



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



GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN
COMMITTEE ON AQUACULTURE
THIRD COORDINATING MEETING OF THE WORKING GROUPS (CMWG)
FAO HQ ROME, Italy, 24-26 February 2010
REPORT OF THE MULTISTAKEHOLDERS WORKSHOP ON SITING AND CARRYING CAPACITY (WGSC-SHoCMed) Tangier, Morocco 29-30 October 2009

OPENING AND ARRANGEMENTS OF THE MEETING

1. The Multistakeholder Workshop on Siting and Carrying Capacity (SHoCMed) was held from 29 to 30 October 2009 and was hosted by the Centre Régional de l'Institut National de Recherche Halieutique (INRH) Malabata – Tangier (Morocco). The Workshop was opened by Mr Abdellatif Orbi, Chief of the “Département de Océanographie et d'Aquaculture” of the Institut National de Recherche Halieutique (INRH), he welcomed the participants and recalled the importance of the aquaculture development in Morocco and how the aspects in planning the identification of the carrying capacity is strategic in the wide context of the integrated coastal zone management.

2. Mr Spyros Klaudatos, from University of Thessaly and also chairperson of the Committee on Aquaculture (CAQ), thanked the INRH for the kind hospitality and the excellent organisation of the meeting. He recalled to the participants the relevance of the meeting within the framework of the CAQ activities and he underlined that the definition of criteria and standard for the identification of the most appropriate sites and monitoring activities is essential for any further development of aquaculture in the Mediterranean. The workshop was organised within the activities of SHoCMed¹, a project in support to the Working Group on Siting and Carrying Capacity (WGSC) of the GFCM Committee on Aquaculture (CAQ) and was organised back to back with the Meeting on “Development of a Strategy for Marketing and Promotion of Mediterranean Aquaculture” in which there was a large participation of stakeholders, the administration, the research and the industry.

¹ SHoCMed. “Developing siting and carrying capacity guidelines for Mediterranean aquaculture within aquaculture appropriate areas” is operative since October 2008. The project is in support to the activities of the GFCM Committee on Aquaculture (CAQ) which is co-funded by European Commission DG-MARE.

ADOPTION OF THE AGENDA

3. Mr Ioannis Karakassis, Coordinator of the WGSC, recalled the main aspects of SHoCMed and the objectives of the meeting. He then introduced the Agenda of the workshop that was adopted with some minor changes; he acted as chair of the meeting. The Agenda and the list of participants are attached to this report as Appendix A and Appendix B respectively.

PRESENTATION OF WORKING GROUP ON SITING AND CARRYING CAPACITY AND SHOCMED PROJECT

4. Mr Fabio Massa, aquaculture officer of the GFCM, introduced the overall aspects of the WGSC and on the main topics related with the SHoCMed Project. He recalled that ShocMed, among others, aims in producing criteria for enhancing the integration of aquaculture in Integrated Coastal Zone Management (ICZM) by improving site selection and holding capacity benchmarks and reference points. This will also provide a base for harmonisation of standards and for an appropriate aquaculture policy and legal frameworks, across the Mediterranean, ensuring equal terms of competition and minimal environmental damage. He, by recalling also the main activities carried out by SHoCMed, focused on the data collection which is aimed at the identification of the best strategy for a consensus establishment, based on scientific evidence, on site selection and monitoring. Information were also given on the relation between ShocMed and the other CAQ project InDAM, focused on the development of indicators for the sustainable development of aquaculture in the Mediterranean.

INTERACTION BETWEEN AQUACULTURE AND THE ENVIRONMENT AND OTHER USES IN THE COASTAL ZONES MEDITERRANEAN SEA.

