



MedSudMed

GCP/RER/010/ITA

Report of the Fifth Meeting of the
Coordination Committee

Rome, Italy 9–10 November 2006

The conclusions and recommendations given in this and in other documents in the *Assessment and Monitoring of the Fishery Resources and Ecosystems in the Straits of Sicily* Project series are those considered appropriate at the time of preparation. They may be modified in the light of further knowledge gained in subsequent stages of the Project. The designations employed and the presentation of material in this publication do not imply the expression of any opinion on the part of FAO or MiPAAF concerning the legal status of any country, territory, city or area, or concerning the determination of its frontiers or boundaries.

Preface

The Regional Project “Assessment and Monitoring of the Fishery Resources and the Ecosystems in the Straits of Sicily” (MedSudMed) is executed by the Food and Agriculture Organization of the United Nations (FAO) and funded by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF).

MedSudMed promotes scientific cooperation between research institutions of the four participating countries (Republics of Italy, Libya, Malta and Tunisia), for the continuous and dynamic assessment and monitoring of the status of the fisheries resources and the ecosystems in this area of the Mediterranean.

Research activities and training are supported to increase and use knowledge on fisheries ecology and ecosystems, and to create a regional network of expertise. Particular attention is given to the technical coordination of the research activities between the countries, which should contribute to the implementation of the Ecosystem Approach to Fisheries. Consideration is also given to the development of an appropriate tool for the management and processing of data related to fisheries and their ecosystems.

MedSudMed Project
FAO-FIMF, Room C669
viale delle Terme di Caracalla
00153 Rome, Italy

Tel: +39 0657053885
Fax: +39 0657053020
E-mail: faomedsudmed@faomedsudmed.org
URL: <http://www.faomedsudmed.org>

GCP/RER/010/ITA Publications

The MedSudMed Project publications are issued as a series of Technical Documents (GCP/RER/010/ITA/MSM-TD-00) related to meetings, missions and research organized by or conducted within the framework of the Project.

Comments on this document would be welcomed and should be sent to the Project headquarters:

MedSudMed Project
FAO-FIMF, Room C669
viale delle Terme di Caracalla
00153 Rome, Italy
faomedsudmed@faomedsudmed.org

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Preparation of this document

This document is the final version of the report of the Fifth Meeting of the Coordination Committee, organized by the FAO-MedSudMed Project (*Assessment and Monitoring of the Fishery Resources and the Ecosystems in the Straits of Sicily*), in Rome, Italy 9–10 November 2006.

Acknowledgements

The Ministry of Agriculture Food and Forestry Policies, particularly the Minister, Paolo De Castro, as well as the Chief of Units of the General Directorate of Maritime Fisheries and Aquaculture, Dr Riccardo Rigillo, who provided kind hospitality and assistance in the organization of the meeting, are gratefully acknowledged.

MedSudMed.

Report of the Fifth Meeting of the Coordination Committee, Rome, Italy, 9–10 November 2006.

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ABSTRACT

The Fifth Meeting of the Coordination Committee was attended by representatives of the Donor (Italy), delegations from the countries participating in the Project (Italy, the Libyan Arab Jamahiriya, Malta and Tunisia), the Chief of the FAO Marine Resources Service (FIRM), the Chair of the Scientific Advisory Committee (SAC), the Executive Secretary and the Deputy Executive Secretary of the General Fisheries Commission for the Mediterranean (GFCM), a representative from the European Commission (EC) as well as the staff of the FAO MedSudMed Project. A brief reminder was made on the Project objectives and activities and a presentation of the activities implemented for the four MedSudMed components during the inter-session period was made. The proposed work plan for the next period was discussed and approved. It focuses on the same priorities of standardizing approaches, increasing scientific knowledge on fishery resources and ecosystems, strengthening national expertise and regional cooperation. A positive appraisal of the MedSudMed Project for supporting all the participating countries in the assessment and monitoring of the fisheries resources and for the good job carried out since the beginning was given. The belief that continuing the Project can only bring success and be beneficial for each of the participating countries was affirmed.

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Report of the Fifth Meeting of the MedSudMed Coordination Committee

Rome, Italy 9-10 November 2006

Opening of the meeting and nomination of the Chairman (Agenda Item n.1)

1. The Fifth Meeting of the Coordination Committee of the FAO MedSudMed Regional Project, “Assessment and Monitoring of the Fishery Resources and Ecosystems in the Straits of Sicily”, was held in Rome, Italy on 9 and 10 November 2006, hosted by the Italian Ministry of Agriculture, Food and Forestry Policies.
2. The meeting was attended by representatives of the Donor (Italy), delegations from the countries participating in the Project (Italy, the Libyan Arab Jamahiriya, Malta and Tunisia), the Chief of the FAO Marine Resources Service (FIRM), the Chair of the Scientific Advisory Committee (SAC), the Executive Secretary and the Deputy Executive Secretary of the General Fisheries Commission for the Mediterranean (GFCM), a representative from the European Commission (EC) as well as the staff of the FAO MedSudMed Project.
3. The meeting was opened by the National Focal Point of the Donor Country, Stefano Cataudella, who welcomed the Coordination Committee Meeting participants. He thanked the MedSudMed member countries for the strong support given to the Project activities and FAO for the work achieved in the implementation of and support to the Regional Projects.
4. The Italian Minister of Agriculture, Food and Forestry Policies, His Excellency Paolo De Castro, welcomed the meeting delegates to Rome. He expressed his pleasure and honour at hosting the meeting and his great satisfaction in view of the good work and results obtained by MedSudMed so far. He declared his conviction that for the correct management of the shared fishery biological resources of the Mediterranean it is necessary to reinforce cooperation and the exchange of knowledge between the nations concerned, this is the reason for believing that Italy should continue supporting MedSudMed and the other FAO Regional Projects, AdriaMed and EastMed. Moreover he reiterated his commitment to building up common regulatory measures for fisheries in the Mediterranean, benefiting from the common base created by the work of the Regional Projects. He emphasized the importance of taking into account the social dimension in fisheries management and recalled that the beneficiaries of the scientific cooperation are also the fish workers, as their livelihood depends on the status of the resources; ultimately, the sustainability of fisheries and the protection of the environment in general are crucial for all citizens. He concluded by indicating the support given to FAO as a tangible sign of Italy’s dedication to a regional policy concerning fisheries, that has at its heart effective cooperation between populations and confirmed the mandate of the Italian Government in continuing to finance the execution of the MedSudMed Project. He wished the Committee every success for its work.
5. The Chief of FIRM, Mr Csirke, on behalf of the Director-General of FAO and of the Assistant Director-General of the FAO Fisheries Department, welcomed the participants to this Fifth Coordination Committee Meeting of the FAO Regional Project MedSudMed. He recalled to the participants that the activities of MedSudMed

were conceived to increase scientific knowledge on fisheries and their ecosystems in a very important and to some extent unique area of the Mediterranean Sea. The aim of MedSudMed is also to contribute to the implementation of the Ecosystem Approach to Fisheries through research activities conducted with the close cooperation of the four participating countries. The increased importance of the FAO regional projects and the key role of the Scientific Advisory Committee (SAC) of the GFCM in improving scientific advice for fisheries management in the area were acknowledged at the highest political level by the Third Ministerial Conference on Sustainable Development of Fisheries in the Mediterranean, held in Venice in November 2003.

6. It was noted that, thanks to the Project activities, for the first time in this area, work has been carried out on the standardisation of methodologies in the fisheries research activities. A total of 17 workshops have been held, as well as 11 training courses. Research progress has also been made on key issues for further application of the Ecosystem Approach to Fisheries. For the first time, surveys were organized with mixed teams of Italian, Libyan, Maltese and Tunisian researchers working jointly on board the same research vessels. The MedSudMed also effectively cooperated with the GFCM and its Committees, and other FAO regional Projects.
7. The Coordination Committee was requested to examine the activities carried out so far by the Project, identify and discuss future needs and provide guidelines for future Project activities. Furthermore, Chief of FIRM stressed the opportunity that the meeting would provide, to reflect on the achievements of the scientific cooperation established. The Chief of FIRM paid special tribute to the Republic of Malta, the Libyan Arab Jamahiriya, the Republic of Tunisia and the Republic of Italy, all members of the MedSudMed project and to their Scientific Institutions and Fisheries Directorates for their full involvement in the project activities and for the cooperation established. Special gratitude was expressed to the Government of Italy for financing the MedSudMed project, as well as the substantive financial support provided to the other FAO regional Project, AdriaMed, and the soon-to-be-established EastMed Project
8. The Focal Point of the Donor highlighted that the cooperation established and the positive scientific results obtained in the MedSudMed area have been possible thanks to the clearly participatory approach successfully adopted by the Project, reflecting the different needs expressed within the region. For these achievements he thanked the FAO staff, the GFCM secretariat, the different research fisheries institutions and Fisheries Directorates in the Project participating countries. The success of the Project in catalysing the different scientific requirements in a regional framework of cooperation, was possible thanks in part to the scientific capital that existed before its implementation and from which the project benefited. He stated that the status and the future of the marine fisheries resources and the role of the fisheries research are now at the centre of discussion and there are many critical points, in particular where the exploitation of shared marine fisheries resources is concerned. The quality of data collection in fisheries research is essential and the scientific cooperation as established by MedSudMed must be considered a substantial advantage for marine policy. Cooperation may sometimes be made difficult because of the different languages and terminology used in the coastal countries. In this respect the work done by the Project in the standardisation of common methodologies and scientific

language is an important aspect, especially considering that those same national scientists give advice to the fisheries management bodies.

