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Agricultura

MedSudMed

Report of the Fourteenth Meeting of the Coordination Committee

St. Julian's, Malta, 26-27 April 2016

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 or EU 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). Since 2012 MedSudMed is cofounded by the Directorate General for Fisheries and Maritime Affairs of the European Commission (DG Mare). The Italian Regione Siciliana funded a project aimed at strengthening MedSudMed’s effectiveness on issues related to demersal resources, namely crustaceans for 30 months, starting from April 2011.

MedSudMed promotes scientific cooperation between research institutions of the four participating countries (Italy, Libya, 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) and Scientific Reports (GCP/RER/010/ITA/MSM/SR-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 Thirteenth 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) held in Rome, Italy, from 16th to 17th April 2015.

Acknowledgements

The Department of Fisheries and Aquaculture within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC) of Malta, which provided kind hospitality and assistance in the organization of the meeting is gratefully acknowledged.

MedSudMed

Report of the Fourteenth Meeting of the Coordination Committee, St. Julian's, Malta, 26-27 April 2016.

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ABSTRACT

The Fourteenth meeting of the MedSudMed Coordination Committee was held in St. Julian's, Malta, 26-27 April 2016. It was attended by representatives from the countries participating in the Project (Italy, Libya, Malta and Tunisia), representatives of the Italian Donor (Ministry for Agriculture, Food and Forestry Policies, MiPAAF), of the FAO GFCM Secretariat, of the FAO AdriaMed and CopeMed II Projects, as well as staff of the MedSudMed Project. A brief remind was made on the Project objectives and activities and a presentation of the activities implemented for the 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. 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 14th Meeting of the MedSudMed Coordination Committee

St. Julian's, Malta, 26-27 April 2016.

Opening of the meeting and election of the Chairperson (Agenda Item n. 1)

1. The 14th Coordination Committee Meeting of the FAO Regional Project MedSudMed “Assessment and Monitoring of the Fisheries Resources and the Ecosystems in the Straits of Sicily” was held in St Julian, Malta 26th - 27th April 2016, kindly hosted by the Department of Fisheries and Aquaculture within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC) of Malta.
2. The Coordination Committee was attended by representatives of the Donor, the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF), representatives from the countries participating in the Project (Italy, Libya, Malta and Tunisia), staff of FAO - Fisheries and Aquaculture Policy and Resources Division (FAO FIA), representatives of other FAO Regional Projects (AdriaMed, CopeMed II and EastMed), of the FAO General Fisheries Commission for the Mediterranean (GFCM) Secretariat, as well as the staff of the FAO MedSudMed Project.
3. On behalf of the Government of Malta, the Director General for Fisheries of the MSDEC, Ms Andreina Fenech Farrugia, welcomed all the Committee Meeting participants to Malta. She welcomed all the Delegations to the city of St Julian. She greeted the Project staff, representatives of donors and FAO. She greeted the Meeting delegates and expressed her honour at having the Committee members gathered in Malta on occasion of its fourteenth Meeting. Ms Fenech Farrugia underlined the importance of the Project, in particular to gather scientific experts together for cooperative discussion and for facing together emerging priorities. She introduced the staff of the Department of Fisheries and Aquaculture, Ministry for Sustainable Development, the Environment and Climate change, and briefly illustrated the fisheries and aquaculture sector of Malta. These sectors are very relevant for her country both from a social and economic point of view. For this reason, it is a priority for Malta to tackle issues related to national and regional fisheries and aquaculture also taking advantage of the cooperative framework developed by the FAO MedSudMed Project.
4. The FAO FIA representative, Mr Marcelo Vasconcellos, thanked the Maltese Government for kindly hosting the meeting. He, pointing out the importance of FAO fisheries Project in the Mediterranean Sea, wished fruitful discussion to the Committee meeting.
5. The FAO MedSudMed Project Coordinator, Mr Enrico Arneri, took the floor and thanked the Maltese authorities for hosting the meeting. He thanked the participating countries for their strong commitment and involvement at scientific and institutional level, which has resulted in the Project's achievements. He pointed out the importance of the contribution received from the Donors that further highlighted the role that the Project is called to play in the coming period to cope with emerging challenges. He also highlighted that the cooperation in the south-central Mediterranean Sea was further strengthened in recent years

and will be even more reinforced in the coming period by involving both scientists and fisheries Administrations. In this view, he mentioned the effort done with CopeMed II to further expand the cooperative framework established and optimise resources.

6. The Project Fishery Monitoring Expert, Mr Luca Ceriola, thanked the Delegations and recalled that the meeting marked the 15th year of Project activities; years during which the activities of the Project evolved resulting in wider and wider achievements. This was made possible by the joint effort of all participants and to the cooperative framework successfully established. In particular, 2015 was a year extremely important: the work done produced important achievements like the involvement of all fisheries stakeholders in the cooperative technical discussion promoted by the Project in support of fisheries management, and the production of scientific documents based on the joint scientific work carried out. In addition, some features of regional small scale fisheries were brought forward at Mediterranean level at the GFCM Regional Conference on Small Scale Fisheries. All these achievements put forward to new challenges for the Project and in this light, Mr Ceriola wished that the 14th Coordination Committee meeting will pave the way to cope with new priorities and look forward for fruitful discussion.
7. The Representatives of the participating countries, Italy, Libya and Tunisia, thanked the Department of Fisheries and Aquaculture within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC) of Malta for hosting the meeting and MedSudMed Project for the continue support given through the year. The national representatives further recognized the importance of the Project in building up future achievements. The Project Donors, the Italian MiPAAF and the EC DG were thanked for the contribution provided to the Project activities. The FAO MedSudMed staff was also thanked for the preparation of the meeting and for the work that has been put into the finalisation of the documents presented.
8. The Project Coordinator informed the Meeting that a set of documents prepared by the Project staff had been made available on line for the participants at the URL: [http://www.faomedsudmed.org/doc temp/cc14/CC14_documents.html](http://www.faomedsudmed.org/doc_temp/cc14/CC14_documents.html). A printed copy of the documents was also distributed to each delegation.
9. Mr Reno Micallef of the MSDEC was proposed and elected as Chair for this session of the MedSudMed Coordination Committee. Mr Micallef drew the attention of the participants to the work that, after one year, the Committee members will be called to play to discuss the progress achieved by the Project and to define the appropriate work plan. Given the new approach implemented by the GFCM, and to cope with the challenges of fisheries management, MedSudMed played a key role to feed discussions on the management of fisheries in the south–central Mediterranean. Throughout the years, the Project has proven to be beneficial for member institutions. MedSudMed project acted as a platform where scientists, administration and stakeholders from the Strait of Sicily were brought on the same level for joint discussion and to ensure that fisheries of shared resources is done uniformly. On seeing the positive outcomes resulting from the work performed by the MedSudMed, he underlined it is with great pleasure that Malta is hosting the 14th session of the MedSudMed Coordination meeting.

Adoption of the Agenda (Agenda Item n. 2)

10. The Chair drew to the attention of the Committee to the Agenda, inviting comments or amendments. The Agenda was adopted with no changes.

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

11. The Project Fishery Monitoring Expert introduced this agenda item and presented the document "Report on Project progress", in which the main activities carried out by MedSudMed from May 2015 to March 2016 are mentioned in detail. The activities carried out correspond to the Project mandate, to the established work programme and to the recommendations of the 13th Meeting of the MedSudMed Coordination Committee held in Rome (23-24 April 2015, Italy). The work plan was also in agreement with the conclusions of the FAO independent evaluation (2012).
12. Where the intersessional activities were concerned, the Project presented them grouped into the four main components: 1) Cooperative research programmes and working groups; 2) National capacity development; 3) Regional cooperation and 4) Project communication.
13. The Coordination Committee was informed that the annual meeting of the MedSudMed Working Group on Demersal Fisheries Resources was organised in September 2015; one session of the WG-DEM was held jointly with the FAO Project CopeMed II to further promote discussion and optimise human and financial resources. The Working Group meeting focused on: i) technical discussion towards the identification of management strategies for demersal fisheries in the Project area in view of the issues raised during the 39th GFCM session (Italy, 25-29 May 2015); ii) the development of a case study on small-scale fisheries (SSF) in preparation for the GFCM regional conference on SSF iii) the appraisal of the state of demersal fish stocks (*P. longirostris*, *M. merluccius*, *Aristaeid* shrimps and *Mullus* species) and fisheries in the MedSudMed Project area by integrating all existing data; iv) socio-economic data collection for fisheries appraisal focusing on *P. longirostris* and *M. merluccius* fisheries and v) possible joint studies on demersal elasmobranchs.
14. For what concerns stock assessment, data from Italy, Malta and Tunisia were shared and the best approaches to run joint exercises on selected species were identified. Regarding the *P. longirostris* and *M. merluccius* stock assessment, experts agreed to run an extended survivors analysis (XSA) and to include short term forecasts in the results of the study. Regarding *Aristeomorpha foliacea*, *Aristaeus antennatus*, *M. barbatus* and *M. surmuletus*, existing data were explored and discussion began on stock boundaries and biological parameters. The possibility to provide comprehensive information to support spatial based management planning was discussed. The WG-DEM agreed to compile data and information for defining management scenarios on *P. longirostris* and *M. merluccius* fisheries to be tested with all relevant stakeholders. Moreover, discussions were held on the identification of stocks of common interest between Tunisia and Algeria, in cooperation with CopeMed II.
15. The Coordination Committee learned that the Project was seeking to make progress towards the establishment of a Working Group on elasmobranchs (WG-ELASMO) in the south-central Mediterranean Sea. In this framework, a Technical Meeting on Elasmobranchs was

held in parallel with the MedSudMed Study Group for Stock Assessment. Preliminary distribution maps were prepared for elasmobranchs pooling together bottom trawl survey data from Italy, Malta, Tunisia and Libya. National experts agreed on objectives and priorities of the WG-ELASMO, as well as WG short-medium term work-plan.