5. Mr Karakassis presented the results of a review and bibliography analysis on the main issues related to the interaction between the aquaculture and environment in the Mediterranean Sea. The main subject covered by the scientific literature concerned mostly aquaculture and interaction with the environment, fish farming and shellfish farming and their relationship with the benthos, nutrients and plankton, wild fish' disease parasite and alien species. Based on the available scientific information on the effects that aquaculture production might cause to the Mediterranean environment were presented. With reference to the effect of the cage farms wastes and nutrients on water, he underlined that several studies have no detected significant changes in dissolved nutrients. The solute release from aquaculture may be transported far from the farming site thus the difficulty to detect in several studies significant changes in the water quality in the vicinity of the fish farms, and in particular in the Mediterranean. The results of meta-analysis of the effects of aquaculture wastes on benthic communities demonstrate their degradation in relation to fish farms. One of the most documented effects of aquaculture on biodiversity in the Mediterranean is the one recorded for the *Posidonia oceanica* meadows. In these cases a high correlation between the predicted and observed sedimentation as well as between the predicted sedimentation and macrofauna diversity has been recorded. However most biological and geochemical variables are determined by a combination of several variables such latitude, depth and sediment type.

6. Mr. Karakassis also reported the results of a review of the local interaction of caged and farmed fish. Some studies showed an increasing of fish aggregation determined by different factor such as feed supply, in addition the abundance, biomass and species richness of the aggregating fish assemblages are correlated negatively to distance from shore and positively with the size of the farms. Some studies observed also an increase of fishing activities in some fish farms. The interaction of farmed and wild fish has been addressed by several studies. In general there is an aggregation of wild fish from various species under the fish cages during the feed supply. Biomass and species richness of aggregating fish assemblage are correlated negatively to the distance from shore and positively with the size of the farms.

7. Mr Pablo Sanchez, made an additional presentation on the relationship between the coastal aquaculture and marine ecosystems, as well as the definition of exclusion criteria. He correlated the different types of aquaculture production with use of space. Regarding to the most important production system, sea cages, he explained a general model, linking all the pelagic and benthic compartments. After this broad point of view, different exclusion criteria as water quality, affection of protected species were analyzed. Organic matter and nutrients included in the feed pellets and in the fish fecal pellets affects the mass balance, increasing oxygen consumption by heterotrophic processes and availability of N and P. This may influence pelagic systems that could be therefore affecting at a wider scale (even for kilometers). To this extent, he underlined the difficulty to detect some of the potential environmental factors as the increase of dissolved or particulates organic matter as well as the increase of chlorophyll-a in high depth and turbulent waters. In addition, also benthos communities are heavily affected, specially the most sensitive habitats like seagrass meadows, with an impact that can expand over ten or hundreds kilometers. Other ecological values, as sea birds and marine mammals can be also affected. Coastal aquaculture also interacts with fisheries and the wild fish communities because it influences the spatial and temporal distribution of fish assemblages.

8. With reference to the interaction of aquaculture and the other users of the coastal areas , Mr Sanchez brought the attention on the heavy use of space, for leisure to extractive economical activities, that affects the ecosystems. The presence of aquaculture activities in coastal areas in recent years has produced some conflicts with the other users of the resource, therefore planning is a hot point to avoid conflicts. The use of space, the quality of water, affection of landscape, use of port facilities and the positive and the negative interactions with fisheries are some of the key aspects for site selection and spatial planning for avoiding conflicts among users. The talk focussed on different user of marine resources as shipping, tourism and leisure, fisheries and agriculture. He also reported some cases from literature and personal experience in which the aquaculture activities are affected by the other users, reporting the example of the effects of sewages or oil spill on the water quality.

9. Participants stressed the importance to assess the interaction of intensive marine aquaculture with the surrounding environment and in particular on the interaction with some specific sensible marine habitat and species such as the posidonia beds (*Posidonia oceanica*). Furthermore the participants recalled the important role of the posidonia seagrass as protected habitats in the Mediterranean ecosystem as well as an essential habitat for juvenile stage of marine species and for the fisheries resources. Some participants recalled that this issue was also discussed during the previous meeting of the WGSA held in Crete and it was reiterated that the establishment of the new aquaculture installation in the Mediterranean should be avoided or limited around Posidonia beds and if the case, a compensatory plan should be contemplated. Some participants recalled also that the directive of Natura 2000 could be also a good reference for the relation of the aquaculture activities with protected areas.