9. The Executive Secretary of the GFCM expressed full satisfaction for the activities carried out by the MedSudMed Project and reminded the participants that during the most recent meeting of the GFCM-SAC the role of the Regional Projects in supporting the activities of the SAC in terms of scientific inputs was underlined. In the case of MedSudMed the contribution in introducing the application of the EAF in the Mediterranean area was mentioned. Thanks were also given to FIRM for the good management of the FAO Regional Projects and for the support provided to the GFCM.
10. The representative of the European Commission thanked the MedSudMed Project for the kind invitation to participate in the fifth Coordination Committee meeting of the Project and recalled to the meeting delegates the direct role played by the European Commission in some Regional Projects in the Mediterranean. Appreciation was expressed on the work carried out by MedSudMed. He underlined the strong interest of the EC in the cooperative context established by the GFCM among all the countries of the Mediterranean area in particular where scientific research is concerned.
11. In consideration of the results achieved by the Project, the representative of Italy reminded the participants of the efforts made by the Italian administration in supporting the FAO Regional Projects to facilitate the processes of cooperation, as well as the relevance of the contribution of these projects to the GFCM Sub-Committees. Even though MedSudMed is not the oldest Project, the results obtained so far are very interesting in terms of scientific contributions that are new for the area. For these reasons and in relation to the work carried out recently, he thanked the research institutions and countries for the support given; Libya for the effort invested in the cooperation established during the oceanographic survey that was conducted; Malta for the contribution in the Pilot Study and Tunisia for the scientific input provided. He recalled also that the MedSudMed Project can be considered as one of the few Projects that delivered on many issues referred to sustainable fisheries, as indicated during the World Summit on Sustainable Development held in Johannesburg.
12. The Maltese representative thanked the MedSudMed Project for the invitation to the fifth Coordination Committee. He highlighted the fact that, in Malta the activities implemented by the Project are considered as a success. Appreciation was expressed to Italy, FAO and the neighboring countries for the cooperation and participation in the Project. The Meeting delegates were reminded that the Project represents a good opportunity for Malta, in particular for research at sea and organization of training courses for the scientific staff. Moreover, the chance of working with the neighboring countries in the framework of the Project was acknowledged. Gratitude towards Italy was expressed for providing funds to the Project, with a view to extending this collaboration. As Head of the Fisheries Department, he guaranteed his full support to the activities to be carried out.
13. The Libyan representative expressed his pleasure to be at the Italian Ministry for Agriculture, Food and Forestry Policies attending the meeting under the framework of

the MedSudMed Project, cooperating with the other countries participating in the Project, examining the past activities and discussing the future ones. Thanks were given to the Italian Government for funding the Project, FAO for the wise management, and the Project staff for the good job carried out since the beginning. He affirmed that Libya has tried since the outset to participate in the Project activities according to its possibilities and confirmed a stronger collaboration in future in to achieve the goals of the Project. A document summarizing the work carried out by MBRC within MedSudMed and providing suggestion for the future was distributed among the participants. The hope for an extension of the Project was expressed in order to continue cooperating for the future in this sensitive zone of the Mediterranean Sea.

14. The Tunisian representative gave a highly positive appraisal of the MedSudMed Project for supporting all the participating countries in the assessment and monitoring of the fisheries resources and for the good job carried out since the start. He recalled the importance of the Project in harmonizing the different methodologies and goals and reminded the Meeting that a lot of work still needs to be carried out in the future for the stock assessment, the marine protected areas and the selectivity of fishing gears as recommended during the last GFCM SAC meeting. He thanked the Government of Italy for funding the Project and the Project Coordinator and the MedSudMed staff for work carried out, in particular regarding the harmonization of scientific methodologies. He expressed the hope that work can continue along the same line in the next future.
15. The FAO MedSudMed Project Coordinator, Mr. Fabio Massa thanked the Italian Ministry for Agriculture Food and Forestry Policies for hosting the meeting and all the participants for their attendance. Thanks were given also to the MedSudMed participating countries and research institutes for the support given to the project in establishing scientific cooperation. He gave additional information on the organisation of the meeting and the content of the agenda and of the documents put at disposal in the folder.

Adoption of the Agenda (Agenda Item n. 2)

16. Mr Riccardo Rigillo was proposed as Chair of the meeting, the Coordination Committee approved. The Chair brought the attention of the Committee to the agenda that was adopted without changes.

Report on the Project's Progress (Agenda Item n.3)

17. The Project Fishery Monitoring Expert presented the activities carried out by the Project during the last period following the outline of the document on the Project's Progress. A brief reminder was made on the Project objectives, activities and achievements. During the inter-committee period, activities were implemented for the four MedSudMed components on i) Spatial distribution of demersal resources and the influence of environmental and fishery characteristics ii) Small Pelagic Fish: Stock Identification and Oceanographic Processes Influencing their Abundance and Distribution; iii) Marine Protected Areas (MPAs) and fisheries management and iv)

Fishery and Ecosystem Information System (FEIS). The objectives and past achievements of each component were summarized.

18. It was recalled that, so far, the Project component on demersal resources followed the work plan that was discussed and agreed upon during the related Expert Consultation. To date, the Project has focused on activities dealing with the standardization of data collection and processing methodologies for the description of the spatial distribution of two species of demersal fisheries resources in the Project area (*Merluccius merluccius* and *Mullus barbatus*). A total of five workshops were held to discuss standardization issues and five training courses were organized on different topics. The data processing was undertaken, aiming at identifying the main nursery areas and locating the areas of major concentration of mature females. Finally, the main results of the pilot study on “Demersal resources and fisheries around the Maltese Islands: multidisciplinary approach in a data-limited situation” were outlined. The meeting was informed about the study conducted in the Gulf of Gabés (GSA 14) by the Institut des Sciences et Technologies de la Mer (INSTM) on identification of marine protected areas on the basis of a multidisciplinary data analysis. The relation with the two studies on the Marine Protected Areas component was recalled.
19. The Project component on small pelagic fish also followed the work plan that was agreed upon during the related Expert Consultation. A total of four workshops/meetings were held to discuss matters dealing with the harmonisation of sampling protocols or data processing methodology. Two training courses were organised and on-the-job trainings occurred during 9 cooperative acoustic or ichthyoplankton surveys. Data processing focused on *Engraulis encrasicolus*, producing results in part of the Project area on the spatial distribution of the adult biomass (GSA 15 and 16), spatial distribution and abundance of eggs and larvae (GSA 13, 15, 16). Analysis of environmental parameters was carried out at regional level by running a numerical model which provides regional maps of temperature, salinity, current direction and velocity at different depths. The meeting was informed that scientists of the area are currently studying the correlation between biological features that were described for eggs and larvae distribution and environmental parameters.
20. The meeting was informed that in 2006, a cooperative ichthyoplankton survey was conducted on board the R/V Urania, covering GSAs 15 (Malta Island), 16 (South of Sicily) and western part of 21 (Libya). In parallel, the INSTM conducted an ichthyoplankton survey in GSA 14 (Gulf of Gabés) on board R/V Hannibal. The joint processing of the data collected will allow producing scientific information on ichthyoplankton and environment at the largest scale possible since the beginning of the Project.
21. An overview of the FEIS was given. The Meeting was reminded that the FEIS is the information component of the MedSudMed Project. The aim of this system is to act as an analytical support tool to study marine ecosystems, natural phenomena and fisheries, by providing a framework within which the Project participants can share information and data. It also enables the creation of applications to support the management, analysis and representation of data relative to fishery resources and their environment. The system includes data collected during surveys at sea, as well as accessory data (maps, graphs, images, tables, documents, texts ...) that users may

wish to share. A global query is available for a quick search of data and information. Data collected on the field are organized according to the type of survey (trawl, acoustic, ichthyoplankton, environment) and can be easily exported on a Geographical Information System (GIS) or in Excel files. Data management options allow inputting data, manually or automatically through import/export tools (shuttles). FEIS is made up of two structures: national and regional. The national version is used for the input and management of single institutions' data and includes modules corresponding to different topics (fishery resources, environment, fishery statistics). The regional version is constituted by a corporate database which contains public data and basic information, maps, documents and other relevant material that the participating Institutes wish to share. The version 1.1 of the FEIS was distributed among the participants.

22. Other activities conducted by the Project include the analysis of fisheries sector that was initiated on the basis of FAO statistics, with the objective of highlighting the main relevant aspects and considerations of the fisheries landing/aquaculture patterns and trends.
23. The meeting was informed that during the inter-committee period, much effort was made by the Project for the organization of training courses, as requested by the participating institutes. A total of five courses were organized on different topics (collection and conservation of ichthyoplankton samples, macroscopic identification of maturity stages of fisheries resources, age determination of Cephalopods and crustaceans, trawl survey samples processing, technical operators on marine biotoxins) involving over 50 participants.
24. The reinforcement of regional cooperation was encouraged by the Project through participation of regional experts in meetings and workshops organized by the GFCM and by other regional Projects. Four meetings organized by the GFCM were attended by scientists supported by MedSudMed who presented technical communications at three of them; the AdriaMed Working Group on small pelagic fisheries resources was also attended.
25. The Chief of FIRM expressed his satisfaction on the high profile research activities that were carried out by MedSudMed and congratulated the staff of both the participating research institutes and of the Project. Seeing the work and taking into account the international context on fisheries, suggestion was made to make additional efforts to publish the results obtained and present them in international meetings and conferences.
26. The executive secretary of GFCM acknowledged the quality of the results obtained by the Project. He recalled that most of the outputs were presented during SAC Sub-Committee meetings and were considered as relevant inputs for the discussions in particular for what concern the Sub-Committee on Marine Environment and Ecosystems. He proposed that some relevant documents of the MedSudMed Project also be published under the auspices of the GFCM.
27. The Committee expressed much appreciation for the quantity of work carried out by the Project and the quality of documents prepared.

28. The internal technical review that was carried out was presented to the meeting. The internal review was requested during the fourth meeting of the Coordination Committee and had the main purpose of providing the Donor, the participating Countries and FAO with a synthesis of the technical activities carried out. The review aimed also at assessing the relevance, effectiveness and progress of the Project, as well as giving recommendations on the further steps necessary to consolidate progress and ensure the successful completion of the Project's activities and the fulfilment of its objectives.
29. The main results of the internal review were presented by the consultant. The review summarizes the activities that were carried out within the four Project components, lists the number of workshops, training courses, publications that were produced. Key achievements of the Project were identified in the huge effort of standardization of methodologies and protocols, a fundamental prerequisite for joint work in the area. The document also highlights the important achievements of the Project in terms of regional cooperation, underlining that one of the results of the Project is that a network of regional experts has effectively been created. This is particularly significant given that at beginning of the Project little or no consolidated collaboration existed among scientists of the participating countries. Nevertheless, this collaboration still needs to be supported and reinforced.
30. The review also draws attention to the fact that some aspects of the Project components still need to be completed or extended to other parts of the Project area; among them, several issues concerning the scientific knowledge of fish stocks, the replication of the pilot study conducted to other areas of the region, the practical application of regional database for data processing. Moreover, it was stressed that the component on Marine Protected Areas for fisheries management is of great interest, and should be developed with a critical review of the methodological approach. According to the review, a period of extension would therefore be highly advisable for the full development and completion of the activities, and extra human resources would help towards optimum fulfilment of the objectives. Some organizational/logistic aspects should be considered priority for a better development of the activities.
31. The Committee agreed that the internal review is precise and provides a clear overview of what has been carried out by the Project. The document gives account of the huge amount of data and information collected by the Project. Should there be a second phase of MedSudMed, it was suggested to use the document as a basis of the extension of the Project.
32. The executive secretary of GFCM described the MedSudMed Project as complementary to the other Regional Projects. In view of the forthcoming workshop on Marine Protected Areas, it was advocated to take advantage of the scientific outputs produced by the Project. The Committee agreed that the information should be shared better and that the communication of the Project should be improved.
33. The representative of Italy informed the meeting that for a better logistic situation, also considering the cost efficiency aspects, the HQs of the Project may be moved to Rome starting from the next year, provided that the Committee agrees and that FAO is willing to host the Project.