16. Considerable effort was made by the Project and the research institutes in the south-central Mediterranean Sea to progress in the appraisal of the state of main fisheries target species: *P. longirostris*, *M. merluccius*, *Mullus* species and Aristaeid shrimps. The Coordination Committee received detailed information on the activities of the Study Group for Stock Assessment (FAO HQ, 19-23 November 2015) and the results achieved in the intersessional period. Stock assessment exercises were carried out for: *P. longirostris* and *M. merluccius* in GSAs 12-16, *Mullus barbatus* in GSAs 15-16; *Mullus barbatus* and *Mullus surmuletus* in GSAs 12, 13, 14 using data from all concerned fisheries. The stock assessment for *P. longirostris* and *M. merluccius* were presented and discussed at the GFCM SAC WG on Demersals Species and endorsed as benchmark assessment by the GFCM Sub-Regional Committee for the Central Mediterranean Sea (SRC-CM). The stock assessment of *Mullus barbatus* in GSAs 15-16 was also presented at the GFCM WG on Demersal Species as preliminary exercise.
17. Where fisheries management is concerned, it was emphasised that the Project is in a position to assume an important role in promoting and supporting technical discussion on the harmonisation of management strategies in the Project area. In this context, a technical meeting was organised involving all fisheries stakeholders from the participating countries (FAO HQ, 25-26 January 2016). Representatives of fisheries associations, fisheries administrations and scientists met with the aim to contribute to the process of developing an internationally agreed multi-annual management plan for fisheries targeting *P. longirostris*, *M. merluccius* in the south-central Mediterranean Sea in line with the conclusions of the 39th plenary sessions of the FAO GFCM. The Committee provided also the possibility to discuss on potential management strategies to be outlined in a multi-annual management plan. In this view, possible scenarios to be tested using simulation tools for assessing their likely consequences on fish stocks and fisheries were agreed on. The scenarios were used to feed discussion during the GFCM SAC Workshop on bioeconomic assessment of management measures and the Subregional Committees for the Central Mediterranean (SRC-CM, Rome, Italy, 01-05 February 2016).
18. Where socio-economic aspects of fisheries are concerned, on request of, and in collaboration with the participating institute and fisheries administration and association in Tunisia, INSTM and DGPA and UTAP (Union Tunisienne de l'Agriculture et de la Pêche), the Project designed and initiated a pilot action on fisheries socio-economic data collection. The pilot action focused on bottom trawl fisheries exploiting *P. longirostris* and *M. merluccius*. This activity comprised: i) a capacity development component; ii) a field data collection; and iii) the estimation of some economic indicators for the characterization of socio-economic aspect of the selected fishery. The aims were: to verify and test the feasibility of socioeconomic survey at national scale and to provide a description of the main socio-economic aspects for the fisheries exploiting *P. longirostris* and *M. merluccius*.
19. The Coordination Committee was informed that, on the key issue of small pelagic fishery resources, particular importance was given to enlarging and consolidating the group of

researchers involved in studies on the species concerned. In this view, two meetings of the MedSudMed Working Group on Small Pelagic Fisheries Resources (WG-SP) were held, on 11-13 May 2015 (Tunis, Tunisia) and 30 November – 02 December 2015 (Capo Granitola, Italy). National experts met to progress towards the preparation of a common data set for acoustic and ichthyoplankton data gathered during national surveys in the participating countries. Furthermore, joint exercises were carried out to map areas of concentration of adults, eggs and larvae of *Engraulis encrasicolus* in the south-central Mediterranean Sea and to define potential connections between them. Joint discussion was also initiated on the preparation of a series of scientific and technical documents on small pelagic fish and environmental factors affecting them. The planned joint survey at sea (inter-ship comparison between the Tunisian and Italian research vessels) was postponed due to technical difficulties.

20. During the WG-SP *ad hoc* discussion was initiated towards the appraisal of horse mackerels (*Trachurus* species) in the south-central Mediterranean Sea. Existing data on this group of species were reviewed. Target species were identified, i.e. *T. mediterraneus* and *T. trachurus*. A work plan to progress towards the assessment of these species was agreed.
21. National capacity development was transversal to all activities. Training courses were organised following specific requests by the participating institutes, these were an opportunity to strengthen scientific collaboration and to exchange competencies between institutes. On-the-job training was also held.
22. In the framework of cooperative activities, as indicated in the last meetings of the Coordination Committee and by the FAO Independent Evaluation, the Project strengthened liaisons with the Donors (MiPAAF and EU-DG-MARE) and intensified the communication flow with them, including coordination meetings. Cooperation was strengthened with the FAO Project CopeMed II to optimise the use of human and financial resources; in collaboration with CopeMed II the Project also promoted bilateral discussion between Algeria and Tunisia for the identification of species of joint interest for stock assessment purposes. In the framework of the FAO decentralisation process, MedSudMed is reinforcing collaboration with the FAO offices for North Africa (FAO SNE) and Near East (RNE). Strong cooperation with FAO Oman and FIPI was also established. MedSudMed continued to support the activities of the GFCM by providing scientific contributions for discussion and by participating and funding the participation of experts in GFCM meetings
23. The Committee members received the information on the work done by the Project positively, recognising adherence to the expected outputs of the previous Coordination Committee meeting.
24. Ms Pilar Hernandez, from the FAO CopeMed II Project, thanked Maltese authorities for their hospitality. She also thanked MedSudMed for the organization of this meeting and emphasised the importance to further strengthening the cooperation among all the FAO Mediterranean Projects, in particular between MedSudMed and CopeMed II Project, in order to optimize the resources (in terms of human resources, economic resources and time).

25. The Committee members expressed their appreciation for the amount of work done by the Project and emphasized that it represents the follow up to the programme of work approved by the last Coordination Committee.
26. The Chair, Mr Reno Micallef, by praising the amount of work produced by the Project in the intersessional period, informed the participants on the positive comments received by the Maltese fisheries stakeholders who were involved in the MedSudMed activities.
27. The representative of Malta, Ms Roberta Mifsud, thanked the MedSudMed Project for the support given to the country, and stressed, once again the importance that the Project has for her country. She recalled the first steps of the Project, the achievement reached in enhancing the scientific cooperation in the Project area among scientists and she stressed the process of widening this cooperation to involve also administrations and stakeholders. On the subject of the support provided on capacity development, Ms Mifsud underlined the importance of the training on R carried out in 2015, in multiple sessions, for which supportive synergies with the other FAO Mediterranean Projects were sought. The knowledge acquired proved to be useful for the national administration, which now has one extra tool to process national fisheries data. She further stressed the relevance of the workshop on *Coryphaena hippurus* organised in cooperation with FAO CopeMed II and she wished that the future work plan could tackle the important tasks identified during the workshop. Overall, she praised the work done by the MedSudMed Project, being the first platform to which Malta scientists revert to tackle issues on the fisheries in the area. She finally acknowledged the support provided by the Donors, and referred with pleasure to the increasing importance that the EC-DGMARE is providing to MedSudMed and the other the FAO Mediterranean Projects.
28. The Representative of Libya, Mr Hisham Ghmati, thanked the Project staff for the work and the support provided through the year. He also wished to thank the staff of IAMC-CNR of Capo Granitola (Italy) for the collaboration that, starting in 2008 with the first joint acoustic and oceanographic survey in Libyan waters, led to the production of several MedSudMed Technical Documents. He recalled that he and his scientific team were part of the scientific crew on board of the R/Vs during surveys and praised the fact that thanks to these surveys his Institute do have a large amount of data that could be analysed. He stressed that the production of these publications encourage Libyan scientists also to further stress the importance of fisheries science to the competent administration and continue working in the cooperative framework created by the MedSudMed Project.
29. The representative of Tunisia, Mr Hechmi Missaoui, echoed the importance of the FAO MedSudMed Project for the South Central Mediterranean pointed out by other participants. In particular, he put an accent on the activities carried out in Tunisia, which implemented at country level, provided inputs for fisheries management both at country and regional level. He expressed the wish that the Project would further explore the possibility of supporting additional activities, such as fishing technology and small scale clam fishery.
30. The representative of Italy, Mr Fabio Fiorentino, congratulated the Project for the important activities carried out on relevant aspects of assessment and management of fisheries and fish stocks. In this view, he reiterated the importance, for the Project, to further tackle the issue of spatial structure of the fisheries resources shared in the Straits of Sicily, as improving our knowledge in space and times is the prerequisite to obtain sustainable fisheries management. He pointed out that the large amount of scientific data collected and compiled in the

framework of MedSudMed represents the building blocks for the sustainable management of fisheries. He recalled the evolution of the work done through the year with the support of the Project that, initiated with technical meetings, and is now structured through three Working Groups (on demersals, small pelagics, and elasmobranchs) and several Study Groups and technical meetings in supporting them (e.g. on stock assessment and selected species/ group of species).