10. Following the presentations the participants discussed on the evaluation of the interaction between aquaculture and environment. They emphasized that the environmental component as well as the the interaction with the socio economic aspects, when dealing with the selection and management should be considered for the sustainable development of aquaculture, at local and regional level.

11. Furthermore the workshop discussed on the main aspects related to the different interactions of the aquaculture with the water column surroundings the cages and the benthos beneath the cages, including the aspects related to the monitoring of such interactions. Discussion was also made on the main criteria of exclusion for the implementation of aquaculture activities and on the main interactions between aquaculture and marine protected areas.

12. There was a general consensus that the physical environment monitoring of the areas surrounding the Mediterranean fish farms is an essential activity not only to describe the effects of aquaculture on the environment but also to monitor the impact of external activities on the aquaculture actions (i.e. coastal eutrophication, dredging coastal works, industry, urban, harbour related activities). Aquaculture activities require clean water and are not compatible with and environment polluted by industrial, urban or other

coastal activities, also including pollution generated from not sustainable aquaculture. By ensuring a good water quality and environmental integrity is the first essential condition for a sustainable aquaculture.

13. With reference to the monitoring programme for the environment of finfish marine aquaculture the participants reiterated again the discussion made during the WGSC meeting held in Crete in October 2008. In that occasion a limited list of variables to be measured in the Mediterranean fish farms has been indicated by the experts. The aspects about the standard and monitoring and site selection for aquaculture were also further stressed during the WGCS – Workshop on National legislation on Siting, Monitoring programme and on Environmental Impact Assessment for finfish marine aquaculture (SHoCMed)” 13-14 July , Vigo (Spain) hosted by CETMAR. The monitoring programme for the environment of finfish marine aquaculture in the Mediterranean countries is still not homogenous and only in few cases national limit standards parameters are identified. In some areas excluding/including criteria area for the installation of fish farms were defined. Participants also agreed that the monitoring activities should be proportional to the scale of intensity of the aquaculture and that protocols and standards should be determined as much as possible at Mediterranean level.

14. Mr Joseph Borg, from University of Malta, pointed out that, when formulating monitoring procedures and protocols at Mediterranean level, consideration should also be given to the requirements indicated by the EU’s Water Framework Directive (WFD), which is aimed at achieving good ecological status for all water bodies, including coastal waters. For example, the WFD requires monitoring of the levels of certain chemicals in coastal water, while it also proposes the use of bioindicators (macroalgae, phytoplankton, seagrasses and benthic invertebrates) for monitoring the ecological status of coastal waters. Consideration should also be given to procedures and guidelines for the quality of the marine environment according to the EU’s Marine Framework Strategy Directive (MFSM), which is aimed at establishing a framework for community action in the field of marine environmental policy. The MFSM centres on sustainable use of the sea and it embodies an ecosystem-based approach to the management of human activities, including aquaculture.

15. Ms Guzel Yucel-Gier, from Dokuz Eylul University, Izmir, (Turkey), presented a case study of Izmir Bay, an important area for Turkish sea bass and sea bream production. The in-place fishery laws and Environmental Impact Assessment (EIA) regulations were examined. The official parameters for physical, chemical and biological conditions in sitting decision making were outlined, and the entrepreneurs’ interactions with a variety of ministerial bodies, leading to licensing were traced. In the coastal zone, the major conflicts for marine aquaculture were with tourism and the development of large sea side holiday homes. But an ecosystem approach such that developed in 2008 by a joint FAO-MARA (Turkish Agriculture and Rural Affairs Ministry) Road Map outlines the environmental problems currently being faced by stakeholders. GIS maps were presented to show land and sea use conflicts in Izmir Bay which is a large and significant inlet. The GIS maps were also considered to play a very important role in the resolution of stakeholder conflicts. In this case study, changes at farm and at bay level, due to new legislation were considered, and a table summarising the percentage of total area occupied by various stakeholders was presented. Seasonal changes in the distribution of biomass were mapped with regard to assessing environmental limitations on fish farms. Finally the social parameters such as working conditions, security and logistics; physical problems such as locating jetties, offices, access to plant, to services, storage, moorings and the thorny problems connected with obtaining permission for shore based fry cages were addressed. Ms Yucel-Gier also recalled that, due to environmental constraints, three lagoons along the coast of Izmir Bay, as well as many other coastal lagoons in Turkey have problems of degradation, usually caused by lack of management. Furthermore, these represent other concerns for the local communities whose artisanal fishery activities have always been integrated with the activities of traditional extensive aquaculture..