Project Future implementation (Agenda Item 4)

34. The working paper CC05/03 referring to the activities proposed for the next period was introduced. The proposed work plan for the next year will focus on the same priorities of standardising approaches, increasing scientific knowledge on fishery resources and ecosystems, strengthening national expertise and regional cooperation.
35. The list of activities concerning the four components of the Project was presented to the Committee by the Project Coordinator. It was reiterated that the Project would focus on standardisation of surveys protocols, data collection (support to trawl, acoustic and ichthyoplankton surveys), data processing and writing of technical contributions. As in the previous years, training will also be considered on the basis of the work plan, but also on the basis of specific requests that institutes may have. Follow-up to training courses that were organised in the past will also be arranged when the case arises. Regional cooperation will be consolidated, in particular with the GFCM SAC. The Committee was requested to give its appraisal on the list of activities that were discussed during the last SAC meeting, as proposals of inputs for the 2007 work plan that could be provided by the Regional Projects. The work plan took into consideration also the indication emerged from the internal technical review.
36. The representative from Libya expressed his agreement with the work plan that was proposed and specified that he thinks along the same lines. He recalled the document produced by the Marine Biology Research Centre (MBRC) distributed to the meeting and commented on the suggestions for future activities included in the MBRC document. He referred to the programme on Marine Protected Areas (in particular issues on *Posidonia*, sponges and chondrichthyes), as well as the possible upgrading of the research institute in the framework of national capacity building as indicated in the work plan of the Project. Suggestions of the MBRC include: i) conduction of further field surveys related to fisheries stocks; ii) up-grading of the capacity building; iii) assistance for the purchase of equipment; iv) Technical assistance through expertise on essential areas related to fisheries and fishing methodology; v) development of the infrastructure of the MBRC so as to contribute effectively in the conservation of the natural living resources. At regional level, the Libyan representative advised to consolidate common activities on fisheries research, stating that this would allow implementing responsible fisheries management in the Project area.
37. The representative of Tunisia also agreed with the work plan regarding capacity building and research activities proposed for the next year. Suggestion was made to integrate activities on stock units, in particular *Nephrops norvegicus*, *Parapenaeus longirostris* and *Octopus vulgaris* populations. It would be relevant to enhance the knowledge on the genetic structure of these species' populations at regional level, in order to update the information on shared stocks. Another activity proposed by the representative of Tunisia regards the study of correlations between spatial distribution of small pelagic fish biomass and environmental parameters. Finally, it was suggested to carry out studies on fishing techniques dealing with selectivity and the development of selective gears.

38. The representative from Malta thanked the Project staff for clearly outlining projects for the future. He reiterated a proposal that was made during the last meeting and that arises from the lack of information on the sea-bed characteristics highlighted during the pilot study. An acoustic survey aiming at mapping the bottom characteristics would fill this information gap. The survey should be conducted with a vessel equipped with a side scan sonar (e.g. R/V Urania). Alternatively, *ad hoc* equipment could be provided with the support of the Project. The side scan sonar could also be used to prospect areas where no information is available, in particular to map the trawlable areas. The representative of Malta recalled that the first surveys that were carried out on small pelagic fish in Malta were implemented under the framework of MedSudMed and that Malta is very interested in going forward and detailing the results obtained so far. It was reminded that acoustic surveys may become part of the European Commission data collection program. Should data collection within acoustic surveys become compulsory, training would be requested for Maltese scientists to enhance their skills and be able to conduct their own surveys and process their data. The representative of Malta also suggested restoring the cooperation with IUCN who participated in the MedSudMed Expert Consultation on MPAs and fisheries management, in order to clarify the objectives and methodologies of this Project component. Finally, the Maltese representative suggested that training on the FEIS is carried out in each country. He informed the meeting that Malta is currently developing an integrated Information System and wishes to link it to the FEIS.
39. The Director of CNR-IAMC section of Mazara del Vallo thanked the Project staff for the clear presentations on the Project progress and the proposed activities for the future. He recalled the importance of the MedSudMed area from the scientific, environmental and socio-economic point of views and acknowledged the Ministry's decision of extending the Project and thus offering the possibility of pursuing the Project activities and exploiting the results obtained so far. He expressed his agreement with the representatives from the participating countries on the activities proposed for the future. In addition, he recalled the importance of the fish Target Strength for the reliability of acoustic biomass estimation and hoped that an experiment will be carried out in the near future. He informed the meeting that additional vessel time was requested for 2007, in order to continue carrying out the surveys at sea; these are important, not only for the regional cooperation, but also because they are interdisciplinary. Moreover, he suggested establishing contact with other institutions for a wider scientific cooperation, in view of building a common marine resource management system. Finally, he suggested consolidating the cooperation with the other FAO Regional Projects and exchanging scientific information.
40. The Deputy Executive Secretary of the GFCM thanked the Project for the presentations made. He hoped that the Project continues contributing to the activities of the SAC, in particular by participating at the forthcoming workshop on MPAs (to be held next year). He also hoped that the outcomes of the pilot study could be made available for the work of the SAC.
41. The Project Coordinator acknowledged the proposals made and informed that the Project would request the support of the research institutions and the Fisheries Directorates of the different countries for the full participation of the regional experts in the implementation of the ongoing and future activities and for the access to

information. In this perspective, he considered that the scientific support provided by the CNR-IAMC of Mazara del Vallo, MCFS of Malta, INSTM of Tunisia and MBRC of Libya must be further strengthened. Training courses will be organized as requested and the suggestion was made that technical cooperation with other Regional Projects be consolidated through activities on small pelagic fish with the AdriaMed Project. Finally, every effort will be made for a better development of the activities and to give international visibility to the results of the Project. In terms of logistic efficiency, cooperation with other Projects will be sought for the sharing of knowledge and expertise and in terms of publication of international papers.

42. There was a general appreciation on the work plan presented and the Committee agreed on the program of activities scheduled for the coming period, as outlined by the Project Coordinator (CC5/03 refers). In particular, the Committee, on the basis of the discussion that took place made the following suggestions: a) continue standardization work, in particular on processing of data and synthesis of information available on biological indicators and Essential Fish Habitat b) coordinate work conducted on board the research vessels; c) support data processing to continue producing scientific information and progressively fill gaps d) publication of the FEIS on a web-based platform e) carry out training programs as requested by the institutes; f) support national capacity building; g) consolidate the component on MPA;
43. Furthermore, in the next period, logistic aspects should be considered with particular reference to the moving of the Project headquarters to Rome. In order to allow a smooth implementation of the Project activities and avoid interruptions in the program of work that was agreed upon, it was approved that the necessary arrangements should be made to relocate the Project headquarters by February 2007.
44. The Project Coordinator informed the Committee that, on the basis of the discussions on the planned activities, the Committees considerations will be synthesised in a table detailing the content, date and venue of each activity and will be circulated among the participating institutions in a short time.

Other matters (Agenda item n.5)

45. The next Coordination Committee meeting will be held in October-November 2007. The representative of Tunisia kindly offered to host the meeting.
46. The report on the pilot study conducted in GSA 15 should be finalized as soon as possible. It was suggested to have a working session in the next days following the Coordination Committee to finalize the document before it is published.
47. The representative of Libya wished to thank again the Ministry of Agriculture for hosting the meeting, the Project staff for the work and the other countries for their collaboration and input in the Project activities. He underlined that the Project has produced enough material that could be exploited during the extension that was granted.
48. The report was adopted on Friday 10 November 2006.

Contribution from the Libyan delegation

The Libyan delegation wishes, first of all, to express appreciation and gratitude to the Italian Government for the financial support it has kindly extended to the MedSudMed project. Thanks are also due to FAO who hosted and successfully managed the Project. Special thanks are extended to the Project Director and staff members and all the participating countries for their cooperative spirit, enthusiasm which they all have demonstrated during the first phase of the Project. The phase which we consider laid the basic pillar for a foundation of fruitful future cooperation among the research workers and their Institutes.

We very much appreciate the trust and confidence that have been cultivated amongst the member states through their effective participation in the project's various scientific activities. Such confidence has helped extend cooperation and exchange of knowledge and expertise, which together contribute to narrow and even bridge technical gaps that existed previously between research institutes in member states.

Libya has participated in some 39 of the Project's various activities carried out during the first phase. Scientists and researchers from our Marine Biology Research Centre (MBRC) have taken part in several workshops, meetings, training programs and marine surveys, all of which have had a great and positive effect on our national capacity building program.

The project effectively supported the Libyan side and enabled our scientists to attend and contribute to most of the Project activities, as well as to the GFCM, the scientific Advisory Committee (SAC) and its sub-committees meetings. The Project successfully organized and executed training courses at our MBRC to up-grade the efficiency of the researchers. Technical and scientific advice and consultations were also delivered through the Project to our MBRC to evaluate the status of "R/V Nour" with a possibility of using it in proposed marine acoustic surveys.

It is worth noting that due to unexpected circumstances such as those related to difficulties in obtaining entry visas, it was not possible to attend or participate sometimes in some important Project functions and this is a matter that deserves some attention to avoid future interruptions.

We have no doubt that between the start of the Project and the end of its first stage the technical and knowledge differences amongst research institutes of the member state in certain fields has been minimized, this would encourage further plans for future Project phases. Although our participation in the Project's first phase was a modest one we, however, look forward to more effective and serious participation in a future Project phases, in which we envisage the implementation of the following activities:

1. Carry out further field surveys related to fisheries stocks.
2. Up-grade the capacity building.
3. Assistance in providing certain research apparatuses and equipments.
4. Technical assistance through providing expertise in essential areas related to fisheries and fishing methodology.
5. Development of the infrastructure in our scientific research institutes so as to contribute effectively to the conservation of the area's natural living resources.

Last, but not least, we once again thank the supporting state, FAO and Project administration for their cooperation, concern and understanding. Hoping that there will be further chance to cooperate intensively together for the benefit of our important zone in the Mediterranean.