31. The MSM Project Coordinator, Mr Arneri, thanked the participating countries for their strong commitment and involvement at scientific and administrative level, which has resulted in the Project's achievements. In this view he further stressed that all Project's accomplishments, the changing of attitude, moving from merely scientific fora to a wider cooperative framework with administrations and professionals, have been made possible thanks to the collaboration of all the MSM institutions and experts.
32. With reference to fishing technology, the participants were recalled of the outcomes of the cooperative activities carried out in Tunisia in the frame of MedSea LME (Large Marine Ecosystem) and MedSudMed Projects that could be instrumental to re-start the issue of fishing technology in the Project agenda. Mr Arneri also recalled that some steps were already taken in the past with the decision taken, during the 12th Project Coordination Committee (Tunis, May 2012), to prepare a catalogue of fishing gears. The same approach was also taken by the GFCM SAC that, during its 16th session, included in its work plan the preparation of a catalogue on fishing gears for all the Mediterranean Sea.
33. The delegate of Tunisia, Mr Othman Jarboui, wished to thank once again the technical support received from MedSudMed for the R/V Hannibal. This has turned in the practical resolution of a technical issue and in the possibility to restart procedures for planning new surveys at sea. He commented also the importance to further maintain the involvement of fishers to progress in the discussion on management together with fisheries administrations. Moreover, to facilitate the dissemination of results achieved, he proposed that the translation in the local languages of the relevant reports would be a first asset to improve this cooperative framework.

FAO General Fisheries Commission for the Mediterranean (GFCM) work plan for the next intersession period (Agenda Item 4)

34. The Moderator of the GFCM Sub-regional Committee for the Central Mediterranean (SRC-CM), Ms Andreina Fenech Farrugia, provided the Committee with an overview of the new GFCM Scientific Advisory Committee (SAC) structure and of the preliminary SAC work plan. She informed the participants that, in line with the decision by the Commission in its 39th session, the GFCM-SAC would test a shift from a thematic to a subregional approach during a two-year feasibility study (2015-2017). Four Sub-regional committees (SRC) were established to address a number of issues related to the work of the SAC at subregional level: the SRC for the western Mediterranean (SR-WM), the SRC for the central Mediterranean (SRC-CM), the SRC for the eastern Mediterranean (SRC-EM), and the SRC for the Adriatic Sea (SRC-AS). The objectives of the SRCs are: i) implement the work plan of the SAC at the sub-regional level (with special emphasis on the support to the implementation of subregional management plans) and ii) provide the SAC with proposals on different topics, such as advice for fisheries management and provide draft proposals for SAC work plan at subregional scale. The first meeting of the SRC-CM was held on 3-5 February 2016 (GFCM Headquarters, Rome, Italy) and mainly focused on the request of the

GFCM to the SAC of providing technical advice in support of the development of a management for *P. longirostris* and *M. merluccius* fisheries. The results of the SRC-CM were discussed and endorsed at the 18th SAC session (21–23 March 2016, Nicosia, Cyprus).

35. Ms Fenech Farrugia introduced the preliminary work plan of the GFCM SAC for 2016-2017, which was adopted in the 18th SAC meeting. At the outset, she clarified that this plan will be submitted to the Commission at its 40th Session (30 May-3 June 2016, Malta) for consideration and endorsement. She presented activities planned at the regional level, for the entire Mediterranean Sea and at the sub-regional level, specifically for the Central Mediterranean sub-region. At regional level, foreseen activities concern: the marine environment ecosystems; statistic and information, i.e. the DCRF; and stock assessments. At the sub-regional level in common for all the sub-regions, activities are foreseen regarding the recreational fisheries and their interaction with small scale fisheries; the description of Mediterranean métiers; and the finalization of Guidelines on a common methodology for socio-economic analysis, in coordination with the FAO regional projects.
36. Specifically for the Central Mediterranean sub-region, the activities of the work programme include: i) the training on quantitative assessments of management scenarios; ii) the consolidation of bio-economic assessments of the potential impact of management measures on deep-water rose shrimp and hake trawling fisheries, incorporating better socio-economic information and simulating a wide variety of scenarios; iii) the identification of the main nursery areas for hake and deep-water rose shrimp, in addition to those already identified in GSAs 15 and 16; and iv) the assessment of the impact of the proposed temporary closure in GSA 14 on off-shore trawl fisheries targeting deep-water crustaceans. Furthermore, specifically for the Central Mediterranean subregion, activities have been foreseen to improve knowledge on the abundance, distribution and population dynamics of demersal elasmobranch species occurring in the whole area. Also building upon the work done in the Strait of Sicily.
37. Ms Fenech Farrugia informed the participants that SAC has proposed to organize a GFCM Forum on Fisheries Science (GFCM FishForum) and presented its objectives. The Committee members expressed thanks for the very comprehensive presentation and the Chair opened to comments by the participants.
38. When referring to the stock boundaries, some discussion on the identification of possible shared stocks of pelagic fish species was put forward. The Committee was recalled on the outcomes of the STOCKMED¹ Project and on the importance to expand the STOCKMED results to the entire Mediterranean Sea. In this view, the importance to have a coordinated data collection at sub-regional (south-central Mediterranean) and regional (Mediterranean) level designed on the purpose to apply procedures for stock boundaries identification was reiterated.
39. The Committee underlined the importance to take into consideration the conclusions of the GFCM Sub-regional Committee for the Central Mediterranean Sea (SRC-CM) and the work plan of the SAC when dealing with the future activities of the Project. In reiterating the significance of the process of sub-regionalization promoted by GFCM, the Committee noted

¹ Stock units: Identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSA.

the convergence of the activities planned at SRC-CM level with the overall priorities identified for the MedSudMed Project. In this view, it was mentioned that to ensure continuity in the work plans of the Project and of the GFCM and avoid duplications, priorities identified by MedSudMed experts should be put forward to the attention of the SRC-CM.

40. Following the presentation of the list of meetings proposed within the framework of the GFCM and the GFCM SRC-CM, some discussion was held on the calendar of activities that, in some cases, prevents from full participation of national experts to GFCM meetings or from providing update data and results to contribute to technical discussion (e.g. surveys calendar in some cases result in the use of previous year data for stock assessment exercise). On this issue, the representative of Italy, Mr Bonanno, informed the participants on the recent outcomes of the MEDIAS coordination meeting, on the possibility to provide surveys outputs in time for the using during the main international technical bodies (e.g. GFCM Working Groups). At present, the acoustic and oceanographic data collection in Mediterranean take place in Summer-Autumn and the GFCM WGs are generally set at the end of November. These arrangements make it very difficult to have data available for analysis at the GFCM WGs. Accordingly, the proposal to take into consideration the scientific campaigns calendar when setting the dates of the international meetings, both organized by the Project and the GFCM WGs, was discussed. The Committee members, while recognizing that the meeting is not the place where these decisions could be made, underlined the importance to forward this issue to the relevant fora for discussion.

Development of the Project's Programme for the next period (Agenda Item 5)

41. The MedSudMed Project Coordinator introduced the document "Project Future Implementation". The Committee was thus informed on the planned activities for the forthcoming period, which take into account the objectives and results achieved so far, the recommendations emerging from this Committee meeting, the indications gathered from the countries during a series of informal meetings held with the national staff, indications raised from the Project's Working Groups, as well as the scientific cooperation established within the framework of the GFCM. The Committee was also reminded that the full development of the Project Programme will depend on the Project's budget availability.
42. The Project recently initiated a programme for fisheries socio-economic data collection in Tunisia focusing on demersal fisheries targeting *Parapenaeus longirostris* and *Merluccius merluccius*. For the coming period, the Project together with the DGPA, INSTM and UTAP, will investigate the possibility to expand the data collection programme to other selected fisheries segments (e.g. small scale), and to selected sub-regions. The data gathered will be instrumental to complete the appraisal of the state of *Parapenaeus longirostris* and *Merluccius merluccius* and related fisheries and to model their dynamics under different management scenarios. Moreover, this activity will contribute to providing the tools for planning and managing national capture fisheries and will support the country to comply with the GFCM recommendation on data collection (Recommendation GFCM/33/2009/3).