16. During the meeting, the issue of the limited integration of aquaculture activities within the coastal areas and the conflicts which can be generated at local level with the local users and the role of the local media, that in some cases may exacerbate the conflict was raised. It was stressed that aquaculture, in some cases aquaculture represents the weakest link of the coastal development, when it is compared with the

other productive sectors (i.e.: tourism), and in these cases the negative interactions of aquaculture with the environment are highlighted meanwhile the positive aspects in terms of employments, income and economic growth are hidden.

17. Participants agreed that these approaches contribute to generate a negative image of marine aquaculture in several coastal areas and this can be reflected in the difficulties that aquaculture is facing for future development. In order to give aquaculture the proper relevance within the integrated coastal zone management, a more appropriated approach should be adopted. In addition the terms “criteria for assessing risk management aquaculture planning” should be more appropriate when the aquaculture development planning is considered while the positive interaction of aquaculture development with the local, national and regional development needs much more visibilit.

18. Participants recalled that a correct sectorial plan of aquaculture should be based on the coastal zone management also. In that sense, in order to avoid any possible conflict among users and for a better communication among the parties, it was stressed the importance of the knowledge of the potential sites and the involvement of all the different stakeholders. The importance of the use of indicators to assess and monitoring the sustainable development of aquaculture was highlighted. In this respect coordination and interaction between the ShocMed project and InDAM project were also indicated as an essential tool within the activities of the WGSC.

19. Federico De Rossi, GFCM Data and Content Manage, illustrated the result of the work carried out within the GFCM Secretariat concerning the SHoCMed project. The web portal, hosted in the SIPAM website, is organized into four main sections: News, Events, Documents and Presentations. A proposal of web search tool, to be made available on the web page, was advanced with the aim of providing a web application which allows users launching queries in the SHoCMed data-bank. By selecting one or more key words it would be possible to get the list of documents (article, publications, etc...) which matches with the criteria previously selected. For each document retrieved, additional information, apart from the title, authors, type of document and publication info, will be easily made accessible to the user: abstract, species, structure, country, GSA (with the related map) and environment. May tables and related charts be present in the document itself, they would be displayed in a specific section.

20. The work by the GFCM Secretariat was strongly appreciated by the participants. With the aim of having information available for meta analysis and other studies targeted on the Mediterranean region, they stressed the importance of making available a synthesis of the information on the researches carried out, for example, on the environment monitoring surrounding the fish farms. The meeting suggested to investigate a possible cooperation with the new multidisciplinary journal “Aquaculture Environment Interaction”.

21. Mr Pablo Avila presented the project proposal “Integration of fisheries and aquaculture on the coastal planning of the Mediterranean. (IFAMed)”. The project is led by the IUCN and it is framed within ENPI CBC Mediterranean Sea Basin Programme 2007/2013, Priority 1: “Promotion of socio-economic development and enhancement of territories” and Measure 1.2; “Strengthening economic clusters creating synergies among potentials of the Mediterranean Sea Basin countries”. The IFAMed Project pursues to establish an integrated common approach to the maritime spatial planning for promoting rational use of the sea and improve decision-making processes focusing on artisanal fisheries and fish farming activities. This three years project is based on the cooperation and partnership building process. Together with the IUCN, experts coming from nine different countries within the Mediterranean sea basin will be involved as well as the Agricultural, Fisheries and Aquaculture Regional Ministry of Andalusia.

