



ASSESSMENT AND MONITORING OF THE FISHERY RESOURCES
AND THE ECOSYSTEMS IN THE STRAITS OF SICILY

MiPAAF

MEDSUDMED
GCP/RER/010/ITA

**8th Meeting of the MedSudMed Coordination Committee
Tripoli, Libyan Arab Jamahiriya, 18-19 May 2010**

Report of the Seventh Meeting of the
Coordination Committee

Sliema, Malta, 18-19 February 2009

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 (Italy, Libyan Arab Jamahiriya, Malta and Tunisia), for the continuous and dynamic assessment and monitoring of the state of the fisheries resources and the ecosystems in this area of the Mediterranean.

Research 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 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.

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GCP/RER/010/ITA Publications

MedSudMed Project publications are issued as 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.

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Preparation of this document

This document is the final version of the report of the Seventh Meeting of the Coordination Committee, organized by the FAO-MedSudMed Project (Assessment and Monitoring of the Fisheries Resources and the Ecosystems in the Straits of Sicily), Sliema, Malta, 18–19 February 2009.

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MedSudMed

Report of the Seventh Meeting of the Coordination Committee, Malta, Sliema, 18-19 February 2009.

MedSudMed Technical Documents. No.24. GCP/RER/ITA/MSM-TD- 24, Rome, 2009: 35pp.

ABSTRACT

The Seventh Meeting of the MedSudMed Coordination Committee was attended by representatives of the Donor (Italy), delegations from the countries participating in the Project (the Republics of Italy, Libyan Arab Jamahiriya, Malta and Tunisia), Representatives of the GFCM Secretariat, the FAO Technical Backstopping Officer for regional Mediterranean Projects, the FAO Fisheries Resources Officer, an Officer from the FAO AdriaMed Project as well as the Project Coordinator of CopeMed II Project. A brief remind 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 Seventh Meeting of the MedSudMed Coordination Committee

Sliema, Malta 18-19 February 2009

Opening of the meeting and election of the Chairman (Agenda Item N. 1)

1. The Seventh Coordination Committee Meeting of the FAO Regional Project MedSudMed “Assessment and Monitoring of the Fishery Resources and the Ecosystems in the Strait of Sicily” was held in Sliema, Malta, on 18-19 February 2009.
2. The meeting was attended by representatives of the Donor, delegations from the countries participating in the project (the Republics of Italy, Libyan Arab Jamahiriya, Malta and Tunisia), representatives of the General Fisheries Commission for the Mediterranean (GFCM) Secretariat, the FAO Technical Backstopping Officer for Regional Mediterranean Projects, the FAO Fisheries Resources Officer, an Officer from the FAO AdriaMed Project and the Project Coordinator of the CopeMed II Project.
3. Dr Mark Dimech, Director of the Malta Centre for Fisheries Sciences (MCFS) of Malta acted as Chairperson for this meeting. He welcomed all the meeting participants on behalf of the Government of Malta and expressed his honour at having the Committee members gathered in Sliema.
4. Dr Dimech addressed all delegates, recalling the already long history of MedSudMed in the region, and the large array of important activities promoted, organised or supported by the project. During the years in which the project was active in the region, a solid regional cooperation framework was achieved and strengthened; joint research projects and surveys at sea were carried out, numerous technical papers were produced, and all the results should be commended and recognized as outstanding achievements.
5. Dr Dimech then made reference to the last GFCM SAC meetings during which there were discussions on the Regional Projects (RPs) such as MedSudMed, especially on the wish that the information produced by the RPs could be used more intensively for the management of fisheries in the Mediterranean. He highlighted two points: (i) the need to provide information for the implementation of the Ecosystem Approach to Fisheries (EAF), and (ii) the need to perform and provide more joint stock assessments in the project area for the management of fisheries resources. Furthermore, he underlined that the project now has gathered sufficient information to start addressing these two important issues and he expressed the hope that the Committee would give new indications and a more directed orientation to address the fisheries management needs.
6. The FAO Fisheries Management and Conservation Service (FIMF) Fisheries Resources Officer, Ms Tarub Bahri, took the floor and thanked the Maltese authorities for hosting the meeting and welcomed the delegations of the participating countries, as well as those of the Donor, the GFCM and of the other FAO Mediterranean Regional Projects. She mentioned that the presence of representatives from all these other

projects reflected well the importance attached to the cooperation, coordination and synergy among the projects for the benefit of the participating countries.

7. Ms Bahri highlighted the importance of this meeting in the life-cycle of the project. She thanked the Italian Donor for the additional funds provided which set the final extension to June 2010, further highlighting the importance of continuing the promotion of cooperation established within MedSudMed. She recalled that the Mediterranean is currently entirely covered by FAO Regional Projects from west to east. Due of its central position, MedSudMed is at a crossroad and it is important that the scientific cooperation and the results achieved so far be advertised. Several scientific and monitoring activities were carried out or are ongoing within the project framework and new questions to be addressed arise continuously, calling the project to provide answers and support to new challenging topics. Ms Bahri underlined that during the meeting, the activities carried out will be reviewed and the work plan for the future months will be discussed. In this way the needs and priorities of all the participating institutions, who are kindly invited to specify their requirements and formulate proposals for this Coordination Committee meeting will be take into consideration.
8. The representative of the GFCM thanked MedSudMed for the invitation to attend the meeting and the Malta authorities for acting as hosts. He underlined the importance that the GFCM attaches to regional projects like MedSudMed, as it considers that they are essential for the achievement of its goals of improved fisheries management in the Mediterranean. He also underlined that the current international trends on fisheries management, that were adopted by the GFCM, require a wider approach, embodied in the Ecosystem Approach to Fisheries, of which fish stock assessment is a part, still requiring further information of ecological and socio-economic nature. In this context, MedSudMed played an important role since its start, as its main focus has always been on increasing the knowledge base on the ecosystem dimension.
9. The Italian representative thanked the Government of Malta for kindly hosting the meeting and for its excellent organization. He complimented the FAO and the project staff for the outstanding quality of the documents prepared. He underlined that Italy has always actively supported the collaboration among the Mediterranean countries and the reinforcement of regional cooperation encouraged by the project remains fundamental for the issues addressed and the results obtained, the assistance to the national research institutions and the support to the GFCM SAC. He mentioned that the Italian Government continues to support the FAO Regional Projects AdriaMed, EastMed and MedSudMed in the belief that this will further facilitate scientific cooperation in the Mediterranean and bring sizeable benefits to fisheries management in the region. Finally, he recalled that Italy has fully supported the extension of the project as a clear sign of support and trust on its importance for the region.

Adoption of the Agenda (Agenda Item N. 2)

10. The Agenda was presented to the Coordination Committee. The Chair invited the participants to offer any comments. The Agenda was adopted with no changes.

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

11. Ms Bahri introduced this point of the agenda and the document "Report on the Project's Progress", in which the activities carried out by MedSudMed from February 2008 to January 2009 are presented. The described activities address the project's objectives set and are a follow-up to the 5th and 6th Coordination Committee meetings. The attention of the Committee members was drawn to the meeting documents folder which included some documents relative to the presentation of the Project's intersessional activities (February 2008-February 2009).
12. The Committee was informed that, in the context of the project activities on cooperative research programmes and working groups, field work along with on-the-job training were continued for each component of the project. Following the standardization of methodologies used for trawl survey data processing, the project finalized a review on the knowledge currently available in the MedSudMed area on the biology, ecology, reproduction patterns, legislation, management and exploitation trends of *Merluccius merluccius*, *Mullus barbatus*, *Parapenaeus longirostris*, and *Octopus vulgaris*.
13. Furthermore, a workshop was organized to gather scientific evidence on the stock unit(s) of *Octopus vulgaris* and for the planning of activities to investigate whether the populations of this species harvested in each country belong to a single shared stock or not. An extensive research programme on *Octopus vulgaris* was also set up. Assistance for the drafting of a monitoring programme on *Posidonia oceanica* meadows along the Libyan coast was provided as well.
14. Data collection on small pelagic species was also continued and the draft Technical Document "Synthesis on small pelagic fisheries resources in the MedSudMed area" was completed and circulated in the different institutes with the aim to obtain their feedback.
15. It was recalled that the project has encouraged the organization of cooperative surveys at sea with mixed teams on board the research vessels. In this context, a cooperative acoustic survey was conducted along the south Sicilian coast, in Maltese waters and the Libyan coast, along which data and information were collected on several topics. A cooperative ichthyoplankton survey was also conducted along the same areas (south Sicily, Maltees and Libyan waters) to describe the oceanographic characteristics and the composition and spatial distribution of the ichthyoplankton.
16. The regional component of the MedSudMed Fishery and Ecosystem Information System (FEIS) has been taken forward and the spatial query tool was finalized, allowing users to carry out data research on the basis of their area of interest which can be selected manually. FEIS is now available to be accessed and explored by research institutes.