List of participants

ITALY

Paolo De Castro
Minister
Ministry of Agriculture, Food and Forestry
Policies
Via XX Settembre, 20
00187 Roma
Tel. 0039 06 46651
Telefax: 0039 06 4742314

Francesco Saverio Abate
General Director
General Directorate of Maritime
Fisheries and Aquaculture
Ministry of Agriculture, Food and Forestry
Policies
Via dell'Arte, 16
00144 Roma
Tel. 0039 06 596 48181/2
Fax: 0039 06 590 84176/84818
Email: f.abate@politicheagricole.it

Riccardo Rigillo
Chief of Units
General Directorate of Maritime
Fisheries and Aquaculture
Ministry of Agriculture, Food and Forestry
Policies
Viale Dell'Arte, 16
00144 Rome
Tel: 0039 06 59084746
Fax: 0039 06 59084818
Email: r.rigillo@politicheagricole.it

Stefano Cataudella
Professor
University of Rome "Tor Vergata"
Via Passo Lombardo 403
00100 Rome
Tel: 0039 06 72594391/2
Fax: 0039 06 2026189
Email: cataudel@uniroma2.it

Rosa Caggiano (Ms)
International Relations Expert
General Directorate of Maritime
Fisheries and Aquaculture
Ministry of Agriculture, Food and Forestry
Policies
Viale Dell'Arte, 16
00144 Rome
Tel: 0039 06 59084493
Fax: 0039 06 59084818
Email: r.caggiano@politicheagricole.it

LIBYA

Noureddin Essarbout
Director
Marine Biology Research Centre
P.O. Box 30830, Tajura
Tel: 00218 21 3690001 or 3
Fax: 00218 21 3690002
Email: benmosa@hotmail.com

Salem Wniss Zgozi
Researcher
Marine Biology Research Centre
P.O. Box 30830, Tajura
Tel: 00218 21 3690001 or 3
Fax: 00218 21 3690002
Email: salem_zgozi@yahoo.com

MALTA

Simon Sammut
General Director
General Directorate for
Veterinary Affairs and Fisheries
Ministry for Rural Affairs and Environment
Albert Town, Marsa - CMR 02
Tel: 00356 21 225 363
Fax: 00356 21 238 105
Email: simon.sammut@gov.mt

Matthew Camilleri
Director
Malta Centre for Fisheries Sciences
Ministry for Rural Affairs and the
Environment
Fort San Lucjan
BBG 06 Marsaxlokk
Tel: 00356 650 933
Fax: 00356 659 380
Email: matthew.camilleri@gov.mt

TUNISIA

Ridha M'Rabet
Director
Institut National des Sciences et
Technologies de la Mer
28 Rue 2 mars 1934, 2025 Salammbô
Tel: 00216 71 730548
Fax: 00216 71 732622
Email: ridha.mrabet@instm.rnrt.tn

Othman Jarboui
Researcher
Institut National des Sciences et
Technologies de la Mer
BP 1035, 3018 Sfax
Tel: 00216 74 497117
Fax: 00216 74 497989
Email: othman.jarboui@instm.rnrt.tn

EU

Constantin Vamvakas
Advisor to the Director-General
Directorate General for Fisheries
and Maritime Affairs
European Commission
Rue Joseph II, 99
1040 Brussels, Belgium
Tel: +32 2 295.57.84
Fax: +32 2 295.19.40
Email: constantin.vamvakas@cec.eu.int

FAO

Jorge Csirke
Service Chief
FAO FIRM - Fishery Resources Division
Viale delle Terme di Caracalla
00100 Rome
Tel: 0039 06 57056506
Fax: 0039 06 57053020
Email: jorge.csirke@fao.org

Fabio Massa
Project Coordinator
AdriaMed and MedSudMed Project
FAO FIRM- Fishery Resources Division
Viale delle Terme di Caracalla
00100 Rome
Tel: 0039 06 570 53855
Fax: 0039 06 570 53020
Email: fabio.massa@fao.org

Tarûb Bahri (Ms)
Fishery Monitoring Expert
MedSudMed Project
FAO FIRM- Fishery Resources Division
Via Luigi Vaccara, 61
91026 Mazara del Vallo
Tel: 0039 0923 909 800
Fax: 0039 0923 672 068
Email: tarub.bahri@fao.org

Annalisa Alessi (Ms)
Administrative clerk
MedSudMed Project
FAO FIRM- Fishery Resources Division
Via L Vaccara, 61
91026 Mazara del Vallo
Tel: 0039 0923 909800
Fax: 0039 0923 672068
Email: annalisa.alessi@fao.org

Salvatore R. Coppola
Consultant Senior Advisor
Statistical and Information System
FAO FIRM- Fishery Resources Division
Viale delle Terme di Caracalla
00100 Rome
Tel: 00390657053034
Fax: 0039 0657053020
Email: rino.coppola@fao.org

Adriano Mariani
Consultant
MedSudMed Project
FAO FIRM- Fishery Resources Division
Via L Vaccara, 61
91026 Mazara del Vallo
Tel: 0039 0923 909800
Fax: 0039 0923 672068
Email: mariani.a@animar.it

GFCM SECRETARIAT

Alain Bonzon
Senior Fishery Liaison Officer
General Fisheries Commission for the
Mediterranean
Viale delle Terme di Caracalla, 00100 Rome
Tel: 0039 06 570 56441
Fax: 0039 06 570 56500
Email: alain.bonzon@fao.org

Abdellah Srour
Deputy Executive Secretary
General Fisheries Commission for the
Mediterranean
Via delle Terme di Caracalla,
00100 Rome
Tel.: +39 06 570 55730
Fax: +39 06 570 56500
Email: abdellah.srou@fao.org

Corrado Piccinetti
SAC Chairperson
Laboratory of Marine Biology and Fisheries
Viale Adriatico 1/N
60132 Fano (PS)
Tel: 0039 0721 802689
Fax: 0039 0721 801654
Email: cpiccinetti@mobilia.it

IAMC-CNR

Salvatore Mazzola
Director
IAMC – CNR
Via Vaccara, 61
91026 Mazara del Vallo
Tel.: +39 0923 948966
Fax: +39 0923 906634
Email : salvo.mazzola@irma.pa.cnr.it

Agenda

1. Opening of the meeting and nomination of the Chairman
2. Adoption of the Agenda
3. Report on the Project's progress
4. Project future implementation
5. Other matters

List of Documents

FAO-MedSudMed: CC5/01	Provisional agenda
FAO-MedSudMed: CC5/02	Report on Project's Progress (March 2006 -October 2006)
FAO-MedSudMed: CC5/03	Development of the Project's Programme
FAO-MedSudMed: CC5/Inf.01	List of Documents
FAO-MedSudMed: CC5/Inf.02	Provisional list of participants
FAO-MedSudMed: CC5/Inf.03	MedSudMed Internal technical review
FAO-MedSudMed: CC5/Inf.04	Fishery and Ecosystem Information System (FEIS) - Version 1.1. installation CD
FAO-MedSudMed: CC5/Inf.05	Report of the Fourth Meeting of the Coordination Committee GCP/RER/010/ITA/MSM-TD-11.
FAO-MedSudMed: CC5/Inf.06	Report of cooperative ichthyoplankton survey (12 – 24 August 2006, R/V Urania)
FAO-MedSudMed: CC5/Inf.07	Report of the training course for technical operators on marine biotoxins (17-21 September 2006, MBRC Tajura, Libya)
FAO-MedSudMed: CC5/Inf.08	Pilot study: Spatial pattern of fisheries demersal resources, environmental factors and fishery activities in GSA 15 (Updated version)
FAO-MedSudMed: CC5/Inf.09	Contribution to Guidelines for Chondrohichtyes fish Age Reading in the Mediterranean Sea (Application to selected species). GCP/RER/010/ITA/MSM-TD-08. (Advanced copy)
FAO-MedSudMed: CC5/Inf.10	MedSudMed Informative note
FAO-MedSudMed: CC5/Inf.11	MedSudMed publications (CD)
FAO-MedSudMed: CC5/Inf.12	Field manual on Macroscopic identification of maturity stages of fisheries resources (9-11 July 2006, MBRC Tajura, Libya)
FAO-MedSudMed: CC5/Inf.13	Report of the training course on age determination of cephalopods and crustaceans (24-28 July 2006, INSTM La Goulette, Tunisia)

Report on Project's Progress (March 2006 – October 2006)

Introduction

The MedSudMed Project promotes the scientific cooperation by implementing research activities dealing with interactions between fisheries resources and biotic and abiotic environment in the Project area (GFCM GSAs 12, 13, 14, 15, 16 and 21). Activities request that methodologies are standardized and the Project provides technical assistance in this sense, ensuring that the outputs produced will be useful to each beneficiary country individually in a national context and jointly in the whole Project Area. The Project also aims at building national capacity and creating scientific networks for the sharing and exchange of information.

This paper provides an overview of the latest activities carried out by the MedSudMed Project between March and October 2006. The activities follow an outline that was presented and approved during the 1st Coordination Committee meeting (Rome, Italy, September 2002) (GCP/RER/010/ITA/MSM-TD-1). The program of work was tuned during the successive Coordination Committee meetings (Salammbô, Tunisia, February 2004; Tajura, Libya, February 2005; St Julians, Malta, February 2006). The activities detailed here represent the follow-up to the 4th Coordination Committee (GCP/RER/010/ITA/MSM-TD-11, document CC5/Info03 refers).

During the previous Coordination Committee meetings a general outline of research, workshops and training was agreed upon and the implementation of the related activities was scheduled. The MedSudMed Project implements work plans related to three main components dealing with: Spatial distribution of demersal resources and the influence of environmental and fishery characteristics; Small pelagic fish: stock identification and oceanographic processes influencing their abundance and distribution; Marine Protected Areas (MPAs) and fisheries management.

Furthermore, a fourth component, transversal to the previous ones focuses on the development of the Fishery and Ecosystem Information System (FEIS), with the support of the regional experts.

In particular, during the last inter-committee period, the Project, within the component on demersal fisheries resources and small pelagic fisheries resources, undertook the following activities:

1. Cooperative research programmes and working groups
2. National capacity building
3. Regional cooperation
4. Project communication.

The outputs of these activities are hereafter summarized according to each Project component. The Project also organized further technical meetings and supported regional experts' travels.

1. Cooperative research programmes and Working Groups

In coherence with the activities and work-plan agreed upon during the previous Coordination Committee meetings, the Project implemented a series of activities dealing with field work and data processing methodology. During the inter-session period, on the basis of standardized protocols that were agreed upon previously, field work continued for each component of the Project, as well as on-the-job training. Moreover, the standardization of data processing was pursued.

1.1. MedSudMed Component on Demersal Resources

So far, the Project has focused on activities dealing with the standardization of data collection and processing methodologies for the description of the spatial distribution of two species of demersal fisheries resources in the Project area. The main patterns of this distribution were described and critical areas were identified. As a follow up, the Project focused on particular areas where enough data were available to study the spatial distribution of selected target species among demersal fisheries resources (i.e. abundance and density of different life stages, localization of areas of major concentration of mature females and of nursery areas, fish assemblages' characteristics) in relation to the spatial pattern of fisheries activity, the oceanographic factors characterizing the area, as well as the bottom characteristics in terms of sediments and benthos, in expectation of outputs that will contribute to enhance the understanding of the ecosystem structure and functioning. As a result, a Pilot study on "Spatial pattern of fisheries demersal resources, environmental factors and fishery activities" was undertaken in GSA 15 (Malta Island).