22. Mr Massa further informed the participants on the Project: “*Lagoons management its interaction between capture fisheries and aquaculture in the Mediterranean will be designed and developed within the overall context of Integrated Coastal Zone Management and in an Ecosystem Approach for Aquaculture perspective*”. The project should be operative early in 2010 and will be funded by Italy for 2 years. The principal objective of the Project is to explore the main issues dealing with interactions between aquaculture and capture fisheries in the Mediterranean coastal lagoons and in providing guidelines and

recommendations to the countries on this issue by using a systemic approach (ecology, economy, governance, legal framework).

REVIEW OF EXITING PROCEDURES AND GUIDELINES FOR AQUACULTURE SITE SELECTION IN THE MEDITERRANEAN REGION.

23. Ms Rosa Chapela and Ms Martha Ballesteros from CETMAR presented a synthesis of the work carried out in cooperation with the WGSC and within the SHoCMed Project's activities in reviewing the existing procedures and rules for site selection used across the Mediterranean countries. The presentation focused on the analysis of the results of the survey performed through questionnaires sent to the experts of the Mediterranean countries on the different legal and administrative national aspects on monitoring aquaculture activities and on the main environmental aspects on aquaculture regarding the site selection. A total of fifteen questionnaires were filled by different experts as thus Mediterranean countries. Information was also given on the outcomes of the Workshop on National legislation on Sitting, Monitoring program and Environmental Impacts, held from the 13-14 July in Vigo (Spain).

24. Based on a former research conducted within IUCN initiative and on the SHoCMed survey, the main gaps identified by the experts were related to the lack of a specific legal framework for aquaculture activities; in particular the example of the cumbersome of administrative regulation and procedures. Some recommendations were suggested: among others, the implementation of specific regulations for aquaculture and the simplification of licensing procedures including, as an example, the creation of a "window or one-stop shop" in which the different administration are involved for granting the licensing procedures; the definition of common concepts or standards in aquaculture; indicators and tools helping policy makers for policy design and implementation of aquaculture policies, etc.

25. The workshop appreciated the analysis presented and recalled that within the Mediterranean area the license procedures and the lack of an integrated legal framework represent a further limit of the development of aquaculture in the region. The simplification of the legislative environment and procedures should be promoted. Furthermore the planning of aquaculture within the context of coastal zone management needs to be also developed within a legislative framework in order to facilitate the integration of aquaculture with the other costal activities. Furthermore participants concurred with the analysis and recommendations made which are reported on the conclusion of the Workshop

26. Discussion was also raised on the EIA application and on the identification of the procedure that has the greatest influence on the selection of the areas and on the licensing procedures. References were also made on the review made by FAO on the EIA and its monitoring - *Environmental impact assessment and monitoring in aquaculture*". Participants stressed that the EIA is applied during the first phase of aquaculture activities and to be sustainable should be accompanied by a risk analysis, and the activities of aquaculture, as all the other activities insisting on the coastal zone, should be monitored in order to better detect the interaction with the environment and the other use of the coastal areas.

27. Participants stressed that a step forward an harmonized system on both legislative aspects and monitoring activities still requires additional collection of information and activities. In particular, the difficulty to have a common understanding and perception of the technical terms used was commented and in such cases the preparation of a simple "*Glossary on site and carrying capacity*" would facilitate the process of harmonisation of legal and monitoring aspects.

28. Ms Sandra Simoes, from IUCN presented the final version of the *Guidelines on Site selection and Site Management*. The guideline is the result of the cooperation framework established between IUCN-FEAP thanks to the alliance of several experts of different disciplines. The guidelines is organized in 19 sections including the main aspects to be addressed for site selection and site management in aquaculture, starting from the importance of gathering knowledge and the participatory approach; to the economic aspects; the legal framework and Environmental Impact Assessment. The guide aims to provide basic guidelines for good practices in site selection and site management for Mediterranean aquaculture.