17. Further training opportunities for scientists from the Marine Biology Research Centre (MBRC) in Tajura arose during the above mentioned surveys at sea. Moreover, a training course on the Echoview software, which is used to analyse acoustic data, was organized in cooperation with the AdriaMed Project.
18. In addition to these activities, the project maintained strong links with the other FAO Regional Projects and the GFCM, through the project staff's participation in meetings and the support provided to regional scientists for their participation in the GFCM SAC meetings.
19. The GFCM Aquaculture Officer (former AdriaMed and MedSudMed Project Coordinator) drew the attention of the participants to the large amount and importance of the work and documents produced during this period, and recalled that several of these, in particular the technical manuals and guides published by the project during the last years thanks to the additional financial provision from the Donor, are not only important tools for the fisheries research and management in the region, but also in the Mediterranean as a whole. He stressed the importance of the cooperative activities established among the regional projects AdriaMed, CopeMed II and MedSudMed, which are now a reality, as a way to reinforce their importance and enhance the results that can be achieved with limited budgets.
20. The Libyan delegate on behalf of Mr Essarbout, Director of the MBRC, thanked all the participants and thanked Italy for their support. He also thanked the project staff for the excellent management of the project, without which the close cooperation established would have never been reached. A large amount of data has been collected and many and important cooperation activities have been carried out with excellent results due to the good cooperation among the participants. Although many other projects have been active in the region, few have achieved the level of results obtained under MedSudMed. He stated his institution's interest that these results not be the end, but the start point of a new long-lasting cooperation.
21. The Tunisian delegation thanked Ms Bahri for the excellent presentation, and recalled the objectives of the project at the mention that success is clear when comparing these with the activities carried out. Particular mention was made to the value of the capacity-building exercises and the chances given to Tunisian scientists to take part in important training opportunities as well as in GFCM SAC activities. It was cited that the projects are an essential tool for management of all joint fisheries, especially because they provide countries with a tool for enhancing the cooperation, not only on research, but also on management and at all institutional levels. It was mentioned that a major task that is still pending is the identification of shared stocks, as a first step for joint regional management of these stocks. In this context, reference was made to the Pilot Study on Octopus fishery, and the desire that all countries involved in this matter should agree on common recommendations and regulation for the management of this species, to be proposed to the GFCM, was expressed.

22. The Italian delegation reiterated the Ministry of Agriculture Food and Forestry Policies (MiPAAF)'s full satisfaction for the work carried out by the project, appreciating in particular the level of scientific cooperation achieved in the Central Mediterranean region and the quality and quantity of the technical documents provided.
23. The Donor conveyed their approval and appreciation of the important efforts made by the project during the inter-committee period and commended FAO and the project staff for the high quality of the results achieved. Special reference was made to the importance of standardization of scientific practices and of surveys at sea congregating international teams, during which on-the-job training was conducted on board. They also expressed appreciation for the timely publication of the project's results, both through new Web pages and in terms of technical documents. The Italian Delegation underlined the importance of the successful data collection on the Libyan platform, as the last acoustic data dated back to 1994.
24. The GFCM representative highlighted the work carried out during the intersessional period. He recalled the GFCM approach to manage fisheries through fishing effort control by Operational Units (OU's) and referred to the preliminary work started on OUs targeting *Octopus*, underlining that this could represent an added value to the project activities. He then recalled that the GFCM is developing several regional databases, to be put at the disposal of scientists and information managers and other tools on the Mediterranean. There are currently five regional databases being developed, and the FEIS will be incorporated as one of these.
25. The CopeMed II Project Coordinator thanked the MCFS for hosting the meeting, and the project for the large amount and quality of data and activities presented. He recalled that CopeMed II is closing its first year of operation and reiterated the importance of avoiding interruptions in the project activities, as happened during the transition from CopeMed I to CopeMed II, to the donors, the countries and the GFCM.
26. Many delegates reiterated the importance of further strengthening the scientific cooperation established in the area, with a reference to the large amount of data collected in the project area. It was underlined that stronger efforts should be made to pursue the standardization of methodologies for data collection, including the reinforcement of the cooperation for the organization of joint surveys.

Project Future Implementation (Agenda Item N. 4)

27. The document "Project Future Implementation" that refers to the next period (March 2009 to June 2010), was introduced by the FAO Fisheries Resources Officer. The meeting was informed that the project will be the subject to an FAO internal technical review, in which the national counterparts will be involved for feedback, and the results of which will be included in a Project Document to be submitted to the Donor for possible funding of the further development of the MedSudMed Project.

28. During the coming period and in collaboration with the participating institutions, the project will focus its attention on research activities, the filling of scientific gaps, finalization of pending publications, as well as on the training component.
29. The priorities of the project's scientific activities for the coming months were summarized and discussed.
30. Where the demersal fishery resources component is concerned, the project will continue to support the organization and execution of standardized trawl surveys at sea, with particular attention to areas that are currently not covered by regular programmes; and including support to national trawl surveys.
31. Furthermore, the project will continue the actions already begun concerning the multidisciplinary monitoring and research activities on *Octopus vulgaris*. An activity on *Parapenaeus longirostris* could be undertaken by using existing information and data for carrying out a joint stock assessment in cooperation with other FAO Regional Projects.
32. As for the previous year, efforts will be made to continue to process the collected trawl survey data in order to describe spatial distribution and location of the areas of major concentration of juveniles and mature females for species belonging to the target species list that was identified by the regional experts (*Mullus surmuletus*, *Trachurus trachurus*, *Pagellus erythrinus*, *Helicolenus dactylopterus*, *Parapenaeus longirostris*, *Aristaeomorpha foliacea*, *Nephrops norvegicus*, *Eledone cirrhosa*, *Sepia officinalis*, *Octopus vulgaris*, *Raja clavata*).
33. For small pelagic species, the project will further support the organization and execution of standardized acoustic and ichthyoplankton surveys. The further standardization of the scientific methodological approach and tools utilized for data processing will also be supported.
34. Building national capacity in terms of expertise is also a priority for the project. In this context, the following activities are planned: the continuation of on-the-job training during the surveys at sea; the organization of *ad hoc* training programmes upon request from the participating institutes; training on fisheries acoustics; training on otolith reading (which could be jointly organized with the AdriaMed Project).
35. Moreover, the project may support the participating institutes for capacity building on particular topics such as: monitoring plans on *Posidonia* meadows; monitoring plans on marine sponges; taxonomy of chondrichthyes fish; genetic studies; species identification of eggs and larvae; and growth of crustaceans.
36. In terms of the optimization of technology, the project will make use of VOIP and other Internet based tools for communications as far as possible. The Web pages will be updated and a link will be set up to the document repository of the other Mediterranean Regional Projects in order to facilitate the circulation of scientific knowledge on fisheries in the Mediterranean.
37. The Delegates expressed their hope that the project, in collaboration with the participating institutions, will succeed in focusing the attention on the support of

research activities, the filling of the remaining gaps and finalise the pending publications. The importance of strengthening and supporting the organization and conduction of standardized trawl surveys at sea was stressed, with particular attention to areas that are not currently covered by national programmes.