43. In order to support discussion on possible implications of spatial based fisheries management strategies, the Coordination Committee was informed that the Project would explore the possibility to enhance the collection of standardised fisheries independent data, either in terms of area coverage or frequency of sampling, by means of scientific surveys at sea for demersal and small pelagic resources. Furthermore, in support of the need to improve accuracy in data collection across the area and following the request formulated during the WG-DEM, MedSudMed will explore the possibility to support the monitoring on board of commercial bottom trawl vessels in Tunisia. The monitoring will provide useful information and data on catch overall, bycatch and accidental catch of sensitive species. The Project will also continue to support the organisation of the Study Group for Stock Assessment.
44. The Committee was informed that the Project would strive to encourage and support the development of a common view on the management of demersal fisheries resources. In collaboration with the GFCM, focus will be placed on supporting technical discussion for the development of a management plan for fisheries exploiting *Parapenaeus longirostris* and *Merluccius merluccius* in the south-central Mediterranean Sea. MedsudMed foresees the organisation of meetings with the involvement of both the scientific community and representatives of fisheries' administrations and fisheries' associations of participating countries, also envisaging technical support where required.
45. Given the ecological importance of elasmobranchs and the widespread occurrence in the south-central Mediterranean, the Project will support technical discussion and joint activities on demersal elasmobranchs. To this extent, the first meeting of the Working Group on Elasmobranchs will be organised in the second half of 2016. This activity is in line with the specific request from GFCM to collect information about elasmobranchs to be presented to GFCM for necessary discussion within the framework of management plans.
46. One agenda item of the next MedSudMed Working Group on Demersal Fisheries Resources will be devoted to explore existing data and knowledge on Red coral and its fisheries in the south-central Mediterranean Sea. This activity follows a request formulated to the Project to identify possible options to promote technical discussion on Red coral fisheries and takes into account the proposed meeting on Red Coral included in the SAC work plan for 2016-17.
47. Where small pelagic fishery resources are concerned, the Project will continue to support participating countries in the process of data sharing and joint processing. In particular, a further meeting of the *Study Group for the joint processing of acoustic and ichthyoplankton data* will be organised. Given the nature of small pelagic stocks and the ongoing cooperation between experts from Tunisia and Algeria on the acoustic studies of small pelagic fisheries, the possibility to invite expert/s from Algeria to the Study Group will be explored in collaboration with CopeMed II. The standardization of data collection and processing in the south-central Mediterranean Sea will be pursued.
48. The Committee was informed on activities that aim to identify possible shared stocks of pelagic fish species, within the context of the relative Working Group. Emphasis will be given to the possibility to combine various methods to discriminate population and stocks units. Furthermore, selected species will be the focus of *ad hoc* activities: *C. hippurus* and *Trachurus* spp.. Discussion and joint investigation on the stocks of *Trachurus* spp. in the project area will be held during the Project WG-SP. Considering that this species is caught

also by demersal fisheries and information on spatial distribution is gathered using trawl surveys, a strong interaction with the WG-DEM is recommended. The Committee also recommended the next WG-SP to discuss the use of analytical models to assess small pelagic stocks in the region. Activities on *C. hippurus* will be carried out at Western and Central Mediterranean level in cooperation with CopeMed II.

49. Capacity building activities will be transversal to all areas of Project intervention and the Meeting was informed on some key training activities planned. In particular, a training programme on basic fish biology will be initiated for staff of the Marine Biology Research Centre of Tajura, Libya (MBRC), including on macroscopic and microscopic definition of sexual maturity and age determination through otolith reading. Moreover, trainings on stock assessment models (e.g. XSA implemented in R), on bio-economic modelling and on Management Strategies Evaluation will be carried out. In this view, synergies with the other FAO fisheries projects in the Mediterranean Sea will be sought. In addition, the Committee was informed that a joint GFCM – FAO Regional Projects training workshop on stock assessment have been scheduled for July 2016 in Tangier Morocco in collaboration with the Institut National De Recherche Halieutique (INRH) of Morocco.
50. Where regional cooperation is concerned, existing cooperation with other FAO Regional Projects such as AdriaMed, CopeMed II, and EastMed will continue. In particular, collaboration with CopeMed II will be further strengthened for what concern studies on demersal and small pelagic species of common interest between Tunisia and Algeria, as well as where *Coryphaena hippurus* stock and fishery are concerned. Collaboration will be strengthened with the FAO Regional and sub-regional offices in the Mediterranean and Near-East, region such as the Sub-regional Office for North Africa (SNE), Regional Office for North Africa and Near East (RNE). Synergies with other international institutions and initiatives in the Central Mediterranean regarding fishery subjects of interest for the Project will be reinforced for the sake of avoiding duplication of efforts and optimizing the use of human and financial resources.
51. In line with previous decisions of the Coordination Committees and with the recommendations that emerged from the Independent Evaluation carried out in 2012, the Project will continue to strengthen international and regional cooperation at Mediterranean level with the GFCM and its subsidiary bodies.
52. At the end of the presentation, the Chair opened the discussion. The representative of Italy, Mr Bonanno, thanked for the support provided in inter-exchange of scientists at Mediterranean level and look forward for continuing this support. He brought the example of the support by the FAO Mediterranean Projects to the participation of experts to international fora like MEDIAS². He also stressed the importance to standardize the scientific methodology at Mediterranean level to have a common approach for specific studies. In particular, he mentioned the importance to define a common fish ageing protocols by otoliths reading. He made reference to the ICES Working Group meeting on ageing of anchovy that will be held in Autumn 2016. In this view, he proposed that the Project contributes to the standardisation of otoliths reading and supported the participation of experts to the ICES meeting.

² MEDiterranean Acoustic Surveys Programme

53. After wide discussion, the Committee acknowledged the importance to develop in a standardised way the regional capacity on fish age determination through age reading. The standardisation will be the basis for developing the proper input data for life history traits description and stock assessment. To this extent, a programme for capacity development on otolith reading could be initiated. Advantage could be taken from the Working Group on Small Pelagic to plan and implement this programme.
54. The representative of Tunisia, Mr Missaoui, acknowledged and pointed out the relevance of the activities proposed in the work plan. In addition, he called the attention of the meeting to the Recreational Fisheries (RFs). He pointed out the relevance of the issue for Tunisia, as the impact of such fisheries on the overall sector is not fully investigated. The Committee echoed the comment and further noted the importance to explore possible interactions between RFs and small scale fisheries. The Committee members were informed that during the last 17th Coordination Committee of AdriaMed, the importance of RFs was discussed and the decision to tackle this issue at Adriatic level within the next session of the AdriaMed Working Group on Small Scale Fisheries was taken. This is in line with the request from the GFCM to compile existing information on RFs and their interactions with small scale fisheries in order to assess their importance and potential impact on the marine resources and the ecosystems.
55. The Committee discussed at length on the feasibility to initiate an activity on this topic. It was concurred that the Project will initiate dealing with RFs to take stock of existing information and knowledge gaps. In this respect, it was agreed to explore the possibility to have a dedicated session on recreational fisheries, back to back to the next MedSudMed Working Group of Demersal Fisheries Resources meeting; this activity will be also in accordance with the proposed SAC work plan for next year.
56. The representative of Tunisia, Mr Missaoui, also pointed out the importance to further broaden the perspective of the Project activities. With reference to the activities on SSF he wished a stronger commitment of the Project on this issue. He stressed also the importance for his country to include fishing technology in the Project activities, in view of gathering important information in support of industrial and small scale fisheries management. With reference to the small pelagics activities, he stressed that additional effort be done to broaden the research focus on other species, like *Sardinella aurita* or *Sardina pilchardus*, that are becoming more and more important for the regional fisheries. He finally brought the Committee's attention to the possibility that the Project could tackle also shellfish fisheries as they represent an important resource for local fishing communities. The committee agreed on the relevance of all these topics. It was pointed out that *Sardinella aurita* and *Sardina pilchardus* are already part of the work programme of the Working Group for small pelagic. This is also in line with the species identified by the GFCM. As far as fishing technology and small scale fisheries are concerned some work has already been initiated and the possibility to enlarge the scope of the project on these activities will be further explored.
57. The representative of FAO CopeMed II, Ms Hernandez, briefly indicated the common ground of cooperation between CopeMed II and MedSudMed. She mentioned the planned working group on *Coryphæna hippurus*. She also mentioned the proposal emerged during the joint meeting on *C. hippurus* (Malta, March 2016) to take advantage of national ichthyoplankton surveys for the identification of possible spawning areas for this species.

She also indicated the already established line of work between Tunisia and Algeria on the identification of species of joint interest and stock boundaries. She expressed the willingness to cooperate also on the methodological aspects of socioeconomic data collection, as recommended by the SAC.

