY INNOVATION AND DIVERSIFICATION

Background

Technology in aquaculture has expanded at an impressive rate during the past decades. Based on both this past progress and the present technological advances being made, it is reasonable to expect aquaculture to benefit further from the rapid technological advances in many fields. Investments and developments in aquaculture research continue to lead to improvements in technology innovations and production systems, resulting in increased production efficiency and in better growing performance, higher product quality and safety for consumers and a more sustainable industry.

Undoubtedly, innovative and emerging technologies can contribute to improving aquaculture sustainability. Research on new species for aquaculture, innovative farming technologies and models for the diversification of production are necessary to promote new markets and product opportunities for both farmers and consumers.



Challenges

- The current production models applied for the main farmed species shows market limits when supply and costs increase
- Lack of competitiveness and low level of species diversification and of product type differentiation
- Lack of R&D applied to diversified production technology

Objectives

- To promote the diversification of products, species and farming methods
- To enhance the modernization of existing facilities and infrastructure

Actions

- Cooperation programme on applied research on technical and genetic selection programme to improve growth rate, survival rate, resistance to disease, and feed conversion rate
- Develop and disseminate results and knowledge outputs on research technology innovation and diversification
- Cooperative research and initiative on diversification of: market product, species, production system and farming methods (open-sea, remote cage farming and closed recirculation systems)

STRATEGIC AREA 9: SOCIAL RESPONSIBILITY

Background

Reaching the status of a mature industry means also ensuring that aquaculture is not only economically and environmentally sustainable but also that farms are developed and operated in a socially and culturally responsible manner. More specifically, corporate social responsibility (CSR) in aquaculture looks at internal, external and global spheres of responsibilities and implies that at the organization or individual level, a series of actions are carried out for the benefit of society at large and to maintain a balance between the economy and the ecosystems as a whole. It addresses, among others, issues related to quality of employment, the welfare of people working in and around the industry and community as a whole. Responsible aquaculture productions should take into consideration these concepts and should comply with the concerned framework on employment, food safety, bio-security, health and hygiene as well as workers' safety to reflect a high degree of social accountability. It is important to provide a healthy and safe working environment and in this regard, consistent and effective training and guidelines in health and safety practices are crucial preventative measures. Social responsibility is also closely linked to social acceptability, and in this connection, insurance should also be considered to deal with aquaculture risk management and cover potential harmful externalities caused by aquaculture operations. Finally, social responsibility defines a level playing field on the basis of which socially responsible practices can be developed and communicated effectively to consumers.



Challenges

- Minimization of hazards and risks in the working environment
- General lack of awareness in the industry and related sectors (e.g. credit organizations, aquaculture authorities, etc.) about corporate social responsibility
- Limited awareness of consumers on the social responsibility actions of the sector
- Lack of capabilities in social risk management

Objectives

- To improve workers health and welfare through a safe and healthy working environment and hygienic working conditions
- To provide a rich working environment and lifelong learning to employees
- To raise awareness and build farmers' capacity to deal with risks associated with working conditions and potential hazards in aquaculture facilities
- To support the establishment and implementation of procedures and policies to prevent workplace accidents and emergency response procedures
- To increase awareness about opportunities that aquaculture insurance can offer to the aquaculture sector
- To improve social risk management capabilities
- To raise awareness on issues related to corporate social responsibility
- To develop a level playing field on the basis of the social responsibility

Actions

- Support relevant training available target user group in health and safety practices, procedures and policies

- Training activities and national capacity building related to social risk management in aquaculture and corporate social responsibility
- Link social responsibility with consumer information

STRATEGIC AREA 10: EMPOWERING AQUACULTURE FARMERS' ORGANIZATIONS

Background

Despite its growth, marine/brackish aquaculture in the GFCM area presently faces several challenges, inter alia, disproportionately heavy regulatory burdens, scarceness of new sites, tough price competition, restructuring in distribution channels, increasing consolidation and market power in the retailing sector, tighter standards for handling and food safety by retailers and increasing societal concerns about sustainability of seafood production systems and responsible practices with regards to environment, food safety and animal welfare. Aquaculture farmers' organizations (e.g. associations, cooperatives or other institutional arrangements) can play a strategic role in addressing these common challenges through self-regulation, collective activities and actions. The fundamental role of farmers' organizations in promoting sustainable development of aquaculture in the Mediterranean and the Black Sea was also acknowledged at GFCM level on several occasions.