38. The need of strengthening the participation of younger scientists, who can thus benefit from training by experts, was referred. The wish for further synchrony with the new CopeMed II project was also stated.
39. The importance of standardization was recalled by the Committee who agreed on the necessity to continue the work that was undertaken in the past within MedSudMed. There was a general agreement that protocols by themselves are insufficient and that practical work on the application of the protocols would be of high relevance, both for trawl surveys and for acoustic surveys. It was agreed to organize a 3/4-day joint exercise during surveys at sea involving scientists from several countries to illustrate the protocol agreed upon at sub-regional level and to provide on-the-job training and demonstration on the use of the equipment. As regards the acoustic and ichthyoplankton surveys, it was agreed to continue promoting international teams on board the research vessels.
40. There was a general agreement on the importance of carrying out common surveys at sea (trawl, oceanography, ichthyoplankton, acoustics) covering the whole project area. Even though the organization of such activities cannot be considered at present within the project, mainly due to budget limitations and protocol discrepancies, it was decided to closely follow the discussions held within the GFCM on the standardization of protocols of surveys at sea, hoping that one of the outcomes be the possibility of carrying out regional surveys at sea that include the MedSudMed Project area. It was also suggested to raise the problem of funding the surveys during the next GFCM session.
41. The representative of the Institute for Coastal Marine Environment of the National Research Centre (IAMC-CNR) reminded that Italy and Malta are involved in the MEDIAS (MEDiterranean Acoustic Surveys) initiative and participate in the drafting of a protocol which does not differ much from the one applied during the survey in Libya or the one used by the National Institute of Marine Sciences and Technology (INSTM) in Tunisia. However, he recognized that the adoption of a common protocol at regional level is not an easy task.
42. The Tunisian representative recalled that the use of common protocols should be favoured when shared stocks of demersals and/or small pelagic fishery resources are concerned. Countries should be able to apply the protocols used so far to establish time series on local or coastal species and for which the sharing of information is less crucial. Therefore, he suggested focusing on standardization or inter-calibration efforts when it comes to shared stocks.
43. As regards inter-calibration exercises, it was recalled that, in the past, the project made several attempts to carry out inter-calibration of trawl surveys and acoustic surveys without success due to the difficulty of harmonizing the calendars of the research vessels. A successful inter-calibration exercise would require the mobilization of human and equipment resources that the project is currently not able to afford.

44. The importance of the activities on *Octopus vulgaris* carried out in Tunisia was highlighted. The importance of pooling together information on this species from similar studies carried out in other countries, as well as the possibility to carry out a genetic study to identify population units in the MedSudMed area, were discussed.
45. Further to the referred issue (44), the meeting was reminded of the outcomes of the workshop on octopus stocks and related fisheries in the MedSudMed Project area (Salammbô, Tunisia, 18-20 November 2008) in terms of differences and similarities of biological features and exploitation among countries in the project area. The Committee was informed that a draft work plan for the identification of possible shared octopus stocks in the MedSudMed area that includes a genetic comparison of samples from specific areas was prepared during the workshop. On the basis of the discussions held, the Committee decided to adopt the work plan drafted during the workshop.
46. The Committee acknowledged the importance of carrying out a specific activity on *Parapenaeus longirostris*. The possibility that the project would provide support to the assessment of this species in collaboration with the CopeMed II Project was discussed. The Committee was reminded on the possibility for all the Regional Projects to present stock assessment information to the GFCM either through the participation in the SCSA WG, or directly during the SAC SubCommittee meeting. The importance of a subregional or national data compilation and gaps identification for a stock assessment exercise in cooperation with the CopeMed II participating countries was also recalled. The Committee was also informed that, due to the spatial distribution of this species, data on *P. longirostris* are not available in all the MedSudMed participating countries. Nonetheless, the importance of gathering representatives from all countries in a joint stock assessment meeting was pointed out, as it could provide a good opportunity for national experts to familiarize with the basic standardization procedures and with the standard format adopted by the GFCM SAC.
47. After the discussion, it was agreed that the MedSudMed Project should prepare the Terms of References for a preparatory meeting to verify the data availability at national level and to standardize these data in order to assess the feasibility of a joint stock assessment. It was agreed that the ToRs should be made available during the CopeMed II Coordination Committee meeting (May 2009), in order to possibly include the countries participating in the CopeMed II Project in this exercise.
48. A discussion was raised on the relevance of the identification of Essential Fish Habitat (EFH) for fisheries management advice. It was recalled that the investigation of EFH is considered as one of the particular activities of the MedSudMed Project and that the identification of EFH can be achieved only by putting together baseline information on life cycle and spatial distribution of the fisheries resources, environmental factors and bottom types. A valuable amount of information was produced by the project over the last few years. The meeting was reminded of the Pilot Study carried out in GSA 15 some years ago and which consisted in overlaying different types of geo-referenced information (fisheries resources, environment, fishing activities and sediments) that can be the baseline for the identification of EFH. The project also produced a series of bibliographic reviews synthesizing the published information. It was agreed that the project should continue in the same direction. The available information on spawning

and nursery areas of studied species should be complemented with biotic and abiotic environmental information that is available in the bibliography or in datasets from the institutes involved in the project.

49. The representative of the GFCM reiterated the importance to collect all the information related to fisheries (socioeconomic, vessels, gears, etc.) during every research activity carried out for fisheries resources. Reference was then made to the importance of collecting data according to the Operational Units concept. He informed the meeting that the GFCM Task 1 is ongoing and that the GFCM Task 1 Statistical Bulletin is updated frequently.
50. The delegates discussed the relevance of FEIS and the current status of this application. The Committee was informed that the regional component of the FEIS had been finalized and that it is currently available on the project's Web site at <http://www.faomedsudmed.org/feis/map04.htm>. The application includes geo-referenced metadata describing the data available in the research institutes who provided the information (in the project area). The Committee underlined the importance of having data from other areas in the system, such as the Adriatic Sea (metadata from the AdriaMed trawl surveys are already included) and the CopeMed II area.
51. The representative of the GFCM, reiterating the importance for the project of having such a tool for an inventory of existing data in the Mediterranean, recalled the suggestion that was made at the 2007 SAC SubCommittee meeting on Statistics and Information (SCSI) (Kavala, Greece, 17-20 September 2007) and that was agreed upon during the Coordination Meeting of the SubCommittees in March 2008 (Rome, Italy), to have the FEIS under the GFCM auspices. He also expressed the wish that countries supported by the CopeMed II Project should contribute to the FEIS. Further to some discussions the Committee agreed that the project would provide adequate support for the technical handover of the application to the GFCM (to be made available on the GFCM Web site).
52. In relation to the project network, the usefulness of improving contacts between institutes using recent communications technology (i.e. VOIP, teleconferencing, etc.) was reiterated although reference was made to the difficulty that can derive from the different IT resources available in the countries. The meeting was also informed that new Country Fishery Information will be made available on MedSudMed Web site summarizing the main important fisheries indicators for each country.
53. The project was reminded by the representative of the GFCM Secretariat of the importance to provide the GFCM Secretariat with the different survey protocols adopted. This would contribute to the finalization of the GFCM regional survey protocol, as discussed during the last SubCommittee on Stock Assessment that was held in Antalya, Turkey, (October 2008). The project was also encouraged to continue the contribution to the SAC for the improvement of knowledge on biology, stock structure and other biological parameters that are essential for stock assessment. The need of continuing to support the countries in attending the GFCM Subsidiary bodies meetings was also reiterated.

54. Finally, the Committee discussed the work plan presented and gave the mandate to the project, in cooperation with the research institutes, for the implementation of the activities as were presented in the document.
55. The participants agreed upon the training activities proposed in the work plan. They were informed that joint training courses would be organized in cooperation with the other Mediterranean Regional Projects on the basis of common requests made by the participating countries. A proposal was then made with the agreement of the Committee for the organization of a training course on geostatistics applied to acoustic data. On this regard, the cooperation of experts from the area covered by the AdriaMed Project is sought.
56. Furthermore, cooperation will be sought with the other Mediterranean Regional Projects on topics of common interest. In particular, the delegates underlined the importance of strengthening the cooperation with CopeMed II and encouraged the latter to provide support to activities that could be implemented jointly by the two projects.
57. After thorough discussions on the content of Document CC/07/03, the Committee agreed on the programme of activities proposed for the coming period including the suggestions made by the participants. Terms of Reference (ToRs) will be detailed for the activities indicated. The activities will be carried out subject to budget availability. It was stressed that the full achievement of the results would depend on the involvement of the research institutions. In particular, the Committee stressed the importance of the following activities:
- Organization of a 3-4 day on-the-job training session during a common exercise within a trawl survey using the MEDITS protocol;
 - Preparation of a detailed proposal on the comparison of the genetic structure of *Octopus vulgaris* populations between different zones of the project area;
 - Continue to support the multidisciplinary monitoring and research activity on *Octopus vulgaris* carried out by the INSTM;
 - Continue the analysis of survey data for the identification of spawning and nursery areas of *Octopus vulgaris* and ad hoc data collection;
 - Organize a preliminary meeting to take stock of data available on *Parapenaeus longirostris* and draft the ToRs for a stock assessment workshop;
 - Organization of the processing of samples and data collected during the 2008 acoustic, ichthyoplankton and oceanographic surveys;
 - Processing of acoustic data for description of the spatial distribution of the main species of small pelagic fish;
 - Complete the description of the spatial distribution of the target demersal species in terms of spawning and nursery areas;
 - Produce a synthesis on the existing data and information on eggs and larvae at subregional scale and produce an overview document on the retention and concentration areas;
 - Finalization of survey reports for possible publication.