58. When training courses were dealt with, the Committee reiterated the importance to provide opportunities all around the year, with several levels of learning, following the same approach adopted in the last year for the training on “R” co-organized by AdriaMed and MedSudMed. The possibility to outsource some of the training courses was debated; the Committee members recognized that trainings organized within the framework of the Projects are better tailored to the needs and priorities of the countries/scientists thus making them preferable.
59. In reference to the training course on bio-economic models, the FAO AdriaMed Information Officer informed the Committee on the next steps. The training will be open to MedSudMed participants and in the short term, the AdriaMed Project will circulate to the research institutions the software BEMTOOL and the technical guidelines for its use. A table with the main parameters useful to parameterize the software will be also circulated. This will provide the possibility to the participants, to be acquainted to the software before the training course that is foreseen in Autumn, tentatively before than the GFCM Working Groups.
60. The representative of Libya, Mr Hisham Ghmati, reiterated the need for specific *ad hoc* training for Libyan scientists. In this regard, the project will investigate the possibilities to organize training sessions taking advantage of the facilities and of the competences put at the disposal by the main scientific institutions in the Project area (e.g. INSTM of Tunisia and IAMC-CNR of Italy). The Committee expressed also the hope to be able to resume full scientific activities in Libya soon.
61. The representative of Malta, Ms Mifsud, by reiterating the importance of *Coryphaena hippurus* for national and subregional fisheries, recalled that several knowledge gaps on this species and related fisheries were identified. She referred to the outcomes of the *ad hoc* WG held in March 2016 and proposed to the Committee to have a permanent WG on this species. The Committee members were informed by the FAO CopeMed II staff that the CopeMed Project foresees the creation of a Working Group on *Coryphaena hippurus*. The Committee members agreed to continue the support of MedSudMed to activities on *Coryphaena hippurus* within a joint cooperative framework with the CopeMed II WG of this species.
62. The issue of ensuring straightforward coordination between Project activities and the activities of the new established GFCM-SAC Sub Regional Committee for the Central Mediterranean (SRC CM) was discussed. The participants concurred that in the future the project will present his work plan on the relevant subjects to the SAC meeting. The possibility to hold the next Project’s Coordination Committee in January-February instead of the current March-April was considered in order to streamline the decisional process.
63. After the discussion and comments provided on the content of Document CC/14/03, the Committee agreed on the programme of activities proposed and suggestions made by the participants for the coming period.

Other matters (Agenda item n.6)

64. Delegates and Meeting participants wished to express their thanks to the Maltese authorities for the hospitality provided.

Date and venue of the next Coordination Committee meeting (Agenda item 7)

65. Upon the kind invitation of the Libyan delegation, the next Meeting of the MedSudMed Coordination Committee will be planned to be held in Libya. The date and venue will be proposed in due time by the Project. This proposal was welcomed by the Meeting participants.

66. This report was adopted on 27th April 2016.

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Annotated Agenda

1. Opening of the meeting and election of the Chairperson

2. Adoption of the Agenda

3. Report on the Project's progress

The main activities and the Project's outputs will be presented and reviewed. Information will be given on the activities of the MedSudMed Working Groups, the on-going cooperative research work, the training sessions, the technical work in support to fishery management and the relationship and cooperation of the Project at Mediterranean level.

4. FAO General fisheries commission for the Mediterranean (GFCM) work plan for the next intersession period

The scientific and technical activities foreseen in the FAO GFCM work plan for 2016 will be presented. Discussion will be held on how the activities foreseen by the Project are integrated and will contribute to the GFCM Framework Programme (2013-2018) and to the work of the GFCM Sub-regional Committee for the Central Mediterranean Sea.

5. Development of the Project's Programme for the next period

The work plan of the Project will be outlined and discussed. Topics to be dealt with are those pertaining to the ongoing research programmes, the training activities, the joint activities directed toward the national capacity development and the preparatory work towards joint fishery management decisions in the project area. Particular attention will be given to the follow-up of the MedSudMed Working Groups activities and priorities, and to the technical support for the development of harmonised fishery management strategies. The international cooperation, the relationship with other projects in the south-central Mediterranean Sea, the relationship with the Donors, with the FAO GFCM and other topics brought forth by the Committee will be discussed. The Committee will be asked to provide the Project with an appraisal and orientation of the programme presented and/or any other contribution.

6. Other matters

7. Adoption of the report

8. Date and venue of the next Coordination Committee meeting

List of Documents

FAO-MedSudMed: CC14/01	Provisional annotated agenda
FAO-MedSudMed: CC14/02	Report on Project's Progress (April 2015 – March 2016)
FAO-MedSudMed: CC14/03	Development of the Project's Programme
FAO-MedSudMed: CC14/Info 01	Provisional list of participants
FAO-MedSudMed: CC14/Info 02	Report of the Thirteenth Meeting of the Coordination Committee. <i>MedSudMed Technical Documents N.34</i>
FAO-MedSudMed: CC14/Info 03	MedSudMed Working Group on Demersal Fisheries Resources in the south-central Mediterranean Sea (FAO HQ, Rome, 14-18 September 2015) – Meeting memorandum
FAO-MedSudMed: CC14/Info 04	MedSudMed Study Group for Stock Assessment and Technical Meeting on Elasmobranchs in the south-central Mediterranean Sea (FAO HQ, Rome, 19-23 October 2015) – Meeting memorandum
FAO-MedSudMed: CC14/Info 05	- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Parapenaeus longirostris</i> . Presented at the GFCM-SAC – Working Group on Stock Assessment on Demersal Species (Rome, 25-28 November 2014) - Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Merluccius merluccius</i> . Presented at the GFCM-SAC – Working Group on Stock Assessment on Demersal Species (Rome, 25-28 November 2014)
FAO-MedSudMed: CC14/Info 06	MedSudMed technical meeting towards the development of management measures in the south-central Mediterranean Sea demersal fisheries (FAO HQ, Rome, 25-26 January 2016)
FAO-MedSudMed: CC14/Info 07	MedSudMed Working Group on Demersal Elasmobranchs - Terms of References
FAO-MedSudMed: CC14/Info 08	MedSudMed Study Group for the joint processing of small pelagic data in the south-central Mediterranean Sea (Tunis, Tunisia, 11-13 May 2015) – Meeting memorandum
FAO-MedSudMed: CC14/Info 09	MedSudMed Working Group on Small Pelagic Fishery Resources in the south-central Mediterranean Sea (Tunis, Tunisia 30 November - 02 December 2015 – Meeting memorandum
FAO-MedSudMed: CC14/Info 10	CopeMed II – MedSudMed joint technical workshop on <i>Coryphaena hippurus</i> fisheries in Western-Central Mediterranean
FAO-MedSudMed: CC14/Info 11	- Major activities of the FAO Regional Projects. Documents presented at the GFCM 38 th Annual Session (FAO HQ, Rome, 19 - 24 May 2014) - Major activities of the FAO Regional Projects. Documents presented at the GFCM-SAC 18 th session (FAO HQ, Rome, 24-27 March 2015)
FAO-MedSudMed: CC14/Info 12	List of Documents

Report on the Project's Progress (May 2015 – April 2016)

Introduction

This paper provides an overview of the main activities carried out by the Project MedSudMed between May 2015 and March 2016, including meetings, training, research activities and technical assistance provided to the participating countries, as well as the cooperation established with the FAO General Fisheries Commission for the Mediterranean (FAO GFCM), its Scientific Advisory Committee (SAC) and Sub-Committees and other relevant institutions. The work programme and recommendations of the 13th meeting of the MedSudMed Coordination Committee (Rome, Italy, 23-24 April 2015; CC/14/Info 02) were implemented.

The activities carried out during the inter-committee period comply with the methodological framework of the Project and its mandate for the current phase. To some extent, the work plan in the intersessional period was affected by the political situation in the region that sometimes resulted in changes to the schedule and calendar of activities. This report details the main outputs of the Project activities and the results achieved with direct reference to the following Project Objectives:

- 1) Support 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;
- 2) Improve the scientific knowledge on fishery resources and their ecosystem in the Project area through the finalization of the research activities program;
- 3) Strengthen the national expertise through on-the-job training and working groups, and support the national research institutions in enhancing scientific expertise;
- 4) Strengthen and support scientific cooperation between the different experts and institutions involved in the Project activities;
- 5) Strengthen the technical and scientific cooperation at Mediterranean level, among the participating countries and between the Project, the FAO General Fisheries Commission for the Mediterranean (FAO GFCM) and other FAO Regional Projects.

The activities presented are grouped according to four main components, as follows, which may cover one or more of the Project Objectives:

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

1. Cooperative research programmes and Working Groups

In 2015 the Project implemented a series of activities dealing with field work and data processing methodology.

The Project, in close cooperation with the research participating institutes, initiated to implement the work plan for the medium and long term activities identified during the 11th MedSudMed Coordination Committee (Malta, April 2013). The work plan was also in agreement with the conclusions of the FAO independent evaluation and Project mandate.