29. The GFCM secretariat thanked the IUCN for the work done and highlighted that the guidelines represent also a technical contribution to the activities of the WGSC and in particular to the SHoCMed program. The secretariat recalled also that the existing cooperation between the CAQ and IUCN should be considered within the framework of the Memorandum of Cooperation which was signed between the GFCM and the IUCN Centre for Mediterranean Cooperation during the thirty-second session of the GFCM.

30. The workshop expressing its appreciation for the presentation of the IUCN *Guidelines* underlined its valuable contents that will facilitate the work of the WGSC and SHoCMed programme in make synthesis and identifying priorities and criteria for enhancing the integration of aquaculture in the Coastal Zone Management.

31. Nhhala Hassan, from INRH, presented the “*Study for Planning and Development of Aquaculture Activities – Within Marine Coastal Zone of F’Nideq –Oued Laou*” prepared by the “Department de la pêche maritime, Ministère de l’agriculture et des pêches maritimes” and by the “Institut de Recherche Halieutique. He recalled that although the aquaculture in Morocco started in the fifties, Moroccan marine aquaculture is still not able to progress and conversely is strongly decreasing in the last years. In December 2008 an Agreement to undertake a study for Aquaculture Planning and development for “F’Nideq – Oued Laou” marine coastal zone was established between the DPM and INRH aimed to elaborating a Master Plan for Aquaculture development Integration in this region. The study followed different phases: diagnosis of current situation and inventory activities; definition of biological and technical aspects; impact study; and; elaboration of a developing working plan of aquaculture in the region. Favorable spaces were identified through the following site selection criteria:

32. In addition economic analysis was performed for hypothesis for concession of 20 ha (each) for shellfish culture and hypothesis for concession of 40 ha (each) for finfish marine aquaculture.

33. The participants thanking for the presentation and stressed that the siting for aquaculture development made through the combination of different information is essential for planning the activities on mariculture. This approach will support countries like Morocco in which there is great potentiality for marine aquaculture development. Participants also suggested the use of GIS when the territorial aquaculture planning is made, as an additional tool for the integration of data coming from different discipline and information.

CONCLUSION AND RECOMMENDATION

34. A brainstorming discussion followed on the main topics presented and discussed during the workshop as well as on the main achievements of the first year of activities of the WGSC in the framework of SHoCMed.

The main issues can be summarized as follow:

- Space availability, space allocation and license procedures for farms allocation, still remain the main constrains and issues to be addressed for any further development of Mediterranean sustainable aquaculture;

In particular on space allocation and monitoring:

- The site selection should be considered for the sustainable marine and coastal aquaculture development, by analyzing the environmental condition, the economic feasibility and the social acceptability.
- The multi disciplinary and multistakeholder approach is essential for a better integration of the marine aquaculture into coastal zone management and toward an ecosystem approach for

aquaculture management. If this approach is used for aquaculture it could be considered also as a model of sustainability along the coastal areas;