- Organization of ad hoc training courses and capacity building, possibly jointly with the other Regional Projects AdriaMed and CopeMed II;
- Hand-over of the FEIS to the GFCM and promote the use of FEIS in the project area;
- Finalize and publish the pending MedSudMed Technical Documents.

Other matters (Agenda item N. 5)

58. The Committee was reminded by the GFCM representative that the Commission will move to its new headquarters in Rome and recalled the countries to take into consideration the invitation, already expressed in the past, to host the regional projects, at least those based in Rome like MedSudMed, at the GFCM new premises.
59. The delegates and meeting participants expressed their thanks to the Maltese authorities for having hosted the meeting in Sliema.
60. Further to the kind invitation of the Libyan delegation, the next meeting of the MedSudMed Coordination Committee will be held in Libya; the date and venue will be proposed in due time by the project. This suggestion was welcomed by the Meeting participants.

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Annotated Agenda

1. Opening of the meeting and election of Chairman

2. Adoption of the Agenda

3. Report on the Project's progress

An overview of the main Project activities performed and the outputs achieved during the intersession period will be given to the Committee, with special consideration to some meaningful results. The internal technical review of the Project will also be presented and discussed.

4. Project future implementation

The programme of the ongoing and scheduled activities for the next period will be dealt with, as well as possible future strategy and development of the Project.

5. Other matters

List of Documents

FAO-MedSudMed: CC7/01	Provisional agenda and timetable
FAO-MedSudMed: CC7/02	Report on Project's Progress (February 2008 –January 2009)
FAO-MedSudMed: CC7/03	Development of the Project's Programme
FAO-MedSudMed: CC7/Inf.01	List of Documents
FAO-MedSudMed: CC7/Inf.02	Provisional list of participants
FAO-MedSudMed: CC7/Inf.03	Report of the Sixth Meeting of the Coordination Committee. <i>MedSudMed Technical Documents N. 20.</i>
FAO-MedSudMed: CC7/Inf.04	Hydroacoustic data processing for standard stock assessment using Echoview: Technical manual <i>MedSudMed Technical Documents N.23</i> (draft)
FAO-MedSudMed: CC7/Inf.05	Report of the MedSudMed workshop on octopus stocks and related fisheries in the MedSudMed Project area (Salammbô, Tunisia, 18-20 November 2008). <i>MedSudMed Technical Documents N.22</i>
FAO-MedSudMed: CC7/Inf.06	Rapport préliminaire de l'INSTM sur le Projet de Recherche sur l'exploitation du poulpe commun <i>Octopus vulgaris</i> dans la région Sud Tunisienne et la région de Lampedusa Italienne (Méditerranée centrale)
FAO-MedSudMed: CC7/Inf.07	Report of the MSM Libya 2008 Acoustic Survey - Libyan continental shelf (14 August – 07 September 2008)
FAO-MedSudMed: CC7/Inf.08	Report of the MedSudMed-08 Oceanographic Survey - Strait of Sicily, Libyan continental shelf (15 – 31 August 2008)
FAO-MedSudMed: CC7/Inf.09	Report of the MedSudMed-06 Oceanographic Survey - Strait of Sicily, Libyan continental shelf (12 – 24 August 2006)
FAO-MedSudMed: CC7/Inf.10	Monitoring Master on <i>Posidonia oceanica</i> meadows along the Libyan coast
FAO-MedSudMed: CC7/Inf.11	Fishery and Ecosystem Information System FEIS: update on the regional metadatabase version
FAO-MedSudMed: CC7/Inf.12	List of the MedSudMed technical publications
FAO-MedSudMed: CC7/Inf.13	Field manual on macroscopic identification of maturity stages for the Mediterranean fishery resources. <i>MedSudMed Technical Documents N.21</i> (advance copy)

FAO-MedSudMed: CC7/Inf.14	Preliminary results on spatial distribution of biomass indices, nursery and spawning areas of <i>Merluccius merluccius</i> and <i>Mullus barbatus</i> in the Central Mediterranean. <i>MedSudMed Technical Documents N.19</i> (advance copy)
FAO-MedSudMed: CC7/Inf.15	Contribution to guidelines for Chondrohichtyes fish age reading in the Mediterranean Sea (application to selected species). <i>MedSudMed Technical Documents N.8</i>
FAO-MedSudMed: CC7/Inf.16	Bibliographic synthesis and review of information on some target species in the MedSudMed Project area (Central Mediterranean). <i>MedSudMed Technical Documents N.15</i> (advance copy)

Report on Project's Progress (March 2008 – January 2009)

Introduction

This paper provides an overview of the latest activities carried out by the MedSudMed Project between February 2008 and January 2009. 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 programme of work was fine-tuned during the successive Coordination Committee meetings (Salammbô, Tunisia, February 2004; Tajura, Libya, February 2005; St Julians, Malta, February 2006, Rome, Italy, November 2006, Salammbô, Tunisia, February 2008).

The 5th session of the FAO MedSudMed Coordination Committee, (GCP/RER/010/ITA/MSM-TD 12), reviewed the achievements and outputs of the Project and examined the conclusions and recommendations of the internal technical review. The internal technical review synthesized the scientific activities of the Project, assessed the relevance, effectiveness and progress of the Project and provided recommendations on the further steps to consolidate the results and ensure the successful completion of the Project's activities and the fulfillment of its objectives.

During the 6th meeting of the MedSudMed Coordination Committee, Salammbô (Tunisia), 4-5 February 2008, (GCP/RER/010/ITA/MSM-TD 20), document CC7/Info03 refers), the current Italian donor (Ministry of Agriculture, Food and Forestry Policies, MiPAAF), reiterated its financial support for the Project thus extending the project activities until June 2009, providing additional funds for the finalization and publication of pending technical documents. Moreover, the Donor requested that a proposal be submitted for a Project Document describing a second phase of the Project and informed FAO that supplementary funds would be made available for an extension until June 2010.

The activities during the inter-committee period represent the follow-up to the 5th and the 6th Coordination Committee meetings and were carried out with the support of the research institutions of the different countries and the regional experts.

This report details the main outputs of the Project activities and the results achieved within the components on demersal fisheries resources and small pelagic fisheries resources for the following topics:

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

The Project organized technical meetings, supported regional experts' travels and answered specific requests from the participating institutes, in particular regarding training activities.

1. Cooperative research programmes and Working Groups

In 2008, the Project implemented a series of activities dealing with field work and data processing methodology. During the intersessional 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.

1.1. MedSudMed Component on Demersal Resources

As a result of the great collaborative effort of the institutes participating in MedSudMed, standardization of methodologies used for trawl survey data processing was improved in recent years. During the last period, the work carried out within this Project component focused mainly on data analysis, finalisation of technical reports on the results obtained and production of a synthesis regarding species of interest in the Project area.

The Project finalized a review of the knowledge currently available on the biology, ecology, reproduction patterns, legislation, management and exploitation trends of *Merluccius merluccius*, *Mullus barbatus*, *Parapenaeus longirostris*, and *Octopus vulgaris* in the MedSudMed area. The review was circulated to collect inputs from the participating institutes. (CC7/Info 16 refers)

A workshop was organized on octopus stocks and related fisheries in the MedSudMed Project area. It was held on 18-20 November 2008 in Salammbô, Tunisia, hosted by the Institut National des Sciences et Technologies de la Mer (INSTM). The overall scope of the workshop was to gather scientific evidence on the stock unit(s) of *Octopus vulgaris* and plan activities to investigate whether the populations of this species harvested in each country belong to a shared stock or not. Information was also collected to identify the fishing segments targeting this species in the Project area (CC7/Info 05 refers).

A research programme including three main tasks regarding *Octopus vulgaris* was started in cooperation with INSTM in the southern part of Tunisia to: i) compile information on the biology and ecology of the species; ii) carry out genetic studies aiming at identifying possible subpopulations of the area; and iii) collect socio-economic data describing the Operational Unit related to *Octopus vulgaris* (CC7/Info 06 refers).