1.1. MedSudMed Component on Demersal Resources

During the inter-committee period, the work carried out within this Project component focused on planning field work, promoting discussion on emerging issues and priorities on fisheries between national experts, joint data analysis, finalisation of technical reports and technical documents. In addition, specific work was developed to promote discussion among participating countries in support to the definition of agreed management strategies for fisheries exploiting shared resources in the Project area as follow up of the priority emerged during the GFCM plenary session (the latest being the 39th session held in Milan, Italy, from 25 to 29 May 2015). In this view, synergies were sought with the GFCM, which is the final forum for discussion on fisheries management.

- Working Group on Demersal Fisheries Resources (WG-DEM)

The Project organised the annual meeting of the MedSudMed Working Group on Demersal Fisheries Resources (WG-DEM). The meeting was held on 14-18 September 2015 in Palermo (Italy). One session of the WG-DEM was jointly organised with the FAO Project CopeMed II to further promote discussion and optimise human and financial resources. The WG-DEM was attended by 16 researchers from all the research institutes involved in the Project and one expert from the Centre National de Recherche et de Développement de la Pêche et l'Aquaculture of Tipaz, Algeria (CNRDPA). Staff of the FAO General Fisheries Commission for the Mediterranean (GFCM) Secretariat, FIRF, MedSudMed and CopeMed II also attended the meeting. The WG-DEM focused on: i) the technical discussion in support of management strategies identification for demersal fisheries in the south-central Mediterranean in view of the issues raised during the 39th GFCM session for 2015-16; ii) the development of a case study on small-scale fisheries (SSFs) in the south-central Mediterranean in preparation of the GFCM regional conference on SSF (Algeria, March 2016); iii) the appraisal of the state of demersal fish stocks (*P. longirostris*, *M. merluccius*, Aristaeid shrimps and *Mullus* species) and fisheries in the MedSudMed Project area by integrating all existing data; iv) socio-economic data collection for fisheries appraisal focusing on *P. longirostris* and *M. merluccius* fisheries; v) possible joint studies on demersal elasmobranchs; and vi) possible options for disseminating results of joint studies in the south-central Mediterranean Sea. Regarding the *P. longirostris* and *M. merluccius* stock assessment, data from Italy, Malta and Tunisia were shared and the best approaches to run a joint exercise were identified. Experts agreed to run an extended survivors analysis (XSA) and to include in the results of the study also short term forecasts. Regarding *Aristeomorpha foliacea*, *Aristaeus antennatus*, *M. barbatus* and *M. surmuletus*, existing data were explored and discussion on stock boundaries and biological parameters was initiated. Specific consideration was given to the issues raised by the Scientific Advisory Committee (SAC) and GFCM for 2015-16 referring to the adoption of *ad*

hoc management measures in the south-central Mediterranean Sea. The stock assessment were prepared and fine-tuned during the MedSudMed Study Group for Stock Assessment (SG-SA, FAO HQ, Rome, 19-23 October 2015). The possibility to provide comprehensive information to support spatial based management planning was discussed. In this view, the WG agreed to: gather and circulate detailed information on existing tools for population dynamic and bio-economic simulations (e.g. SMART, BEMTOOL); compile data for modelling; define, with all relevant stakeholders, management scenarios to be tested on *P. longirostris* and *M. merluccius* fisheries during a MedSudMed *ad hoc* meeting.

In the light of the preparatory work ongoing for the next GFCM Regional Conference on small scale fisheries (Algeria, March 2016), participants explored existing information and data for the preparation of a joint contribution document covering the entire MedSudMed area.

Discussion was also held on the way to progress toward the establishment of a joint Working Group on elasmobranchs (WG-ELASMO) in the south-central and western Mediterranean Sea. Terms of References outlining the scope, priorities and short-medium term programme were dealt with.

Regarding the definition of shared stocks between Tunisia and Algeria, options to identify stock units in the CopeMed II and MedSudMed areas and priority issues to be addressed were discussed. The preparation of technical and scientific documents summing up the approach used and outcomes achieved in the joint studies on demersal fisheries resources were discussed. In particular, the proposal to publish scientific results on a special issue of a scientific journal was explored (CC/14/Info 03).

- *Study Group for Stock Assessment and Technical Meeting on Elasmobranchs in the south-central Mediterranean Sea (SG-SA)*

Considerable effort was made by the Project and the research institutes in the south-central Mediterranean Sea to progress toward the appraisal of the state of main fisheries target species. Moreover, taking into account the outcomes of the WG-DEM and the recommendations of the 13th Project Coordination Committee, the Project initiated the process toward the characterisation of the stock status, spatial distribution and abundance of demersal elasmobranchs in the Project area. In this view, the *MedSudMed Study Group for Stock Assessment (SG-SA)* and *Technical Meeting on Elasmobranchs (Technical Meeting)* were held in parallel at FAO HQ, Rome, from 19 to 23 October 2015. The meetings were attended by 15 experts from all the Project participating institutions. Staff of the GFCM Secretariat, FIRF, AdriaMed and MedSudMed also attended the meeting. The meetings were organised in separate and joint sessions: the separated sessions focused on specific issues for each group; the joint sessions were instrumental to promote discussion and exchange views among experts on chosen approaches, discuss results and draw overall conclusions.

During the Study Group for Stock Assessment: i) the stock assessment of *Parapenaeus longirostris* and *Merluccius merluccius* in the MedSudMed area (south-central Mediterranean Sea) were jointly updated; ii) existing data at national level on *Mullus barbatus*, *M. surmuletus*, *Aristaeomorpha foliacea*, *Aristeus antennatus* were explored; iii) preliminary stock assessment exercises for selected species were performed; and iii) follow up in view of the forthcoming meeting of the Working Group on Demersals of the Scientific Advisory Committee (SAC-WG) of the GFCM (23-28 November 2015) were planned. The preliminary stock assessments exercises for *Parapenaeus longirostris* and *Merluccius merluccius* as

prepared according to the outcome of the WG-DEM (CC/14/Info 03) were presented. Data, method and assumptions used were reviewed. The results obtained and robustness of analysis were discussed. Options to further improve the analysis were agreed on. To take the best possible advantage of the data set available, the participants agreed to finalise the stock assessment of the two species by applying both extended survivors analysis (XSA with short term forecasts) and virtual population analysis (VPA) models. Preliminary stock assessment exercises for *Mullus barbatus* in GSAs 15 and 16 (extended survivors analysis), *M. barbatus* and *M. surmuletus* in GSAs 12, 13 and 14 (pseudo-cohort analysis under equilibrium conditions) were carried out. The assessment produced for *P. longirostris*, and *M. merluccius* GSAs 12-16 and *M. barbatus* GSAs 15-16 were presented and discussed at the meeting of the Working Groups on Demersals of the Scientific Advisory Committee (SAC-WG) of the GFCM, GFCM HQ, Roma, Italy, 23-27 November 2015 (CC/14/Info 05).

During the Technical Meeting: i) the most suitable approach for the standardization and joint processing national bottom trawl survey data were identified; ii) a joint exercise using all national data for mapping spatial distribution was initiated; iii) fishery dependent and independent data for planning a stock assessment exercise on selected elasmobranchs were explored. The participants were also called to preliminary define the objectives and a medium term work plan for a MedSudMed Working Group on Elasmobranchs, on the basis of the outcomes of the WG-DEM. Preliminary distribution maps were prepared for elasmobranchs pooling together bottom trawl survey data from Italy, Malta, Tunisia and Libya (CC/14/Info 04). The maps were prepared to foster discussion during the session devoted to elasmobranchs of the SAC-WG (GFCM HQ, Roma, Italy, 23-27 November 2015).

- *Technical discussion in support of fisheries management*

In 2010 the MedSudMed Coordination Committee (Italy, May 2010), following the successful cooperation established at scientific level, underlined the important role that the Project may have in promoting and supporting the technical discussion on the harmonisation of management strategies in the Project area (south-central Mediterranean Sea). The development of internationally agreed tools like multi-annual plans for managing fisheries exploiting shared resources was raised at GFCM level and it assumed more and more importance in recent years. In 2013 sub-regional case studies for developing fisheries management plans were identified by the GFCM. To develop the case studies synergies between GFCM and FAO Mediterranean Fisheries Projects were sought. Regarding the MedSudMed Project area, the discussion to develop a fisheries management plan for fisheries exploiting *P. longirostris* and *M. merluccius* was initiated. During the 39th session of the GFCM (May 2015) the role of MedSudMed in contributing to address technical issues relevant for the definition of fisheries management strategies was further highlighted and preliminary measures for the management of demersal fisheries in the south-central Mediterranean Sea were adopted as GFCM Recommendation.