Challenges

According to outputs of the MedAquaMarket project³ and findings of the Survey on Aquaculture Farmers Organizations⁴, aquaculture sectors in the Mediterranean and the Black Sea have to address the following challenges;

- Lack of cooperation amongst producers for promotional activities,
- Low level of collective actions,
- Unregulated supply and demand patterns,
- Inefficient mechanism to control product supply and price reductions,
- Lack of market data/information and efficient marketing,
- Lack of communication/dialogue between stakeholders, industry and public institutions,
- Lack of participation of farmers in policy and decision-making processes including legislative aspects,
- Decreasing negotiation power of farmers in the value chain and
- Negative perceptions regarding aquaculture (image)

Objectives

- To enhance dialogue among farmers for collective activities and actions;
- To enhance a level playing field among aquaculture farmers in the Mediterranean and Black Sea;
- To promote the role of aquaculture farmers in policy and decision-making processes;
- To collect, analyze and disseminate market data and information to dynamically adapt supply to market demand both in terms of quantitative and qualitative attributes thus stabilizing the markets;
- To facilitate well-structured advertising, continuous promotion, marketing and public service communication;

³ Development of a strategy for marketing and promotion of Mediterranean aquaculture (MedAquaMarket). GFCM Studies & Reviews No. 88. 2010

⁴ Preliminary Survey on Aquaculture farmers' Organizations in GFCM Member Countries. CAQ-Eurofish. Pre-meeting; The Role of Aquaculture Farmers' Organizations in the GFCM Area. 11 Dec. 2013, İzmir, Turkey.

- To promote the image of Mediterranean/Black Sea aquaculture by supporting the development of a Code of Practices/Better Management Practices for responsible aquaculture practices and further development of collective quality norms and certification schemes;
- To strengthen the negotiation power of farmers in the value chain;
- To facilitate capacity-building through providing technical assistance/training for farmers to increase their competitiveness and risk management capabilities;

Actions

- Establish virtual “ Forum/platform of GFCM aquaculture farmers’ organizations” within SIPAM using the IT infrastructure of GFCM/CAQ to enhance dialogue and facilitate collective actions and arrangements at GFCM level;
- Carry out an in-depth study on aquaculture farmers organizations (AFOs) in GFCM member to complement the previous CAQ preliminary survey on AFOs with the aim of:
 - ✓ Establishing a comprehensive database on AFOs in the Mediterranean and the Black Sea using IT infrastructure of GFCM/CAQ,
 - ✓ Achieving a comprehensive synthesis of present status of aquaculture farmers’ organizations in the Mediterranean and the Black Sea, focusing on legal, organizational and managerial aspects along with functionality of such organizations,
 - ✓ Developing a recommendations document for internal better management practices in AFOs, and
 - ✓ Developing recommendations (a common strategy) for empowering AFOs in GFCM member countries.
- Develop a common guideline/approach for analyzing risks to sustainable development of aquaculture in GFCM member countries;
- Organize series of pilot actions targeting AFOs (at country level) to promote risk analysis and management capabilities for these organizations in GFCM member countries;
- Promote the application of Better Management Practices for responsible aquaculture, collective quality norms and certification schemes through pilot actions (training/workshops) targeting AFOs at country or regional level;
- Develop a common market information/data collection scheme to be implemented by AFOs at national level taking advantages of SIPAM portal;
- Promote the use of sustainability indicators by AFOs for monitoring the development of aquaculture at national level;
- Organize concerted actions (campaigns) at national level through AFOs to promote public communication, seafood consumption and image of aquaculture products using a common approach and visual materials.