Assistance was provided for the drafting of a monitoring programme on *Posidonia oceanica* meadows along the Libyan coast. The overall objective of the activities proposed in the monitoring programme is to assess the spatial distribution of the *Posidonia* meadows, which are sensitive habitats for larvae and juveniles of fishery resources. This activity was carried out in collaboration with the Marine Biology Research Centre of Tajura (MBRC), Libya (CC7/Info 10 refers).

Results obtained by the MedSudMed Project were presented at the workshop “The Use of Geographic Information System in Fisheries Management”, Tunis (Tunisia), 07-11 July 2008, that was organized by the FAO Regional Office for the Near East and the INSTM of Salammbô (Tunisia). A scientist from the Istituto Ambiente Marino Costiero (IAMC-CNR) gave a presentation and was involved in the preparation and supervision of the practical exercises given to the trainees to illustrate the course.

1.2. MedSudMed Component on Small Pelagic fish

Efforts were made by the Project in collecting data in areas where existing information was rather limited in order to provide an overview of the spatial distribution of the stocks and allow the 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, during which on-the-job training was provided.

The technical document **“Synthesis on small pelagic fisheries resources in the MedSudMed area”** was drafted on the basis of available information at the relevant national research institutes and organisations of each country participating in the Project. It summarizes the current knowledge on ecology, population dynamics and stock assessment of *Sardina pilchardus*, *Engraulis encrasicolus* and *Sardinella aurita*. The review also lists the data sets currently available in the Project area, as well as the ongoing research, and monitoring activities related to small pelagic fish and the current fisheries legislation applied in the different countries. So far, information from Italy and Malta has been gathered and included in the document.

As for the previous year, the Project encouraged the organisation of cooperative surveys at sea with mixed teams on board the research vessels and during which, in addition to collecting data, on-the-job training was provided:

Cooperative acoustic survey (R/V “Dalla Porta” 14 August-07 September 2008) was conducted along the South Sicilian coast, in Maltese waters and along the Libyan coast on board R/V “Dallaporta” in cooperation with the Istituto Ambiente Marino Costiero (IAMC-CNR) and the Marine Biology Research Centre of Tajura, Libya (MBRC). 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. On-the-job training was provided on-board on these different topics. The objective of this survey was to continue collecting acoustic data in the Maltese waters, thus complementing the series started in 2003. In addition, data were collected on the Libyan platform along the whole coast, hence updating the information available in the area, as the last acoustic data dated back to 1994 (LibFish Project) (CC7/Info 07 refers). The survey covered also the Maltese waters thanks to the cooperation of the Malta Centre for Fisheries Sciences (MCFS)

A cooperative ichthyoplankton survey (R/V “Urania”, 15-31 July 2008) was conducted along the South Sicilian coast, in Maltese waters and in Libyan waters (Gulf of Sirt) in cooperation with the IAMC-CNR and the MBRC. The survey represents a follow-up to the oceanographic and ichthyoplankton survey carried out in 2006 in the Western part of Libya. The objective was to describe the oceanographic characteristics of the area and the composition and spatial distribution of the ichthyoplankton, hence complementing information on transport patterns of eggs and larvae of commercial fish species in the project area. (CC7/Info 08 refers). Data were also collected in the Maltese waters in collaboration with the MCFS/

1.3. Fishery and Ecosystem Information System (FEIS)

The regional component of the MedSudMed Fishery and Ecosystem Information System (FEIS) has been finalized in particular regarding the web interface (CC7/Info 11 refers).

During the recent period, the spatial query tool was finalized, allowing users to carry out data research on the basis of their area of interest that can be selected manually. As recommended during the last Coordination Committee meetings, technical arrangements were made for the publication of the FEIS on a web-based platform.

Following the suggestion formulated during the GFCM SAC Sub-Committee on Statistics and Information (SCSI) (Kavala, Greece, 16-21 September 2007) that the system could be adopted on a wider geographical scale and put at the disposal of all the national and regional scientific institutions of the GFCM, the Project further developed the regional component of FEIS. Moreover, the SAC-SCSI proposed that further development of FEIS through testing/implementing in other sub-regions with a vision to develop the system at regional level would be carried out under the responsibility of the GFCM. The regional component of FEIS now includes geo-referenced metadata describing the data available in the Institutes that provided information. Metadata on the data entered in the AdriaMed Trawl Information System (ATrIS) were also incorporated into the FEIS.

2. National Capacity building and training

During this period, much effort was dedicated to the organization of training courses, mainly upon request of the participating institutes. The courses were an occasion to strengthen scientific collaboration between institutes, as most of them involved scientists belonging to the network that has been created and consolidated by the Project during recent years. Moreover, some of the training courses allowed for joint processing of data collected at sea and aimed not only at capacity building but also at producing scientific information directly related to the Project activities. The following courses were organized during the last inter-committee period:

- **Training on the software “Echoview” (Ancona, Italy 12-14 May 2008).** In cooperation with the AdriaMed Project, the Project organized a training course on the Echoview software, which is used to analyse acoustic data. The training course was held at the CNR - ISMAR, Ancona, 12-14 May 2008. Scientists from the INSTM, IAMC-CNR, Institute of Oceanography and Fisheries of Split (Croatia) and Institute of Marine Science of Ancona (CNR-ISMAR, Italy) were trained for the use and analysis of acoustic data. A manual on the use of the software was produced after the training course (CC7/Info 04 refers).
- **On-the-job training** was carried out during the surveys at sea for scientists from the MBRC. Scientists were trained on: measurement of physical-chemical parameters of the water column with a multiparametric probe; collection of current profiles with ADCP (Acoustic Doppler Current Profiler); zooplankton sampling with Bongo40 net; collection of sediments samples with a box corer; water sampling with Niskin bottles; collection of acoustic data related to small pelagic fish using a split beam transducer at 38, 120 and 200 kHz; biological sampling of small pelagic fish using a pelagic trawl and processing of samples for the collection of biological information of small pelagic fish.

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:

In order to strengthen international and regional cooperation, the Project maintained close interaction with the FAO Regional Project AdriaMed on information technology and Web site-building, as well as other technical issues. In addition the project continued to provide technical advice to the AdriaMed Coordination team on echosurvey in the Adriatic Sea, established in 2007, during the training session held in Ancona 15-17 May 2008 at the CNR-ISMAR. During this training session, a step-by-step comparison of the methodologies used by the Institute for Oceanography and Fisheries of Split (IOF) and the CNR-ISMAR of Ancona was carried out, in order to proceed towards the standardization of acoustic surveys protocols at sub-regional level. Moreover the Project participated at the AdriaMed Working Group on small pelagic fish, Kotor (Montenegro) (16-20 June 2008) and at the AdriaMed Coordination Committee meeting (Chioggia, Italy, 26-27 January 2009).

An outline of the MedSudMed activities was presented at the CopeMed II Inception meeting, (Malaga, Spain, 12-13 June 2008) with the view of establishing cooperation between the two projects. In addition, due to the overlap in the geographical areas covered by MedSudMed and CopeMed II, it was agreed to coordinate the participation of national scientists in meetings organized by the GFCM, in order to optimize the use of human and financial resources.

A presentation was given on the FAO Regional Projects in the Mediterranean at the workshop organized by the Profet Policy Project (Marseille, France, 12-13 June 2008). This initiative is funded by the European Commission within the Sixth Framework Programme and aims at delivering information to aquaculture and fisheries stakeholders on the European policies and research efforts that affect their sectors.

Cooperation was further sustained with the GFCM Secretariat and the GFCM Subsidiary bodies. MedSudMed continued to support the activities of the GFCM by funding the participation of 10 experts in the GFCM meetings held in the intersessional period:

- GFCM – Scientific Advisory Committee – Second Working Group on Stock Assessment Methodologies, on basic methods and protocols to undertake assessments with direct methods, Libyan Arab Jamahiriya, 2-4 June 2008;
- GFCM – Scientific Advisory Committee – SCSA Training courses on methodologies for Stock Assessment, El Cairo (Egypt) 22-26 June 2008;
- GFCM – Scientific Advisory Committee – SCSA/SCCESS/SCSA Workshop to refine the fleet segmentation (back to back with the SCSA), Antalya, Turkey 13 - 16 October 2008;

- GFCM – Scientific Advisory Committee – SCESS/SCSA Working Group on Recreational Fisheries (back to back to the SCESS session), Antalya, Turkey 13 - 16 October 2008;
- GFCM – Scientific Advisory Committee – Sub-Committees meetings, Antalya, Turkey 13 - 16 October 2008;
- GFCM – Scientific Advisory Committee – 11th session (Marrakech, Morocco 1-5 December 2008).