A workshop was organized to present the main outputs of the pilot study to representatives of all MedSudMed participating institutes and take stock of similar studies conducted in the Project area and/or availability of data and information to perform similar studies in other zones of the Project area (Mondello, Italy, 17-18 July 2006). Presentation was made of the study conducted in GSA 15. The results of a work carried out by the Institut des Sciences et Technologies de la Mer (INSTM) in GSA 14 (Gulf of Gabès) were also presented to the meeting. The objective of the study conducted in GSA 14 was the identification of marine protected areas on the basis of an exhaustive description of the Gulf in terms of fishery activities, distribution of fish stocks, marine biodiversity; the overall scope was to identify areas that may benefit from closure to fishing. Results of both studies were discussed by the participants in the workshop; it was decided to present them at the forthcoming GFCM SAC Sub-Committees and to produce a MedSudMed technical document for each study.

As a result, both studies were presented at the GFCM SAC Sub-Committee on Marine Environment and Ecosystems (Rome 11-14 September 2006) and were considered interesting illustrations of application of EAF by the participants. It was advised to present the main outputs to the SAC.

Finally, a review on the fishing sector was initiated, with the objective of compiling data on marine capture fisheries and aquaculture in the MedSudMed project area using FAO statistics. Data will be compiled by country, year, species, fisheries resources group (pelagic, demersal, large pelagic), by environment (inland water, brackish water, marine water). Basic statistical analysis will be carried out, in order to highlight the main relevant aspects and considerations of the fisheries landing/aquaculture patterns and trends

1.2. MedSudMed Component on Small Pelagic fish

For this component, the Project invested much effort in collecting data in areas where existing information was rather limited to provide an overview of the spatial distribution of the stocks and allow a location of the main spawning and retention areas. Therefore, with the cooperation of the MedSudMed participating institutes, the Project supported the conduction of surveys at sea with mixed teams on board and during which on-the-job training was provided.

Cooperative acoustic surveys (R/V “Dalla Porta” 1-15 October 2005 and 26 June-2 July 2006) were conducted in cooperation with IAMC-CNR with the scope of conducting an interdisciplinary research to estimate the spatial distribution and abundance of the pelagic organisms on the southern continental platform of Sicily, between Marsala and Capo Passero, on an area of about 2700m². In agreement with the MCFS and with the support of the MedSudMed Project, the sampling area was extended to the Maltese territorial waters. The main activities conducted on-board were the acoustic measurements of small pelagic fish stock, the biological sampling of small pelagic fish and the measurement of physical-chemical parameters of the water column. Training on board was provided for scientists belonging to institutes participating in the MedSudMed Project, such as the Malta Centre for Fisheries Sciences (Marsaxlokk, Malta) and the Marine Biology Research Centre (Tajura, Libya).

A cooperative ichthyoplankton survey was conducted in Libyan territorial waters on board the R/V “Urania” (12-24 August 2006). With the active cooperation of the Marine Biology Research Centre (MBRC) and of the Istituto per l’Ambiente Marino Costiero (CNR-IAMC), a cooperative ichthyoplankton survey was conducted in the western part of the Libyan waters. The main objectives of the survey were (i) the delineation of spawning areas of the target species; (ii) the study of correlations between mesoscale physical structures and the distribution and abundance of small pelagic fish eggs and larvae and zooplankton; (iii) measurement of physical parameters with a multiparametric probe and (iv) analysis of sediments. Considering the reproduction period of small pelagic fish in this area, the main target species were anchovy and round sardine. As for the previous years, data were also collected in the Maltese territorial waters, allowing the Project to get information in 3 GSAs collected at the same period and with the same vessel (GSA 15, 16 and 21).

Besides, progress was made on the processing of data that were collected during the ichthyoplankton surveys that were organized last year. A meeting was organized with scientists from INSTM and CNR-IAMC. Biological and environmental data belonging to different institutes were shared in order to be processed jointly and compare current hypothesis on transport and retention patterns of eggs and larvae. The technical document is being finalized.

As discussed during the previous Coordination Committee meeting, an analysis of environmental parameters was conducted at regional scale using a numerical model that was run over the period of five years (2000 to 2004). The outputs of the model consist in monthly average maps of temperature, salinity, current speed and direction at different depth levels. Methodological details will be summarized in a technical report and will be distributed as soon as available.

1.3. MPAs and fisheries management

Activities under this component are based on results obtained in the other components of the Project. One of the objectives of this component was to synthesize multidisciplinary information (fisheries, biodiversity, abiotic environment...) in order to identify areas that may potentially benefit from a particular status in terms of fisheries management. To achieve this goal, baseline information was collected in the Project area and much effort was invested for the standardization of the data. Pilot studies such as those conducted in GSA 15 (Malta Island) or GSA 14 (Gulf of Gabès) provided important methodological indications, as well as preliminary results that will be further discussed at the forthcoming Coordination Committee meeting, in order to assess possible applications in terms of fisheries management.

1.4. Information System

Advances were made on the development of the FEIS corporate database and a first functioning version (FEIS1.0) was finalized and distributed to the participating institutes. So far, the corporate data base contains data on: trawl surveys, acoustic surveys, ichthyoplankton surveys, abiotic environment. Eventually, the FEIS regional corporate database will provide an overview of the types of data available in the Project area, geographical position of the samples and time periods for which data are available, with mention of the institute that owns the data. In order to facilitate the visualization of these data in GIS softwares, a spatial query tool was developed. This graphical tool allows selecting geographical areas and getting information on the data available in that area. An updated version of the FEIS 1.1 including additional queries was presented to the last GFCM SAC Sub Committees held in Rome, Italy on 11-14 September 2006.

2. National Capacity building and training

During this period, several training courses were organized by the Project, upon request of the participating institutes:

- **Training on collection and conservation of ichthyoplankton samples on board the R/V “Hannibal” (Tunisia, 1-6 July).** The Project took advantage of the survey carried out by INSTM in GSA 12 (Gulf of Tunis) to organize the participation of a scientist from MBRC who was trained for the collection and conservation of ichthyoplankton samples, as well as environmental data.
- **Training Course on Macroscopic identification of maturity stages of fisheries resources (Tajura, Tripoli, 9-11 July 2006).** The Course was primarily intended for the scientists of the MBRC and focused on the macroscopic identification of maturity stages of demersal fisheries resources. The objective was to teach the basic techniques for the processing of samples and macroscopic identification of maturity stages for different species of fish. More specifically, background information on maturity stages of demersal fisheries resources, including basic notions and terminology was given. The course also included a general description of the reproduction organs of the main fisheries resources (fish, crustaceans and cephalopods), an analysis of slides illustrating the macroscopic identification of maturity stages in the Mediterranean species, a description of and comments on the maturity scales currently available. Practical exercises were organized with fresh samples of *Sardinella aurita*, *Scomber japonicus* and *Spicara flexuosa* and simple techniques, algorithms and exercises to retrieve data on reproductive features (macroscopic) were taught. Following the biological analysis, simple elaboration of

the resulting data has been performed. All the participants at the course showed interest in the topics and some of them proposed the development of collaboration and new studies on the fish species distributed in the Libyan Sea.

- **Training course on age determination of Cephalopods and crustaceans (La Goulette, Tunisia, 24-28 July 2006).** The objective of the course was to provide an overview of the techniques used for the determination of age for selected species of cephalopods and crustaceans, through the analysis of length frequencies, as well as the software most commonly used for the data processing. Some of the techniques used to study the model growth in Cephalopods and Crustaceans were explored in details and participants were provided with an understanding of the underlying assumptions and mathematics used in analysis of length frequency distributions. Some case studies were illustrated with the FiSAT package and Excel spreadsheets.
- **Training course on trawl survey samples processing (Mazara del Vallo, Italy, 24-28 July).** The course consisted mainly in providing an overview of the techniques used in laboratory for the identification of sex and maturity, extraction and storage of otoliths and preliminary processing of data; it was intended to a scientist for the MCFS. During the training, analysis of several classes of species collected during a trawl survey (MEDITS 2006) was carried out. The classes of species investigated were bony fish, crustaceans and cephalopods. The bony fish were analyzed, mainly *Mullus barbatus* and *Merluccius merluccius*. For both species, the total body weight and the total body length were measured for a significant number of samples. The sex and maturity of each were also identified. For *Merluccius merluccius*, the otoliths were removed and stored in formaldehyde for further investigation. On the second day, crustaceans were investigated. The species used for the investigation was *Parapaneus longirostris*. For a sample of these species the carapace length was measured along with the total body weight. The sex and maturity stage of each of the individuals were identified. The cephalopods were investigated. Two species were used in this study. These were the common octopus, *Octopus vulgaris* and a squid species. For both species, the mantle length was measured along with the total body weight. The sex and maturity stage of the individuals were identified. Then, the data obtained during the first three days was entered in the database and saved for analysis. During the last day, tuna fish were used. The fish were cleaned and the first spine located near the first upper fin was removed from the fish for analysis.
- **Training course for technical operators on marine biotoxins (Tajura, Libya, 17-21 September 2006).** As requested by the MBRC during the fourth MedSudMed Coordination Committee meeting (Malta, 15-16 February 2006), arrangements were made to organize a course on marine biotoxins to be held in Tajura, Libya. The Centro Ricerche Marine of Cesenatico was identified as a relevant partner for the course, as it regularly organizes training courses on this topic. Therefore, the Project organized a mission for a scientist of the MBRC to Cesenatico (26-27 April 2006), in order to discuss the content of the course and prepare a detailed programme, so as to identify the most relevant trainers. Following this mission, it was decided to also involve the Istituto Zooprofilattico delle Venezie of Adria, Italy. The main trainer of the course was identified and traveled to Libya (22-24 August 2006), in order to discuss the details of the course with the experts from MBRC, define the material and the equipment to be used and have an idea of the logistic aspects to be considered during the course. The dates of the course were set to 17-21 September 2006; it involved a total of 3 trainers, as well as a Tunisian expert who presented the work carried out at INSTM on the monitoring of marine biotoxins in fishery products. The

course provided baseline information on several aspects dealing with marine biotoxins (basic knowledge of sanitary risks related to marine biotoxins, chemical methods for detection of biotoxins, legislation frame, microbiological methods for the detection of pathogen bacteria in seafood, methodology for identification and analysis of toxic phytoplankton).