With the objective to promote a participatory approach and disseminate scientific data and discussion outputs, MedSudMed organised two technical meetings involving all fisheries stakeholders of all participating countries: St. Julian, Malta 24-26 June 2014, Tunis, 17-18 March 2015. A further meeting was organised at FAO HQ, Rome on 25-26 January 2016. Representatives of fisheries associations, fisheries administrations and scientists of Italy, Libya, Malta and Tunisia joined the meetings. The overall objective of the meetings was to contribute to the process of the development of an internationally agreed multi-annual management plan for fisheries targeting *P. longirostris*, *M. merluccius* in the south-central

Mediterranean Sea in line with the conclusions of the 38th and 39th plenary sessions of the FAO GFCM (Italy, May 2014 and May 2015). The meetings provided an opportunity for all fisheries stakeholders to share information, knowledge and experiences, to compare experience and to identify priorities among all the MedSudMed participating countries. The meetings provided also the possibility to discuss on potential management strategies to be outlined in a multi-annual management plan. In this view, during the meeting held in January 2016 the participants agreed on possible scenarios to be tested using simulation tools for assessing their likely consequences on fish stocks and fisheries (CC/14/Info 06). The scenarios were used to feed discussion during the GFCM SAC Workshop on bioeconomic assessment of management measures and Subregional Committees for the Central Mediterranean (SRC-CM, Rome, Italy, 01-05 February 2016).

- *Support to discussion on small scale fisheries*

Considerable attention was devoted to small scale fisheries (SSF) at global and Mediterranean level in recent years. SSF in the Mediterranean Sea account for more than 80% of commercial fishing fleets in terms of number of fishing units and employees. In 2013, to stimulate discussion and raise awareness on the importance of SSF at regional level, the GFCM organised the first regional symposium on SSF (Malta, December 2013) with the support of the FAO Regional Projects AdriaMed, CopeMed II, EastMed and MedSudMed. As follow up of the meeting, the 13th Coordination Committee recommended MedSudMed to promote joint actions for the appraisal of SSF, with the final goal to provide technical and scientific information in support of fisheries management. In this view, the Project dedicated one session of the Working Group on Demersal Fisheries Resources (FAO HQ, Rome, 22-26 September 2014 and Palermo, Italy, 14-18 September 2015, CC/14/Info 03) to review the current knowledge and status of small-scale fisheries (SSFs) in the south-central Mediterranean SSFs. The experts during this WG-DEM agreed on the content of a document depicting the current information biologic, socio-economic, management and governance aspects in three areas in the south-central Mediterranean Sea subject to specific management rules and in which the SSF plays a major role: the Egadi (Italy), Kerkhenna (Tunisia) and Malta Islands. The document produced was presented during the GFCM Regional conference “*Building a future for sustainable small-scale fisheries in the Mediterranean and the Black Sea*” (7-9 March 2016, Algiers, Algeria).

- *Pilot action on socio-economic data collection in fisheries exploiting P. longirostris and M. merluccius in Tunisia*

According to a request formulated by representatives of the INSTM during the 13th Coordination Committee meeting (Rome, Italy, April 2015), the Project designed and initiated a pilot action on fisheries socio-economic data collection in the fishing port of La Goulette, Tunis, in cooperation with the INSTM. The aim of this pilot activity is to verify and test the feasibility of socioeconomic survey at national scale and to provide a description of the main socio-economic aspects for the fisheries exploiting *P. longirostris* and *M. merluccius*. The gathered information will be instrumental to: i) provide national authorities with updated information on deep water trawl fisheries; ii) support the country in being compliant with GFCM requirements in terms of data submission; and iii) to gather basic information necessary for the proper assessment and bio-economic evaluation of *P. longirostris* and *M. merluccius* fisheries in the south-central Mediterranean in view of the preparation of a multi-

annual management plan. A sampling scheme for the socio-economic survey was drafted and consolidated after discussion with the local administrations and data collectors. A training exercise was organized and held in Tunis on 11-13 January 2016 for 6 data collectors. The training focused on the objective of the survey and basic approaches to interview fishermen, vessel's owners and workers in all the ports of Tunisia, as well as to record and store data in electronic format.

1.2. MedSudMed Component on Small Pelagic fish

As for the previous years and following the requests formulated during the MedSudMed Coordination Committee meetings (April 2014, April 2015), efforts were made by the Project to pursue: the improvement of expertise on small pelagic fisheries resources; the harmonisation of methodologies for data collection at sea; and the monitoring of areas not regularly covered by national surveys targeting small pelagic fishery resources.

- Working Group on Small Pelagic Fishery Resources

In the inter-committee period, particular importance was given to enlarging and consolidating the group of researchers involved in studies on small pelagic fish. In this framework, two meetings of the MedSudMed Working Group on Small Pelagic Fishery Resources (WG-SP) were organised in Tunis, Tunisia, on 11-13 May 2015 (May meeting) and in Capo Granitola, Italy, on 30 November-04 December 2015 (December meeting). On occasion of the May meeting, the Study Group for the joint Processing of small pelagic data in the south-central Mediterranean Sea was held.

During the May meeting, national experts: i) made further progress toward the preparation of a common data set for acoustic and ichthyoplankton data as gathered during national surveys in Italy, Libya, Malta and Tunisia; ii) carried out a joint exercise to map areas of concentration of adults, eggs and larvae of *Engraulis encrasicolus* in the south-central Mediterranean Sea and to define potential connections among them; iii) initiated joint discussion on the preparation of a series of scientific and technical documents on small pelagic fish and environmental factors affecting them. (CC/14/Info 08).

During the December meeting: i) the work done and results achieved in the last years in terms of joint acoustic, ichthyoplankton and oceanic data processing were reviewed; ii) the state of joint scientific and technical documents to be published to disseminate the results of joint activities was assessed; iii) priorities concerning joint studies and activities on small pelagic stocks and fisheries to be carried out in the framework of MedSudMed were identified. In addition, during the meeting, discussion initiated toward the assessment of stock status and fisheries of *Trachurus* spp. in the south-central Mediterranean Sea. In this view existing data were reviewed and a work plan was preliminary agreed on (CC/14/Info 09).

- Joint surveys at sea

According to the recommendations of the 11th and 12th meeting of its Coordination Committee, the Project was called to support the implementation of joint surveys at sea. In this view, the organisation of an inter-ship comparison for acoustic surveys involving the Tunisian and Italian research vessels, R/V Hannibal and R/V Dallaporta was foreseen for summer 2015. The technical aspects concerning the sampling scheme, the dates of the work at

sea were discussed and agreed on. The administrative procedures to provide the necessary authorisation for the surveys were also initiated. However, due to the unforeseeable unavailability of the R/V Hannibal, the inter-ship comparison was postponed. With the objective to detect the problems that limited the efficiency of the R/V Hannibal, the Project organised a technical mission to the Port of La Goulette (October 2015) in collaboration with the technical staff of the INSTM responsible for the vessel.

2. National Capacity development and training

During the intersessional period, considerable effort was devoted to support the national capacity development, mainly through training courses following specific requests of the participating institutes. The courses were an opportunity to strengthen scientific collaboration and to exchange competencies between institutes, as they involved scientists belonging to the network that has been created and consolidated by the Project. Some of the training courses allowed for joint processing of survey data and aimed not only at enhancing capacity development but also at producing scientific information directly related to the Project activities (e.g. stock assessment, mapping of small pelagic eggs, larvae and juveniles abundance). Moreover MedSudMed, in cooperation with the other FAO Projects in the Mediterranean and GFCM, sought synergies on common training activities to broaden the perspective of the actions planned and provide wider group of young Mediterranean experts with the possibility to develop harmonised skills and to discuss issues of common interest.

In this context, the following training activities have been carried out and/or supported:

- On-the-job training on the processing of acoustic and ichthyoplankton data during the MedSudMed Working Group on small pelagics (Tunis, Tunisia, 11th-13th May 2015)
- MedSudMed - Training course Introduction to the “R” system, FAO HQ, Rome, Italy, 07-11 September 2015;
- Training course on fisheries socio-economic data collection (Tunis, Tunisia, 12-14 January 2016).

3. Regional cooperation

As indicated in the last meetings of the Coordination Committee and by the FAO Independent Evaluation, the Project strengthened liaisons with the Donors (MiPAAF and EU-DG-MARE) and intensified the communication flow with them. In the intersessional period, a series of coordination meetings were held at the MiPAAF headquarters. Occasion was taken during the GFCM 39th session (May 2015), and other informal meetings were held to discuss and coordinate with the EU-DG-MARE staff for the presentation of new grant applications for additional funds. The liaison with the Donors lead to: i) strengthened coordination; ii) improved information flow; iii) more efficient planning of Project funding.

The reinforcement of regional cooperation was encouraged by the Project through the participation of regional experts in several workshops, training exercises, meetings, seminars and conferences organised in the Mediterranean area. Relations were constantly maintained with the researchers and the institutes of the MedSudMed area for the discussion of the

Project's activities, planning and organization of the working groups and comments on the publications produced. Several informal meetings with national experts and focal points were held through the year to preliminarily discuss technical issues and plan possible activities. In this view, and to facilitate the participation of experts from the Marine Biology Research Centre of Tajura (MBRC, Libya) to Project activities, considerable effort was devoted by Project staff for the issuing of a multi-entry Schengen VISA to the Director and three experts from the MBRC for the period September-December 2015. The work resulted in the full participation of MBRC staff to all activities and meetings organised in that period.