- Aquaculture procedures of Environmental Impact Assessment should be mandatory for site selection in the Mediterranean. However the EIA is not sufficient and should be convoy by a risk analysis as well as a monitoring program of the environment and of the activities surrounding the environment;
- The aquaculture growth potentiality and monitoring should be accompanied by the use of tools such as the Geographic Information System (GIS) applications; this will allow zoning and planning approach for decision makers and other interested parties; and for the areas suitable for aquaculture activities attention should be paid for planning Allocated Zone for Aquaculture; the use of GIS at most appropriate level (local, national, regional) should also be increased as a tool to convey the information and communication between the decision makers and different stakeholders in a transparent way. It is also considered an appropriate tool to be used when participatory approach is implemented. As GIS contains exact data and related information, it works as a plan from which discussion can be held. Another aspect to be taken into account is the strategy to be used on the co- construction process of the GIS for Planning and Managerial uses. This is the administrative and then the environmental approach. As environmental, oceanographical and technical data is expensive to collect, and administrative approach of the uses of the Coastal Zones needs to be done in advance. This way, there is a pre-selection of suitable zones so the dimension of the areas to be described from an environmental point of view is reduced and the costs of the data collection as well. Public Administrations should also be involved in collect or made available data for site selection.
- Particular attention should be paid in monitoring marine aquaculture and capture fisheries for the evaluation of the positive interaction (environmental and socio economic) between these activities where the small scale fishery and aquaculture operate in the same areas. Furthermore those near-shore areas in which traditional extensive aquaculture practices exist, should be censused and valorised. This could be done by underlining the more evident case studies, highlighting their socio-economic contribution to the local communities and to the maintenance of biodiversity.
- Monitoring the physical environment surrounding the aquaculture activities still remain a priority for the evaluation of the effect or interaction or impact of aquaculture on the environment and on the aquaculture itself. Major attention should be paid to the monitoring of the sediments rather than the water column. To this extent the list of variable identified by the WGSC (sediment sampling, redox potential, organic & inorganic nutrients, sediment organic matter, total phosphorus in sediment, sediment grain size, benthic community, water quality) have been confirmed.
- The definition of EQS for carrying and holding capacity for aquaculture purposes, still meet difficulties for having common values for the benthic effects, due to the interaction of many physical variables (current, depth zones, sediment). However the harmonization of data collection of environmental parameters at Mediterranean level will facilitate the monitoring in order to avoid that such parameters do not exceed the reference points that will be established for aquaculture environment.
- Furthermore new aquaculture installations should be avoided or limited in or around sensitive habitat; these installations should be accompanied by a restrict monitoring or mitigation plans;

On license procedures and on Mediterranean legislation on siting:

The main gaps identified by the analysis of the aquaculture legislative framework in the Mediterranean, according to the data obtained by the ShocMed survey, can be summarized in the following conclusions and recommendations:

- the survey shows the heterogeneity in the legal framework regulating aquaculture: concepts, definition, competence, right, institutions, etc.; the absence of specific regulation can operate as constraint for aquaculture development;
- the definition of aquaculture legal frameworks does not include a comprehensive concept, which should consider not only the activity itself but should include typologies, production systems and other relevant criteria;
- cumbersome institutional settings, which call for simplification of both regulation; and administrative procedures and lack of coordination tools for solving overlapping competence of agencies involved in aquaculture planning;
- the aquaculture planning in some countries is limited to technical studies or recommendations; aquaculture site selection is generally focused on administrative criteria or environmental criteria; social and economic studies are not normally included as tools for aquaculture planning; integrated coastal zone management its limited to regional or local lack of common criteria and standards (monitoring and EIA);
- lack of stakeholders participation mechanisms which ensure proactive input and accountability of the actors involved. An inverse relationship between participatory processes and efficiency in terms of time consumption and resources that need to be solved and has to be registered;
- the implementation of specific regulations for aquaculture is essential to promote and facilitate the aquaculture development itself;
- the regulatory framework should take into consideration also the aquaculture related laws, including land, water and environmental legislation; the legislative framework should also include all the conditions for its practice as well as guarantees of the rights and obligations of aquaculture licenses holders;
- the coordination should be developed among the agencies involved in the aquaculture planning; instruments must be prepared to coordinate administrative procedures for the granting of the various authorizations; the creation of simple window or one stop shops should be promoted, to centralize license-granting procedures;
- the improvement of the governance should be pursued by including the aquaculture in the strategic policy; ensuring the stakeholders a proactive participation in the decision making process and stakeholders accountability; and the utilization of indicators should be promoted to assess the impact of aquaculture planning on the activity (production, value, employment); the main steps for the inclusion of aquaculture activities on the coastal zone management should be identified;
- the building of the national capacity at institutions level for the monitoring activities, for the legal issues and GIS application regarding the site selection and site monitoring should be improved through the implementation of cooperative trainings ;

- take stock of the positive experience within Mediterranean countries on the marine aquaculture planning and integration of the marine aquaculture into the coastal zone planning; Preparation of detailed guidelines for development and establishment of aquaculture coastal planning procedures;
- Identification of reliable indicators related to the governance dimension of sustainable aquaculture to evaluate the impact of planning aquaculture, including indicators to measure results from policies and plan in the medium and short term.