Meeting	Participants	Institutions
Training on collection and conservation of ichthyoplankton samples on board the R/V “Hannibal” (Tunisia, 1-6 July)	2	2
Training Course on Macroscopic Identification of Maturity Stages, Tajura, Libya, 9-11 July 2006	20	2
Training course on age determination of Cephalopods and crustaceans, La Goulette, Tunisia, 24-28 July 2006	15	5
Training course on trawl survey samples processing, Mazara del Vallo, Italy, 24-28 July 2006	3	2
Training course for technical operators on marine biotoxins (Tajura, Libya, 17-21 September 2006)	10	4

3. Regional cooperation

The reinforcement of regional cooperation was encouraged by the Project through participation of regional experts in several workshops, meetings, seminars and conferences organized in the Mediterranean area. Relations were constantly maintained with the researchers and the Institutes of the Project area for the discussion of the Project’s activities, planning and organization of the working groups, and comments on the publications produced. The Project supported the participation of regional scientists in meetings organized by the GFCM and participated in working groups organized by other regional Projects in order to promote the technical cooperation between Projects and take advantage of their experience and the results already obtained:

- **Joint meeting on stock assessment methodology and workshop on Black Sea assessments of pelagic and demersal fish stocks (Istanbul, 8-10 March, 2006).** The Project supported the participation of a scientist from the MBRC in the meeting.
- The Project was also represented at the **GFCM Scientific Advisory Committee - SCS/SCSA/SCSS transversal Workshop on Stock Assessment and Operational Units (Rome, Italy, 26 June 2006 - 28 June 2006).**
- The Project supported the participation of regional scientists at the last sessions of the **GFCM SAC Sub-Committees on Stock Assessment and Marine Environment and Ecosystems (Rome, 11-14 September 2006).** A total of 3 presentations were made on:
 - o Delineating habitats used by different life phases of Hake in the Strait of Sicily
 - o Identification of sensitive marine areas in the Gulf of Gabès (GSA 14) using GIS
 - o Demersal resources and fisheries around the Maltese Islands (GSA 15): multidisciplinary approach in a data-limited situation.
- **AdriaMed Working Group on small pelagic fisheries resources in the Adriatic Sea (Ancona, Italy, 15 - 19 May 2006).** The Project participated in the working group and provided a brief summary of the activities carried out by MedSudMed on

small pelagic fish, in particular as regards relationships between spatial distribution and oceanographic parameters. In parallel to the meeting, informal presentation of the FEIS was made to researchers from the Adriatic Sea who were interested in getting information on the general structure of the database.

4. Project Communication

4.1. Web site (<http://www.faomedsudmed.org>)

Since its publication, the Project's website has been updated. By connecting to the website, it is possible to have a general description of the MedSudMed Project, get information on the recent or forthcoming events organized by the Project, download the documents released by the Project as well as link to the Research Institutes participating in the MedSudMed Project, the Mediterranean Regional Projects or to sites regarding GIS, databanks and Research Bodies.

The connections to the web site have increased during the last year (from an average of 900 to 1400 visits per month). Around 1000 documents are currently downloaded from the site each month. Visits still come mainly from North America (47%) and Europe (40%). Connections from Africa decreased during the last year, from 8% to 3.5%.

4.2. Technical Documents

Several technical documents were prepared; they are related to the workshops and training courses organized by the Project. The MedSudMed Project Publications are issued as series of Technical Documents (GCP/RER/010/ITA/MSM-TD-00) or Occasional Papers (GCP/RER/010/ITA/MSM-OP-00) related to meetings and research organised or conducted within the framework of the Project. The MedSudMed Serial will be included in the monitoring list of AdriaMed (ASFA International Partner). Since the beginning of the Project, the following documents have been published or are being finalised:

4.2.1. Published or in course of publication

- MedSudMed. 2003. Report of the First Meeting of the MedSudMed Coordination Committee. FAO-MiPAF Assessment and Monitoring of the Fishery Resources and Ecosystems in the Straits of Sicily. GCP/RER/010/ITA/MSM-TD-01. *MedSudMed Technical Documents*, 1: 57 pp.
- MedSudMed. 2004. Report of the MedSudMed Expert Consultation on Spatial distribution of demersal resources in the Straits of Sicily and the influence of environmental factors and fishery characteristics. GCP/RER/010/ITA/MSM-TD-02. *MedSudMed Technical Documents*, 2: 102 pp.
- MedSudMed. 2004. Report of the MedSudMed Expert Consultation on Small pelagic fish: stock identification and oceanographic processes influencing their abundance and distribution. GCP/RER/010/ITA/MSM-TD-05. *MedSudMed Technical Documents*, 5: 132 pp.
- MedSudMed. 2004. Report of the Second Meeting of the Coordination Committee. GCP/RER/010/ITA/MSM-TD-06. *MedSudMed Technical Documents*, 6: 47 pp.
- MedSudMed. 2005. Report of the Third Meeting of the Coordination Committee. FAO-MiPAF Assessment and Monitoring of the Fishery Resources and Ecosystems in

the Straits of Sicily. GCP/RER/010/ITA/MSM-TD-10. *MedSudMed Technical Documents*, 10: 44 pp.

- MedSudMed. Report of the MedSudMed Expert Consultation on Marine Protected Areas and Fisheries Management. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (draft copy available)*.
- MedSudMed. Report of the MedSudMed Workshop on Standardization of Trawl Surveys Protocol in the MedSudMed Project Area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (advanced copy available)*.
- P. Rizzo, S. Gancitano, C. Badalucco, S. Enajjar, C. Mancusi, A. Mosteiro Cabanelas, B. Saidi, L. Sion. Contribution to guidelines for Chondrichthyes fish age reading in the Mediterranean Sea (application to selected species). GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (advanced copy available)*.
- MedSudMed. Report of the Workshop on Standardisation of Fish Age Determination Based on Otolith Samples in the MedSudMed Area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (advanced copy available)*.
- MedSudMed. Workshop on the Standardization of Echo-Surveys and Ichthyoplankton Surveys Protocol in the MedSudMed Project Area. GCP/RER/010/ITA/MSM-OP. *MedSudMed Occasional Papers (draft copy available)*.

4.2.2. In preparation

- MedSudMed. Working Group on Basic Parameters related to Small Pelagic Fish: Length at Sexual Maturity of Anchovy and Sardine in the MedSudMed Project Area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.
- De Santi, F. Fiorentino, M. Camilleri, M.L. Bianchini, S. Ragonese. SeaTrim: Software for the Exploratory Analysis of Trawl Information in the Mediterranean. GCP/RER/010/ITA/MSM-OP. *MedSudMed Occasional Papers (in preparation)*.
- MedSudMed. Spatial pattern of fisheries demersal resources, environmental factors and fishery activities in GSA 15. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.
- MedSudMed. Characterization of the main demersal assemblages of the MedSudMed Project area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.
- MedSudMed. Mapping of spawning grounds and larvae distribution of anchovy (*Engraulis encrasicolus*) in the MedSudMed Project area: East Tunisia (GSA13), Malta Island (GSA 15) and South Sicily (GSA 16). GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.
- MedSudMed. Regional mapping of anchovy and sardine biomass in the MedSudMed area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.
- MedSudMed. Spatial distribution of biomass indices, nursery and spawning areas of *Merluccius merluccius* and *Mullus barbatus* in the MedSudMed Project area. GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents (in preparation)*.

Development of the Project's Programme

Introduction

The aim of this paper is to give the Coordination Committee (CC) members elements for the discussion of the MedSudMed Project work programme for the coming period. The Project will focus on priority issues, taking into account the main suggestions provided by the internal technical review for which the CC is requested to advise the Project. Considering the timing of the Project, the programme of work presented in this document refers to 2007.

The information presented here should put the Coordination Committee in a position to give advice to the Project on the activities that should be finalized on the basis of the methodological framework that was discussed during the previous years.

The first Coordination Committee meeting (GCP/RER/010/ITA/MedSudMed-TD01) identified the Project components, as well as a number of medium and long terms activities to be implemented by MedSudMed. The successive Coordination Committee meetings were regularly updated on the progress made in the execution of the work-plan of the Project. These activities were summarized in tables (Report of the Second Meeting of the FAO MedSudMed Coordination Committee, GCP/RER/010/ITA/MedSudMed-TD06) representing the methodological framework of the Project activities and the reference work plan of the Project since October 2002 (tables can be found in Annex of this document).

For the coming period, the Project, in collaboration with the participating institutions, will focus on the finalization of the programme of research activities and the filling of remaining gaps, as well as the training component, as indicated during the last CC meeting held in Malta (GCP/RER/010/ITA/MedSudMed-TD11). For the next period the MedSudMed Project will:

- a. continue supporting the scientific standardization of the methodologies applied in the relevant studies related to fishery resources and to the relationships between fishery resources and biotic and abiotic factors;
- b. continue increasing scientific knowledge on fishery resources and their ecosystem in the Project area through the finalization of the programme of research activities already implemented;
- c. continue strengthening the national expertise through on-the-job training and working groups, and supporting the national research institutions in upgrading the scientists' expertise;
- d. continue strengthening and supporting scientific cooperation between the different experts and institutions involved in the Project activities, who represent the scientific network of the Project;
- e. continue strengthening cooperation at Mediterranean level, among the countries and between the MedSudMed Project, the GFCM and other FAO Regional Projects.

Some of the activities included in the present work plan overlap with those of the previous programme of work, as they were initiated during the inter-committee period and are currently in progress.

a) Standardization of methodology

As underlined by the regional experts, the necessity of standardizing methodologies used by the different participating institutes is of the highest relevance. Therefore, the Project put much effort in the harmonization of protocols, tools, both for field work and data processing. During the next period, the Project will implement activities aiming at standardizing the approaches, through training courses and/or workshops.

Demersal resources

Where demersal fishery resources component is concerned, the topics to be taken into consideration for further discussion on standardization procedures are listed below:

- Further standardization of the analysis of trawl surveys data, in particular as regards the processing of the samples collected during the surveys.
- Discussion and agreement on the most relevant biological indicators and demographic indices dealing with biology of target species and that may synthesize the current knowledge in the Project area.
- Discussion and agreement on the baseline information available in the Project area for the identification of critical areas (i.e. Essential Fish Habitat). For instance, a common approach to study biocenosis and bottom types should be agreed upon in view of describing habitats, benthos and macroinvertebrate communities (definitions, review of available data and literature...).
- Agreement on main guidelines for the duplication of the Pilot Study that was conducted in GSA 15 and GSA 14 (topics to be considered, methodology adopted).

Small pelagic fish

Where small pelagic fishery resources component is concerned, the topics are the following:

- Further standardization of the scientific methodological approach and tools utilized for data processing to produce estimates of biomass spatial distribution per species in the GSAs where data processing was not yet carried out.
- Coordination of the research vessels' schedule will be sought, in order to minimize the time lag between surveys conducted by different vessels and try to extend the sampled areas.

b) Increasing scientific knowledge

The research activities identified by the experts during the MedSudMed Expert Consultations and implemented by the Project, concentrated mainly on demersal and small pelagic fishery resources. However, a pilot study on "*Spatial patterns of fisheries demersal resources, environmental factors and fisheries activities*" was carried out in GSA 15. Many of the analysis performed during the Pilot Study deal with the fundamental scientific information

required for the achievements of the Project Component on marine protected areas for fisheries management.