4. Project Communication

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

Since its publication, the Project's website has been updated. A new home page has been created, including a general description of the MedSudMed Project, information on the recent or forthcoming events organized by the Project, the possibility to download the documents released by the Project as well as links to the Research Institutes participating in the MedSudMed Project, the Mediterranean Regional Projects or to sites regarding GIS, databanks and Research Bodies.

Sub-regional maps on sea temperature, salinity and total velocity climatological fields for the Central Mediterranean were produced in cooperation with the University of Malta (International Ocean Institute – Malta Operational Centre) and were published on the Project's web site. The climatological fields were calculated in the form of monthly and seasonal averages from the output of a numerical model run over a period of five years (2000-2004). Maps were generated at different depths and are relevant in areas where no or little information is available to provide an overview of the oceanographic characteristics of the area.

Over the last year, 750 pages were visited on average each month and around 1000 documents are downloaded from the site each month. Visits come mainly from North America (66%) and Europe (29%) while connections from Africa are equivalent to 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 is included in the ASFA database.

The following technical documents were drafted or finalized as advance copies during the intersessional period:

1. Ungaro N. 2008. Field manual on macroscopic identification of maturity stages for the Mediterranean fishery resources. GCP/RER/ITA/MSM-TD-21. *MedSudMed Technical Documents*, 21: 42 pp. (*advance copy available*) (CC7/Info 13 refers)
2. MedSudMed. 2008. Bibliographic synthesis and review of information on some demersal target species in the MedSudMed area (Central Mediterranean).

- GCP/RER/010/ITA/MSM-TD-15. *MedSudMed Technical Documents*, 15: 69pp. (*advance copy available*) (CC7/Info 16 refers).
3. MedSudMed. 2008. 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-19. *MedSudMed Technical Documents*, 19: 24pp. (*advance copy available*) (CC7/Info 14 refers).
 4. MedSudMed. 2006. Report of the Workshop on Standardisation of Fish Age Determination Based on Otolith Samples in the MedSudMed Area. GCP/RER/010/ITA/MSM-TD-09. *MedSudMed Technical Documents*, 9: 52pp. (*advance copy available*).
 5. MedSudMed. 2008. Spatial pattern of fisheries demersal resources, environmental factors and fishery activities in GSA 15. GCP/RER/010/ITA/MSM-TD-13. *MedSudMed Technical Documents*, 13: 105pp. (*advance copy available*).
 6. MedSudMed. 2008. Sea temperature, salinity and total velocity climatological fields for the Central Mediterranean. GCP/RER/010/ITA/MSM-TD-14. *MedSudMed Technical Documents*, 14: 34pp. (*advance copy available*).
 7. MedSudMed. Report of the Workshop on octopus stocks and related fisheries in the MedSudMed Project area (Salammbô, Tunisia, 18-20 November 2008). GCP/RER/ITA/MSM-TD-22. *MedSudMed Technical Documents*, (*in preparation*) (CC7/Info 05 refers).

Development of the Project's Programme

Introduction

The aim of this paper is to provide the Coordination Committee (CC) members with information for the discussion of the MedSudMed Project work programme for the coming period. During the next period the Project will finalize current activities, taking into account the recommendations of the previous Coordination Committee meeting(s). The programme of work presented in this document refers to the interval from March 2009 to June 2010. At the moment of the preparation of this document the end of Project is set for June 2010, thanks to the additional funds provided by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF). The implementation of this work programme will also take due account of the recommendations of this Coordination Committee meeting.

An internal technical review will be carried out in consultation with the participating Countries who will be given the chance to provide their input in the summary of the activities carried out so far and those that should be considered as a priority in the future and which could be included in a Project Document to be submitted to the Donor for possible funding of the further development of the MedSudMed Project. The internal technical review and the proposal of a Project Document are to be completed by July 2009.

The information presented herein should put the Committee in a position to give advice to the Project on the activities to be finalized on the basis of the methodological framework that was discussed during the previous years. The first Coordination Committee meeting (19-20 September 2002, Rome, Italy) (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.

For the coming period the Project, in collaboration with the participating institutions, will focus its attention on research activities, the filling of scientific gaps, the finalization of pending publications, as well as the training component, as indicated during the last CC meeting held in Tunisia (4-5 February 2008, Salammbô) (GCP/RER/010/ITA/MedSudMed-TD20). 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 this work plan overlap with those of the previous programme of work, as they were initiated during the intersessional period and are currently in progress. The implementation of the activities proposed is contingent upon the Project's budget availability.

a) Standardization of methodology

During the course of the Project, much effort was made by MedSudMed and the research institutes to achieve standardization of sampling designs and protocols used in the different survey programmes. As a result, common protocols started to be used for field work (trawl surveys, echo-surveys) and whenever possible for the data processing methods. In the near future, work should continue on standardization of laboratory work and processing of samples collected at sea. Where data processing is concerned (statistical analysis, mapping procedures...), previous experience shows that it is a continuous process. On the basis of the network that the Project contributed to building up, exchanges between regional experts should be favoured, so that they continue interacting while processing data and producing scientific results.

In particular, the Project will undertake or continue the activities listed below per Project Component.

Demersal resources

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

- The Project will continue supporting the organization and conduction of standardized trawl surveys at sea, with particular attention to areas that are currently not covered by regular programmes. Upon request of the participating Institutes, the Project will provide support to the implementation of national trawl surveys programme for the collection of new data. As far as possible, the implementation of such programs will be implemented with the technical support of the scientists of the regional network, in order to favour the exchange of knowledge and information.

- Wherever data and samples processing is undertaken, the Project will support initiatives aiming at tuning common data and samples processing methods for the production of comparable results on a regional scale, in particular regarding the data on *Octopus vulgaris*, and samples collected for genetic studies.

Small pelagic fish

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

- The Project, in cooperation with the participating institutes, will continue supporting the organization and conduction of standardized acoustic and ichthyoplankton surveys, with particular attention to areas that are currently not covered by regular programmes, upon request of the participating Institutes.
- Wherever possible, calendars of acoustic and ichthyoplankton surveys at sea carried out by the different participating institutes should be coordinated in order to maximize the coverage and minimize the time lag between surveys conducted by the different vessels. The protocol for the additional transects/samples to be performed in order to fill the remaining gaps should be discussed.
- Further standardization of the scientific methodological approach and tools utilized for data processing. This issue was discussed during an *ad hoc* meeting and participants agreed on a common approach to produce estimates of biomass spatial distribution per species, however, all data sets available (GSA 12, 13, 14, 15 and 16) were not yet processed entirely and there is a need to test the methods on real data sets and evaluate whether it is appropriate and suitable to all GSAs.
- The cooperation with the AdriaMed Project will be reinforced so as to ensure the use of same protocols and approaches in the areas covered by the two Projects. Moreover, the progress of the MEDIAS initiative will be monitored.

b) Increasing scientific knowledge

For the coming period the Project will concentrate on supporting the regional network of scientists for the analysis of available data and information, following indications and terms of reference already provided during past periods. The cooperative research activities described are intended not only in terms of field research, but also as studies and reviews implemented by the Project. The activities proposed for the coming period are summarized below per Project Component.

Demersal fisheries resources

The Project will continue providing support to the data processing initiated during the previous periods and to the finalization of scientific documents dealing with the following topics:

- The multidisciplinary monitoring and research activity on *Octopus vulgaris* undertaken in cooperation with the Institut National des Sciences et Technologies de la Mer (INSTM) will continue;

- An activity on *Parapenaeus longirostris* could be undertaken so as to synthesize biological, ecological information on this species and carry out joint stock assessment in cooperation with the CopeMed II Project;
- The Project may support data collection and processing to complement the Pilot Study carried out in GSA 15 with socio-economic information and knowledge related to the characteristics of the sea bottom in order to better describe the critical areas that were located in this study.
- A sub-regional map on bottom types could be produced on the basis of existing data and information in the different Institutes. This would provide baseline information for the identification of Essential Fish Habitats (EFH) of commercial species;
- The effect of fishing pressure on growth parameters of commercial species could be studied, in particular growth studies in areas undergoing different fishing pressure (red mullet could be taken as an example)
- As for the previous year, effort will be made to process trawl survey data in order to describe spatial distribution and location of the areas of major concentration of juveniles and mature females for those target species that were identified by the regional experts: *Mullus surmuletus*, *Trachurus trachurus*, *Pagellus erythrinus*, *Helicolenus dactylopterus*, *Parapenaeus longirostris*, *Aristaeomorpha foliacea*, *Nephrops norvegicus*, *Eledone cirrhosa*, *Sepia officinalis*, *Octopus vulgaris*, *Raja clavata*. This could be done in the framework of a workshop hosted by one of the participating institutes. Species will be chosen according to data availability.