The following main activities should be considered for the Workplan for the WGSC and for the second year of SHoCMed (2010-2011)

- *Glossary/* Preparation of a glossary on the different terms used for sitting and carrying capacity for aquaculture activities. This glossary should include, among other, aspects related to the legal issues and to the monitoring of marine aquaculture.
- *Environmental Quality Standards (EQS)/* Preparation of a technical review on the EQS for Mediterranean aquaculture on the basis of the main environmental parameters identified by the WGSC and on the main physical parameters (current, depth, distance from the coastline, ecc). The EQS should be indicated in relation to the size and allocation of the aquaculture activities. Furthermore a panel of experts will be established for determining the values of the EQS (Delphi or other method will be applied). Advantages will be also taken from case studies or research activities carried out in the Mediterranean.
- *Preparation of a harmonised technical protocol for monitoring marine aquaculture activities;* Definition of an agreed protocol and procedures for monitoring the aquaculture activities based on the parameters identified. The protocol will take into consideration the ongoing rules and procedures applied at different level in the Mediterranean countries.
- *Review on the Allocated Zones for Aquaculture (AZA) activities and integration of aquaculture into coastal zone management and guidelines (legal aspects; methodologies; and procedures)* Preparation of a review on the existing experience in the Mediterranean concerning the Allocated zones for Aquaculture activities as well as on the existing experiences on the integration of aquaculture activities at the different level of application, including the use of GIS tool, The review will be based on available ground information and guidelines
- *Update the information on legal aspects on siting and carrying capacity* collected by ShoCMed during the first year of activities. Particular attention will be given to the gaps on reporting and communication of monitoring programme and on the legal procedures implemented for improving the governance and the participation of the different stakeholders.
- *Improvement of the SHoCMed data bank* hosted in the SIPAM website. The ShoCMed data bank, includes meta data information on the available or published environmental data referred to the interaction between aquaculture and environment will be finalised. Scientific cooperation should be established with national research institutions in order to improve/update the data contents and data utilisation.
- *Meeting on the Allocated Zones for Aquaculture activities and integration of aquaculture into coastal zone management.* The meeting aims at identifying the main aspects and steps to be followed and guidelines to be created for the integration of aquaculture activities into coastal zone planning.

35. The above activities will be carried out on the basis of the budget availability. A detailed workplan of the second year of ShoCMed in support to the WGSC will be prepared also taking into consideration the availability of the institutions involved. During the meeting the GFCM Secretariat underlined the importance that a great involvement of research institutions, and in general of institutions, is sought and should be granted for the achievement of the expected results.

36. Participants highlighted the presence of numerous initiatives and ongoing research activities in the Mediterranean focused on issues and priorities identified by the WGSC and the programme of ShocMed. It was commented that the availability of the results of such activities would represent an added value for the WGSC. The results of these activities can be presented as scientific/technical contributions to the WGSC activities and although these activities are beyond the actual functioning of the CAQ Working Groups, they could be an additional contribute to the improvement of the results the Working Group on Siting and Carrying Capacity in terms of advise for the Mediterranean sustainable aquaculture development.

AGENDA

Opening and arrangements of the meeting

Adoption of the Agenda

Presentation of Working Group on Siting and Carrying Capacity and SHoCMed² Project

Interaction between Aquaculture and the Environment in the Mediterranean Sea.

Review of exiting procedures and guidelines for aquaculture site selection in the Mediterranean region.

Conclusion and Recommendations

Other matters

² Project SHoCMed. Developing siting and carrying capacity guidelines for Mediterranean aquaculture within aquaculture appropriate areas is operative since October 2008. The project is funded with the contribution of European Union (EU) DG Mare.

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