For the coming period the Project will continue supporting the Working Groups that were established for the analysis of the available information and data, in particular for the writing and finalization of technical publications. The activities and working groups that are foreseen for the final period are summarized below.

Demersal fisheries resources

The Project will continue supporting the Working Groups dealing with data processing initiated during the previous periods and finalization of scientific documents. In particular the Project will:

- Provide support for the conduction of trawl surveys, with particular attention to areas that are currently not covered by regular programmes.
- Support data processing that should be carried out for *Mullus surmuletus*, *Trachurus trachurus*, *Pagellus erythrinus*, *Helicolenus dactylopterus*, *Parapenaeus longirostris*, *Aristaeomorpha foliacea*, *Nephrops norvegicus*, *Eledone cirrhosa*, *Sepia officinalis*, *Octopus vulgaris*, *Raja clavata* in view of identifying the areas of major concentration of juveniles and mature females.
- Promote activities on the identification and description of essential fish habitat at GSA scale, defined as “those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity, including physical, chemical and biological properties of marine areas and the associated sediments and biological assemblages that sustain fish populations throughout their life cycle”. These activities will be carried out on the basis of scientific knowledge data available in the area. Information on biocenosis and bottom types should also be dealt with.
- Correlate the information on spatial distribution of demersal resources to the oceanographic characteristics. Main results obtained within the description of oceanographic parameters at regional level will be used to draw out patterns that may explain the spatial distribution of the different life stages of demersal fisheries resources.
- Produce a review on the fishing sector compiling data on marine capture fisheries and aquaculture in the MedSudMed Project area using FAO statistics. Data should be compiled by country, year, species, fisheries resources group (pelagic, demersal, large pelagic), by environment (inland water, brackish water, marine water).

Small pelagic fishery resources

The Project will organize Working groups with the objective of processing data and produce results on the following issues:

- Data collection will be continued during acoustic and ichthyoplankton surveys. Efforts should be made to cover areas where no data is available so far.
- Samples and data collected during the last acoustic and ichthyoplankton surveys will be jointly processed in order to update scientific information at regional level.

- On the basis of information provided by the circulation model at regional level, correlations should be sought with distribution patterns of eggs and larvae, in order to draw out sound hypothesis on transport and retention schemes of eggs and larvae.
- Synthetic species sheets should be produced for small pelagic species in order to summarize knowledge on the main species of the Project area.
- Review of the fisheries sector should be produced (as per Project Component on Demersal Resources);

Marine Protected Areas

Thanks to its multidisciplinary approach, the Pilot study on “*Spatial patterns of fisheries demersal resources, environmental factors and fisheries activities*”, allowed to touch issues identified for the Project component on “Marine Protected Areas and Fisheries management”. This is particularly true for what regards the description of the dynamics and status of demersal fisheries resources; relevant environmental processes influencing the demersal fisheries resources and the critical habitats. On the basis of the results obtained and on the guidelines that will be agreed upon, the Project will support the duplication of such study in other GSA(s) of the Project area on the basis of the available scientific knowledge and where all data required are available for a similar implementation. Therefore, the activities foreseen for the next period are:

- Finalization of the technical documents presenting the work carried out in GSA 15 and GSA 14 and review the results of both studies in view of giving further consideration to methodologies applied in the framework of the EAF in the Mediterranean.
- Completion and finalization of the interdisciplinary MedSudMed pilot studies for identifying and applying the principles of the EAF. On the basis of information available, results obtained on the identification of EFH in both areas will be integrated.
- Production of guidelines describing the approach used for the pilot study conducted in GSA 15 and including methodological indications.
- Duplication of pilot study in other GSAs of the Project area, in view of identifying and describing critical areas that deserve particular attention when fishing is concerned.

c) Building national capacity

In the coming period, the Project will continue to strengthen the national expertise with the full involvement of all the research institutes and scientists from the participating countries. An increase in national capacity in terms of expertise will therefore continue to be promoted through the support of specific research programmes that are coherent with the activities of the Project. Seminars and training activities will also be considered both for the implementation of research activities and in the efforts to standardize scientific methodology, as described in the tables presented in Annex 1.

In particular, activities foreseen for the next period include:

- The continuation of on-the-job training during the surveys at sea (acoustic, ichthyoplankton and trawl surveys).

- The organization of ad hoc training programmes upon request of the participating institutes, in particular in GSAs where numerous gaps still remain.
- Basic training in fisheries acoustics, as requested by the regional scientist during previous meetings organized by the Project. A short course involving scientists from all the institutes participating in the Project will be considered.
- Follow up of the training courses organized during the past period and that require additional practical work sessions to continue enhancing the trainees skills.

Furthermore, other *ad hoc* training courses focusing on specific requirements from the Institutes could be considered; some training could also be arranged in cooperation with the other FAO Regional Projects. The organization of such meetings and training sessions will be considered in accordance with availability of equipment and laboratories.

Wherever possible and on the basis of budget availability, the Project will continue in providing the equipment necessary to the Institute for the implementation of the MedSudMed activities.

d) MedSudMed Fishery and Ecosystem Information System (FEIS)

The project component that concerns the establishment of a Regional Information System targeting the interaction between fishery and its ecosystem (FEIS) could continue towards its implementation and the migration of the system into a client/server environment for a web based management. This will enable the system functionalities to expand further by incorporating advanced and controlled communication routines, comprehensive data processing and the publication of information on the web. FEIS on the Web will handle national and regional data at metadata level both numerically and graphically through an integrated interface with MS Excel and a GIS tool (ArcviewTM).

e) Cooperation at Mediterranean level and between the MedSudMed Project, the GFCM and other FAO Regional Projects

Results of the meetings of Project Working Groups, as well as the results of the research activities as they become available would be presented at GFCM-SAC meetings as regional contributions by the Project in the framework of its activities. Cooperation will be sought with the other FAO regional Projects (Adriamed, Copemed, Eastmed and MedFiSis), as well as international institutions on topics that may be of common interest with MedSudMed.

As discussed during the last SAC meeting (24-27 October 2006, Rome, Italy), in particular with reference to the activities proposed by the SAC for 2007, the following issues could be discussed by the Coordination Committee, as inputs from MedSudMed to the activities of the different Sub-Committees in 2007:

- Sub-Committee on Stock Assessment (SCSA):
 - continuation on the cooperation on the identification of nursery areas for fisheries resources in the Project area and production of reliable maps of nursery areas;
 - continuation in supporting the standardization of echo-surveys;
 - promoting and supporting the implementation of indicators and reference points in the Project area;

- on the basis of the work carried out so far by the Project, update the list of priority species of demersal and small pelagic fisheries resources;
- assist the SCSA in identifying partner institutions to initiate training course on new methodologies for stock assessment based on trawl survey data.
- Sub-Committee on Statistics and Information (SCSI):
 - establish cooperation with the SCSI for the formatting and storing of relevant information available in the MedSudMed data bases.
- Sub-Committee on Marine Environment and Ecosystems (SCMEE):
 - continuation, completion and finalization of the interdisciplinary MedSudMed Pilot Study (GSA 15) for identifying and applying the principles of the EAF;
 - continuation on the cooperation for the identification of sensitive areas for fisheries resources in the MedSudMed area.
- Sub-Committee on Economic and Social Sciences (SCESS):
 - introduce the use of socio-economic indicators in the MedSudMed Pilot Study in GSA 15.

f) Project network

It is the aim of the Project to continue strengthening and supporting scientific cooperation among the experts and institutions involved in MedSudMed activities, these represent the scientific networks of the Project. These networks are well established and much of the work that concerns discussion of methodologies can now be carried out electronically, meetings will only be considered for highly specialized issues and where a technical output is required.

Annex 1: General outline of research, Workshops and training programme to be implemented by the MedSudMed Project in the coming period.

Programme	Spatial distribution of demersal resources in the Project area and the influence of environmental factors and fishery characteristics
Overall Objective	To describe the spatial distribution of demersal resources in the Project area and the factors explaining it, including biotic and abiotic environmental parameters and fisheries characteristics.
Background Rationale	Despite the management frameworks adopted, very little information is available on the distribution of demersal resources in the Project area. In this context, trawl surveys have been regularly conducted in the Project area by the different institutes since 1985, in order to enhance knowledge on the spatial distribution of demersal populations at various stages of their life cycle. However, sampling designs and protocols used to date differ and do not allow a homogeneous spatio-temporal analysis of the data, due to the absence of a coherent regional data set. As a result, experts of the region highlighted the importance of standardizing the methodologies to fill the remaining gaps in knowledge on spatio-temporal variability of fish distribution at regional level, in particular regarding fish communities, feeding grounds and habitat mapping. Besides, in the absence of seasonal data covering relevant biological periods, key knowledge on reproduction grounds of the main target species is still missing in the Project area, as well as the description of the main physical processes influencing the abundance and distribution of early life stages. Finally, for many areas a relevant gap remains on the quantification and spatial distribution of fishing effort, considering the absence of geo-referenced data on this issue. A common approach as well as standardized methodologies and protocols are needed to fill the gaps highlighted and obtain valid results and information at regional level.
Methodological approach	Combined trawl surveys with environmental measurements. Eastward extension of the on-going trawl surveys to include Libyan waters and addition of sediment sampling. Different life stages of the agreed priority species will be considered (recruits, juveniles, adults), and a component will focus on the identification of the stock units. All the relevant socio-economic information related to the fishery activities and fishing pressure in the area studied will be gathered. Whenever necessary, the organisation of working groups involving representatives of all participating institutes, to discuss, standardize, prepare activities to be implemented,
Activities	<ul style="list-style-type: none"> - Discuss, prepare and agree upon regional standardized methodologies and protocols to be used in the data inventory and collection (done) - Discuss, prepare and agree upon regional standardized methodologies and protocols to be used in the data processing (done) - Create an inventory and collect existing data and information available in the participating institutes in order to extract background information to be used as preliminary basis for further studies (in progress) - Execute joint trawl surveys in pilot areas in order to cover representative portions of the Geographical Sub Areas included in the Project Area (done) - Prepare common data sets including biological, environmental and sediment data following the standardized protocols prepared and agreed upon by all institutes involved (in progress) - Carry out data compilation and processing to produce validated results at regional level, using already existing data and data provided by standardized trawl surveys: <ul style="list-style-type: none"> o Identification and description of the spatial distribution of the target species agreed upon by the participating institutes by calculating and mapping the density index for each species (<i>Merluccius merluccius</i>, <i>Mullus barbatus</i>, <i>Mullus surmuletus</i>, <i>Trachurus trachurus</i>, <i>Pagellus erythrinus</i>, <i>Helicolenus dactylopterus</i>, <i>Parapenaeus longirostris</i>, <i>Aristaeomorpha foliacea</i>, <i>Nephrops norvegicus</i>, <i>Eledone cirrhosa</i>, <i>Sepia officinalis</i>, <i>Octopus vulgaris</i>, <i>Raja clavata</i>) (done for 2 species) o Processing of sediments and biological samples to identify and classify the main biocenosis in the Project area using the standard terminology of RAC/SPA when applicable (in progress) o Description of the fish assemblages of demersal resources according to bathymetry, biocenosis and substratum (in progress) o Analysis of the stock unit based on biological parameters and genetic markers: data elaboration in order to provide information on the genetic structure of selected populations