Small pelagic fishery resources

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

- The remaining samples and data collected during the survey at sea carried out on board R/V Urania and R/V Dallaporta will be processed and results will be integrated into the survey reports.
- A synthesis of existing data and information on ichthyoplankton will be carried out and the possibility of mapping the concentration and retention areas at sub-regional level will be explored.
- A synthesis of existing data and information on small pelagic fish biomass will be carried out and the possibility to produce sub-regional maps of spatial distribution of for the main species of small pelagic fish will be explored.

Technical Documents

The Project will finalize and publish the remaining pending technical documents so as to promote the cooperative work carried out by the Institutes that participated in the Project activities so far.

c) Building national capacity

In the coming period, the Project will continue strengthening the national expertise through the implementation of an *ad hoc* programme. The Project will continue to consider the full involvement of all the research institutes and scientists from the participating countries as a priority, an increase in national capacity in terms of expertise will therefore continue to be promoted through the support of specific research programs 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.

In particular, activities foreseen for the coming 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.
- Training in fisheries acoustics, as requested by the regional scientists during previous meetings organized by the Project. An advanced course could be organized in cooperation with the AdriaMed Project.
- Training on otolith reading could be jointly organized with the AdriaMed Project
- The Project will support participating Institutes in capacity building on particular topics such as monitoring plans on *Posidonia* meadows, monitoring plan on marine sponges, and taxonomy of chondrychthyes fish, genetic studies, species identification of eggs and larvae, growth of crustaceans.

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

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

The Project will continue to strengthen international and regional cooperation at Mediterranean level with the GFCM and its related bodies through the participation of experts from the MedSudMed countries in the GFCM events, in function of budget availability. The existing cooperation with other FAO Regional Projects such as the AdriaMed Project will continue and further collaborations with the newly established CopeMed II and EASTMED, MedFisis (when it is operative) will be sought.

e) 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.

A series of activities are foreseen to enhance the communication between the Institutions participating in the Project and between the Regional Projects AdriaMed and CopeMed II:

- The Project will take advantage of the voip (Voice Over Internet Protocol) communication system that will be implemented within AdriaMed could be extended/made available to MedSudMed;
- In order to harmonize the information provided on the Projects' web site, cooperation is foreseen with CopeMed II to design the new Project home page using the AdriaMed homepage as a template and uploading the data from the old onto the new web site. Coordination with AdriaMed, on the structure of the website will continue;
- In order to standardize the information provided on line in the Fisheries Country Profile (FCP) (available on the Project's website) a unique standard scheme to be used by all the Projects will be agreed upon and used (taking into consideration both the examples of the AdriaMed FCP and CopeMed I FCP) ;
- In order to facilitate the circulation of scientific knowledge on fisheries in the Mediterranean a link to the document repository of other Mediterranean Regional Projects such as AdriaMed and CopeMed II will be created.

Fishery and Ecosystem Information System FEIS: update on the regional metadatabase version

Abstract

The **Fishery and Ecosystem Information System** (FEIS), is the information component of the FAO regional Project MedSudMed which operates in Geographical Sub Areas (GSAs) 12, 13, 14, 15, 16 and 21 and undertakes research activities in cooperation with four participating countries (Italy, Libya, Malta and Tunisia). FEIS, which integrates descriptive information (metadata) and data, is a system designed to capture, store, manage, and distribute information about environmental and fisheries resources as collected, developed and used by MedSudMed and its participating countries.

Introduction

In the area covered by the FAO Regional Project MedSudMed, which operates in Geographical Sub Areas (GSAs) 12, 13, 14, 15, 16 and 21, scientific bottom trawl surveys, acoustic surveys as well as oceanographic surveys have been carried out to monitor and assess fishery resources and abiotic parameters. For the most part survey sampling design could cover only national and international waters. Exceptions are the research activities jointly undertaken by MedSudMed in cooperation with four participating countries (Italy, Libya, Malta and Tunisia).

Since the beginning of its activities, the Project identified the need to have the large amount of data that are available in the area easily accessible for use. The creation of a regional logical databank holding all the data collected by country and for the whole region was undertaken. The idea was to design a simple system to store the available data and which would facilitate basic analysis. The proposal has been illustrated since the First Meeting of the MedSudMed Coordination Committee held in Rome 19-20 September 2002 (MedSudMed, 2003). On that occasion it was agreed that particular focus was to be given to knowledge management, Geographical Information System (GIS) and communication facilities between the national partners.

Following the agreements reached at the 1st, 2nd and 3rd Coordination Committee meetings, the Fishery and Ecosystem Information System (FEIS) was designed and created to provide a framework within which the MedSudMed Project participants could share and transfer knowledge, information and data. To this end, regional experts were involved in the development of FEIS by making them fully participative throughout the entire technical development of the system, as well as by incorporating, whenever needed, their comments and suggestions.

The FEIS was developed in two versions: national and regional. The national version was designed for the manual or automatic input of data related to different topics such as demersal

fishery resources, small pelagic fishery resources, ichthyoplankton, oceanography, and operational units. It is destined for the input and management of data collected by the national institutions. The regional version provides information at metadata¹ level on the content of the national versions and also includes a global data query that can provide summary information of data available in the Project area. In 2006 each institute received the prototype of FEIS in its current state for testing and reviewing for specific adaptation to national exigencies.

The FEIS (version 1.x) was developed between 2002 and 2006 as a stand-alone application with a user interface using Visual Basic and Microsoft Access as the database software (Coppola, 2003; MedSudMed, 2004, 2006).

The research institutes involved provided advice for the standardisation and the realization of a common data format. This paper focuses on the progresses made on the regional version of FEIS.

The regional metadatabase version

The regional metadatabase version of FEIS is part of MedSudMed's integrated approach to the management of metadata on scientific resources produced or used by the Project. The key information concerns biological aspects of the resources, environmental parameters and fishery statistics (thematic data) in the Project area. The thematic base of data is complemented by accessory data and information obtainable from the Internet or other networks and duly structured to enable its access for pooled processing (immediate and/or future).

The efforts to prepare the metadata version focused initially on the development of environmental resource directories enabling users to find data of potential interest, and development of detailed catalogues of descriptive information that enable users to evaluate the use of data as part of some assessment activity. In FEIS's strategy, the concept of a data directory has been extended to include analysis tools, models, documents, and multimedia products to better reflect the complexity of environmental inventory and monitoring activities.

Currently FEIS includes surveys metadata (trawl surveys, acoustic surveys, ichthyoplankton surveys and oceanographic surveys) as well accessory metadata (environmental data, maps documents and other data files which may contains output results from raw data) gathered and compiled in the MedSudMed area (Table 1). Moreover due to the cooperation between the MedSudMed and the AdriaMed Project, which focuses on the Adriatic Sea region, additional metadata from the International trawl surveys carried out in the Eastern Adriatic Sea have been included into FEIS thus enlarging the "area" covered by the application.

Visualization of the geo-referenced data is possible through the mapping module. Currently, the module allows users to map station locations, species distribution and biomass by station.

¹ Simply defined, metadata is "data about data." Used in the context of digital spatial data, metadata is the background information which describes the content, quality, condition, and other appropriate characteristics of the data.

The detailed technical description and documentation of the database system is given by Coppola *et al.* (2003).

Table 1. Data Structure in FEIS.

Surveys data	Trawl Surveys Acoustic Surveys Ichthyoplankton surveys Oceanographic Surveys
Accessory data	Environmental data Maps Documents

Up to date, the regional database, FEIS contains data from 2565 stations, comprising records from the partner countries and including published trawl data from Croatia, Tunisia and Italy. The data span the years from 1983 to 2007. The major fishing areas covered by 'FEIS' include GSA 12 (Northern Tunisia), 13 (Gulf of Hammamet), 14 (Gulf of Gabes), 15 (Malta Island) and 16 (South of Sicily); GSA 17 (Northern Adriatic Sea – Eastern part); GSA 18 (Southern Adriatic Sea) (2001-2007).

Table 2. Summary of data that were provided by the MedSudMed/AdriaMed participating institutes and stored in the FEIS.

Trawl Surveys				
Name	Period covered	Owner	Covered GSA	N stations
Medits 2002	2002	CNR-IAMC ² and MCFS ³	15 and 16	119
Medits 2003	2003	MCFS ³	15	120
Medits 2004	2004	CNR-IAMC ² and MCFS ³	15 and 16	179
Trawl survey in GSA 21*	1994 (5 surveys)	MBRC ¹	21	180
CRV03/CRV03a	2003 (2 surveys)	INSTM ⁴	14	47
DEMEST0	1998	INSTM ⁴	13	29
DEMEST1	1999	INSTM ⁴	13	37
DEMEST2	2000	INSTM ⁴	13	50
DEMEST3	2001	INSTM ⁴	13	25
DEMEST4	2002	INSTM ⁴	13	25
DEMEST5	2003	INSTM ⁴	13	30
DEMNORD1	1999	INSTM ⁴	12	45
DEMNORD2	2000	INSTM ⁴	12	24
DEMNORD4	2002	INSTM ⁴	12	23
DEMNORD5	2003	INSTM ⁴	12	15
DEMNORD6/ DEMNORD6a	2004 (2 surveys)	INSTM ⁴	12	41

Trawl Surveys				
Name	Period covered	Owner	Covered GSA	N stations
DEMSUD2	2000	INSTM ⁴	14	68
DEMSUD3	2001	INSTM ⁴	14	40
DEMSUD4	2002	INSTM ⁴	14	43
DEMSUD5/ DEMSUD5a	2003 (2 surveys)	INSTM ⁴	14	66
DEMSUD6/ DEMSUD6a	2004 (2 surveys)	INSTM ⁴	14	30
DEMSUD7	2005	INSTM ⁴	14	50
Trawl survey in GSA 21* TUGGPR83	1983	INSTM ⁴	14	26
AdriaMed 2001	2001	AdriaMed	17 and 18	132
AdriaMed 2003	2003	AdriaMed	17 and 18	171
AdriaMed 2004	2004	AdriaMed	17 and 18	199
AdriaMed 2005-2006	2006	AdriaMed	17 and 18	170
AdriaMed 2006-2007	2007	AdriaMed	17 and 18	184
Total N. surveys	38		Total N. stations	2168

* Operated in the framework of the FAO-LibFish Project

¹ Marine Biology Research Centre, Tajura, Libya

² Consiglio Nazionale delle Ricerche - Istituto per l' Ambiente Marino Costiero, Mazara del Vallo, Italy

³ Malta Centre for Fisheries Sciences, Malta

⁴ National Institute of Marine Sciences and Technologies- Salammbô, Tunisia

Acoustic Surveys				
Name	Period covered	Owner	Covered GSA	N stations
JUVENILE 99	October 1999	CNR- IAMC	16	11
JUVENILE 00	September 2000	CNR- IAMC	16	20
ANCHEVA 00	July 2000	CNR- IAMC	16	13
JUVENILE 01	October 2001	CNR- IAMC	16	31
ANCHEVA 02	August 2002	CNR- IAMC	16	25
ANCHEVA 03	June 2003	CNR- IAMC	16	24
JUVENILE 04	October 2004	CNR- IAMC	16	29
Total N. surveys	7		Total N. stations	153

Oceanographic Survey				
Name	Period covered	Owner	Covered GSA	N stations
ESPOIRS1	August 2002	INSTM	12	24
ESPOIRS2	October 2002	INSTM	12	29
ESPOIRS3	February 2003	INSTM	12	29
ESPOIRS4	April 2003	INSTM	12	28
ESPOIRS5	August 2004	INSTM	13	68
ESPOIRS6	July 2005	INSTM	14	66
Total N. surveys	6		Total N. stations	244

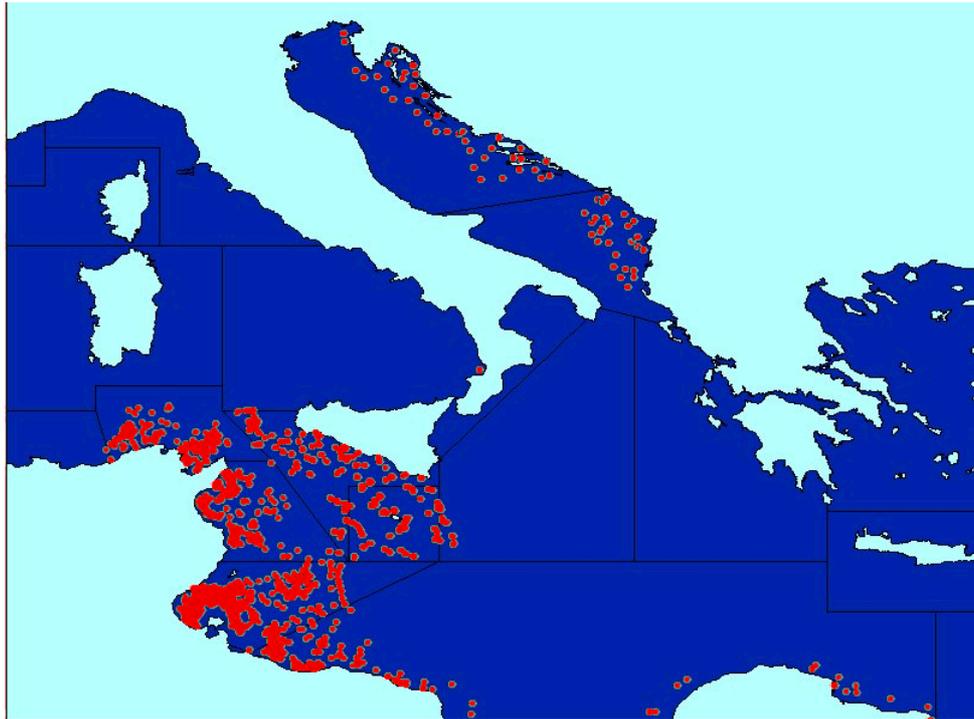


Figure 1. Geographical coverage of scientific survey data contained in FEIS.

The FEIS provides an overview of the available data and information in the Project area; it offers the possibility of exchanging and sharing data and it includes data query tools, as well as data visualisation and analysis tools. To collect data from other systems, agreed protocols and procedures have been implemented between FEIS and the national software available, e.g. with the “Sea Trim” Data Base (limited to trawl surveys recording and processing) developed by the Consiglio Nazionale delle Ricerche - Istituto per l’Ambiente Marino Costiero (CNR-IAMC) in collaboration with the Malta Centre for Fisheries Sciences (MCFS). Additional routines were created to upload data from the INSTM Institute of Tunisia. Moreover routines have been created to enable automatic uploading of the data from the regional database ATrIS (AdriaMed Information Trawl Surveys System, Gramolini *et al.* 2005, 2006) developed by the AdriaMed Project to store and analyse data coming from the trawl surveys organised by the Project in the Adriatic Sea.

Future developments and publication

FEIS was developed in response to the increasingly complex nature of environmental and fisheries assessments. Today’s assessments require the integration of ecological fisheries and socio-economic data and utilize data collected on several spatial and temporal scales. The assessments typically involve multiple information management systems and numerous researchers located in different geographical work sites. Successfully completing marine ecosystem studies requires the development of shared inventories of information that support finding and evaluating the information resources for secondary use.

The Project presented an advanced release of FEIS at the 2005 GFCM Scientific Advisory Committee (SAC) session, receiving encouraging and positive comments. Moreover FEIS was presented during the 9th session of the SAC Sub-Committee on Statistics and Information (SCSI) (Kavala, Greece 17-20 September 2007). On this occasion the Committee suggested to further develop FEIS at regional level under the auspices of the GFCM Secretariat.

Further technical development of the FEIS, in cooperation with the GFCM Secretariat, foresees a web interface as well as the on-line publication of the system. A web based prototype has been created using a more flexible platform (Microsoft SQL server) as the database software. This step is foreseen and motivated by the ever-increasing amount of data and records that have to be managed. Based on the regional collaborative effort made by the participating countries the future development of FEIS is envisioned to:

- (i) increase the power and utility of the FEIS for partner countries;
- (ii) expand the coverage of the database geographically and temporally
- (iv) increase awareness of available survey data at Mediterranean level, and their utility for management, and facilitate greater sharing and collaborative analyses.

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