	<ul style="list-style-type: none"> ○ Growth and age determination of selected species based on standardized methodology using otolith reading (done) ○ Calculation of the length at sexual maturity of selected species - Analysis of the fisheries sector and of the spatial distribution of fishing effort in the Project area, where possible on the basis of the available information (in progress).
Relations with the on-going national and regional research activities	National surveys are conducted annually and geo-referenced data are processed routinely for the mapping of the resources and for age reading. Local information exists on relationships between biomass concentration and oceanographic processes, as well as on the spatial distribution of fishing effort
Expected Outputs	<ul style="list-style-type: none"> - Standardized sampling protocols to be used at regional level (done) - Standardized data processing protocols to be used at regional level (done) - Full inventory of existing data and information regarding relevant issues and mentioning the availability of the information (in progress) - Regional biomass estimation and distribution of the stocks at regional level (in progress) - Single thematic maps for each target species and relevant environmental factors (in progress) - Mapping of benthic ecosystems/habitats in the Project area (in progress) - Localization of spawning and nursery areas and relationships with physical processes (in progress) - Characteristics of the main fish assemblages and relationships with habitats and physical processes (in progress) - Definition/Calculation of standard parameters relevant for biological knowledge and for fisheries management - Delineation of the main stock units and identification of the shared stocks in the Project area
GSA Covered	As far as possible, the pilot activities mentioned above will be conducted in representative portions of the Geographical Sub Areas covered by the Project
Research Institutions involved	INSTM, IRMA-CNR, MBRC, MCFS and other relevant institutions that could be invited to give scientific support on specific matters
Required training, working groups research activities and timing	<ul style="list-style-type: none"> - Workshop on standardization of trawl survey protocols (done) - Workshop on standardisation methodologies (done) - Workshop on growth and age determination based on otolith reading (done) - Working Group on determination of length at sexual maturity for selected demersal species: definition of standard protocol for the collection of representative samples and the statistical processing of the data (TBD) - Seminar on common cartography and mapping of demersal resources density index, and description of fish assemblages (done) - Seminar on stock unit identification - Cooperative trawl surveys (done)

Programme	Small pelagic fish: stock identification and oceanographic processes influencing their abundance and distribution
Overall Objective	To estimate abundance and spatial distribution of small pelagic fish at regional level, considering also early life stages distribution pattern in relation to environmental parameters and fishery characteristics.
Background Rationale	Small pelagic fish populations are generally characterized by significant fluctuations in their abundance, and this probably affects the spatial distribution of the stocks. This variability has also an economic incidence on fisheries depending on these resources. The lack of information on regional assessment of small pelagic fish biomass was underlined on repeated occasions. Moreover, important gaps in knowledge on the possible migration of the species, stock units and relationships with environmental conditions still need to be filled. To date, several studies have been conducted on these issues in the Project area, using different sampling designs and software, and data have been collected regularly since 1998. Yet, enhancing knowledge on these issues at regional level implies the use of standardized protocols for any data collection and processing. This appears a pre-requisite for the obtaining of any useful result for management purposes. A common approach as well as standardized methodologies and protocols are needed to fill the gaps highlighted and obtain valid results and information at regional level.
Methodological approach	Joint acoustic and ichthyoplankton surveys combined with pelagic trawling. Both surveys will be combined with biotic and abiotic environmental measurements and parallel collection of remote sensing data. Organisation of working groups
Activities	<ul style="list-style-type: none"> - Discuss, prepare and agree upon regional standardized methodologies and protocols to be used in the data inventory and collection (done) - Discuss, prepare and agree upon regional standardized methodologies and protocols to be used in the data processing (done) - Create an inventory and collect existing data and information in the participating institutes in order to extract background information to be used as preliminary basis for further studies (in progress) - Prepare survey design in the Project area and standardization of sampling design, equipment and soft wares used on board, both for ichthyoplankton and echo-surveys (done) - Execute a joint echo-survey and ichthyoplankton survey extending the prospected zones to representative portions of all GSA covered by the Project (in progress) - Prepare of common data sets including biological and environmental data following the standardized protocols prepared and agreed upon by all institutes involved (in progress) - Carry out data compilation and processing to produce validated results at regional level, using already existing data and data provided by standardized sampling surveys: <ul style="list-style-type: none"> o Assessment and mapping of the small pelagic fish biomass at regional level by using direct methods (echo-integration and experimental trawling) (in progress) o Analysis of environmental factors at regional scale, in particular temperature, phytoplankton, currents (done) o Joint data analysis coupling eggs and larvae distribution and abundance to biotic and abiotic measurements, by using direct maps comparison and/or spatial statistics methods (in progress) o Determination of the acoustic Target Strength for sardine and anchovy, and calculation of the TS-length relationship (to be reconsidered). o Analysis of the stock unit based on biological parameters and genetic markers: data elaboration in order to provide information on the genetic structure of selected populations o Growth and age determination of selected species based on standardized methodology using otolith reading o Standardisation of basic parameters (length at sexual maturity, age-length and TS-length relationship) - Analysis of the fisheries sector and of the spatial distribution of fishing effort in

	the Project area and when possible on the basis of available information (in progress).
Relation with on-going national and regional research activities	Annual/seasonal surveys are presently organized in the area, by INSTM (Tunisia), and IRMA-CNR (Italy), for the assessment of the biomass and the coupling of biological data to oceanographic variables. The spatial distribution of several species is drawn up, as well as the bathymetric distribution of the different age and size classes. Eggs and larvae samples are also collected on a regular basis.
Expected Outputs	<ul style="list-style-type: none"> - Regional estimate of the small pelagic fish biomass (in progress) - Spatial distribution of small pelagic fish biomass and relative abundance pattern in the Project area, in relation with environmental factors and fishing activities (in progress) - Eggs and larvae distribution and relative abundance pattern (in progress) - Regional map of the main spawning areas of small pelagic fish species (in progress) - Identification of the main environmental factors explaining the distribution and transport pattern of eggs and larvae (in progress) - Validated Target Strength-length relationship at regional level for sardine and anchovy (to be reconsidered) - Improved knowledge of stock unit of selected species through the analysis of genetic structure of the studied populations
GSA Covered	Studies will be conducted in representative portions of the Project area
Research Institutions involved	INSTM, IRMA-CNR, MBRC, MCFS and other relevant institutions that could be invited to give scientific support on specific matters
Required training, working groups research activities and timing	<ul style="list-style-type: none"> - Preparation of surveys at sea and standardisation of working methodologies (sampling period and sampling design, type of data, software, storage of data) (done) - Working group on Target Strength calculation based on historical data - Joint echo-surveys (in progress) - Presentation of the sampling surveys results (in progress)

Programme	Assessment of Marine Protected Areas as a tool for Fisheries management
Overall Objective	To assess the feasibility of MPA implementation for fisheries management purposes, and to produce guidelines on the use of MPAs as a tool for fisheries management specific to Mediterranean areas. The overall objective is to provide proposals on the design, localization and use of such tools and/or further studies, taking into account the existing experience and peculiarities of Mediterranean fisheries.
Background Rationale	During the Project's Expert Consultation organized on this issue, the role of MPAs in the reduction of the fishing mortality, protection of key portions of the stocks and of fish feeding grounds was highlighted. Critical points were indicated as: (i) the dimension of the area to be protected; (ii) legal aspects of the access of the different users to the protected areas; (iii) the assessment of the socio-economic benefits of the implementation of MPAs; (iv) monitoring, control and surveillance to be implemented with particular attention to fishing exploitation. The experts highlighted the existing experience and scientific expertise on these issues in the Project area. However, they underlined the lack of guidelines providing methodological framework and strategic criteria for the implementation of MPAs in a management perspective and taking into account the characteristics of the Mediterranean. Moreover, the experts underlined the relevance of finding common ground between usual considerations on MPAs for biodiversity conservation and fisheries management, for instance in the use of homogeneous terminology. The preparation of specific guidelines on the use of MPAs as a tool for fisheries management in the Mediterranean could also help with this aspect
Methodological approach	<p>1) Establish the spatio-temporal dynamic and status of the fisheries resources inside and outside the identified area using mapping tools (GIS), particular attention must also be given to the issues dealing with the abiotic environment as well as biodiversity including knowledge of biocenosis present in the area. This assessment should be based on background information touching biological, ecological and socio-economical issues.</p> <p>2) description of the fishing effort and pressure exerted inside and outside the area (in space and time)</p> <p>3) on the basis of the above, identify clear objectives of fisheries management, technical measures to be adopted and the monitoring programme including biological, environmental and socio-economic aspects</p>
Activities	<ul style="list-style-type: none"> - Collection and compilation of relevant data on fisheries resources and their ecosystems (habitat, environment, fisheries activity, socio-economy, fishing effort) related to the definition of pilot study zones (in progress) - Definition of pilot study zones (in progress) - Definition of a monitoring programme to assess the effect of fishing closure
Relation with the on-going national and regional research activities	Activities implemented in the framework of this programme will take advantage of on-going research dealing with demersal resources, habitat identification and mapping, assessment of fishing effort. The activities will be conducted in close collaboration with the programme identified by the Consultation on demersal resources, due to the overlap of several topics.
Expected Outputs	<ul style="list-style-type: none"> - In the Pilot study zones, description of: <ul style="list-style-type: none"> - dynamics and status of fisheries resources (in progress) - relevant environmental processes influencing the resources (in progress) - critical/key habitats (in progress) - fisheries activity depending on the key resources (fishing effort inside and outside the zone) (in progress) - relevant socio-economic aspects - Assessment of the effect of fishing closure on biomass, mean size of fish, spillover and socio-economic relationships - Guidelines for the implementation and assessment of MPAs for management purposes adapted to Mediterranean case studies (in progress)
GSA Covered	Pilot study zones will be either included or straddling the GSA included in the Project area
Research Institutions involved	INSTM, IRMA-CNR, MBRC, MCFS and other relevant institutions that could be invited to give scientific support on specific matters
Required training, working groups research activities and timing	<p>Working group on data collection and data processing (in progress)</p> <p>An <i>ad hoc</i> Working Group will be organised for the implementation of pilot studies. The Working Group will focus on the preparation of the scientific protocol including data collection and processing (in progress)</p>