In order to strengthen international and regional cooperation, the Project operated closely with the FAO Regional Projects AdriaMed, CopeMed II, EastMed, and Med-Sea Large Marine Ecosystem (MedSea-LME). In particular, the Project interacted closely with AdriaMed³, with support provided on technical issues and administrative matters. In this view, the Project also participated in the 17th AdriaMed Coordination Committee meeting (Slovenia, April 2016); ii) AdriaMed Working Group on small pelagic and demersal fisheries resources (Italy, July and October 2015 respectively).

Cooperation was also established with the FAO Project CopeMed II to optimise the use of human and financial resources. MedSudMed staff participated to the 6th EastMed (FAO HQ, Rome, April 2015) and 8th CopeMed II (Malaga, Spain, May 2015) Coordination Committees. The Project actively cooperated with CopeMed II for the organisation of the Joint Working Group on Demersal Fisheries Resources (WG-DEM, 14-18 September 2015, CC/14/Info 03) and of the technical meeting on *Coryphaena hippurus* (March 2016). In addition, the project promoted, in collaboration with CopeMed II, Algeria and Tunisia bilateral discussion for the identification of species of joint interest for stock assessment purpose. In this view discussion initiated in September 2015 on occasion of the MedSudMed WG-DEM and continued in Rome, Italy, on February and in Algeria on March 2016, as side discussion in occasion of the *GFCM Sub-regional Committee on central Mediterranean* and of the *GFCM Regional Conference on Small Scale Fisheries* respectively. The meeting lead to the identification of two target species, one pelagic (sardine) and one demersal (hake), for initiating joint studies. In addition, several coordination meetings were also held with the other FAO Regional Projects AdriaMed, CopeMed II and EastMed throughout the year (the last being in March 2016) to consolidate and develop common activities.

In the framework of the FAO decentralisation process, MedSudMed is reinforcing collaboration with the FAO offices for north African (FAO SNE) and Near East (RNE) by: i) liaising periodically; ii) supporting joint initiatives on fisheries; and iii) sharing information on the activities and results of the Project. Strong cooperation with FAO Oman and FIPI was also established. In this framework, following a request from the Director General of the Fisheries Department, Ministry of Agriculture and Fisheries Wealth and of the Marine Sciences and Fisheries Centre (MSFC), Sultanate of Oman, the Project staff prepared a proposal to develop a version of ATrIS (AdriaMed Trawl Information System) suited to the recent and historical geo-referenced fisheries data in Oman: OTrIS. The OTrIS project was

³ Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea

signed in February 2014 and run for 18 months and of the Marine Sciences and Fisheries Centre (MSFC).

Cooperation was further sustained with the GFCM and the GFCM Subsidiary bodies (CC/14/Info 11). Several informal meetings of coordination were held with the GFCM Secretariat staff back to back to FAO GFCM events, in order to strengthen collaboration and to find synergies. Among others the following meetings were held:

- Coordination meetings on the preparation of the “Regional Conference on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea” (GFCM HQ 30 April 2015)
- Preparatory meeting with GFCM Secretariat and EC-DGMARE on the activities to be carried out in the framework of the GFCM framework and AdriaMed in support of the implementation of management plans for small pelagic fishery in the Adriatic Sea (GFCM HQ, Rome, Italy June 2015).
- Preparatory meeting with the GFCM Secretariat for the preparation of the SubRegional Committee on the Adriatic Sea to follow up on the implementation of management measures in the Adriatic Sea (FAO HQ, Rome, Italy July 2015, January 2016)
- GFCM SAC Coordination meeting (GFCM HQ, Rome, Italy 18 January 2016)

MedSudMed continued to support the activities of the GFCM by providing scientific contributions for discussion and by participating and funding the participation of experts in GFCM meetings. Due to the overlap in geographical areas covered by MedSudMed and CopeMed II, the two Projects agreed to coordinate the support to the participation of national scientists in the meetings organised by the GFCM. Overall, MedSudMed supported the participation of about 30 experts to the following 10 meetings held in the intersession period (CC/14/Info 11).

- Working group on VMS and related control systems in the GFCM Area of Application- Marrakech, Morocco 20-21 April 2015
- Working Group on IUU Fishing in the GFCM Area - Marrakech, Morocco 22-24 April 2015
- GFCM CAF Committee on Administration and Finance (CAF)- 6th Session- Milan, Italy 25-29 May 2015
- GFCM CoC Committee on Compliance (CoC) - 9th Session FAO HQ, Milan, Italy 25-29 May 2015
- General Fisheries Commission for the Mediterranean - 39th session - Milan, Italy 25-29 May 2015
- Working Group on Demersal and Small Pelagics, GFCM HQ, Rome, Italy 23-28 November 2015;
- Workshop on bioeconomic assessment of management measures, GFCM HQ, Rome, Italy, 01-03 February 2016;
- SAC Subregional committees (Central Med), GFCM HQ, Rome, Italy, 3-5 February 2016;
- GFCM Regional Conference “Building a future for sustainable small-scale fisheries in the Mediterranean and the Black Sea”, Algiers, Algeria, 7-9 March 2016;
- GFCM-Scientific Advisory Committee (SAC) - 18th Session, Nicosia, Cyprus, 14-16 March 2016.

4. Project Communication

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

Since its publication, the Project's website has been continually updated. A general description of the MedSudMed Project is available, as well as information on the recent or forthcoming events organized by the Project, links to the Research Institutes participating in the Project, the Mediterranean Regional Projects or to sites regarding GIS, databanks and Research Institutions. The specific section describing the main activities carried out in the framework of the Project is under renewal. In this context the Project continued the adaptation of its web pages into Italian and Arabic.

The list of Technical Documents available on the Project web site has been updated and more than 20 MedSudMed Technical Documents are now available as .pdf files. Over the last year, an average of 1150 pages was visited each month and around 510 documents are downloaded from the site each month.

4.2. Technical Documents

The MedSudMed Publications are issued as series of Technical Documents (GCP/RER/010/ITA/MSM-TD-00) and of Scientific Reports (GCP/RER/010/ITA/MSM-SR-00) related to meetings and research organised or conducted within the framework of the Project. The list of Technical Documents available on the Project web site has been updated and more than 25 MedSudMed Technical Documents are now available as .pdf files. The MedSudMed Technical Documents are included in the ASFA (Aquatic Sciences and Fisheries Abstracts) database. The most recent Project publications are also disseminated through the Project's mailing list. Five technical document and two scientific reports related to meetings and specific research activities promoted by the Project were finalised and published:

- MedSudMed Working Group on Demersal Fisheries Resources in the south-central Mediterranean Sea (Palermo, Italy, 14-18 September 2015). GCP/RER/010/ITA/MSM-SR-5. *MedSudMed Scientific Reports*. No 7: 21 pp.
- MedSudMed Working Group on Small Pelagic Fishery Resources in the south-central Mediterranean Sea (Capo Granitola, Italy 30 November – 04 December 2015). GCP/RER/010/ITA/MSM-SR-6. *MedSudMed Scientific Reports*, No 8: 18 pp.
- Bonanno, A., Zgozi, S., Basilone, G., Goncharov, S., Popov, S., Hamza, M., Fontana, I., Giacalone, G., Pulizzi, M., Barra, M., Genovese, S., Nfate, A., Assughayer, M., Ferreri, R., Bahri, T., Aronica, S., El Turki, A., Ceriola, L., Patti, B., Mazzola, S. 2015. Report of the MedSudMed Acoustic Survey: Libyan continental shelf – south-central Mediterranean Sea (14 August – 06 September 2008). GCP/RER/ITA/MSM-TD-30. MedSudMed Technical Documents, No 30: 54 pp.
- Bonanno, A., Zgozi, S., Rumolo, P., Haddoud, D.A., Bonomo, S., Sprovieri, M., Hamza, M.A., Cuttitta, A., Al Turki, A., Fatah, A., Basilone, G., Placenti, F., Genovese, S., De Luca, B., Leonardi, M., Borghini, M., Fontana, I., Giacalone, G., Azzaro, F., Patti, C. 2015. Report of the MedSudMed Oceanographic Survey: Libyan continental shelf – south-central Mediterranean Sea (15 – 31 July 2008). GCP/RER/ITA/MSM-TD-31. MedSudMed Technical Documents, 31: 132 pp.

- Fiorentino, F., Ben Hadj Hamida, O., Ben Meriem, S., Gaamour, A., Gristina, M., Jarboui, O., Knittweiss, L., Rjeibi, O., Ceriola, L. 2015. Synthesis of information on some demersal crustaceans relevant for fisheries target species in the south-central Mediterranean Sea. GCP/RER/010/ITA/MSM-TD-32. *MedSudMed Technical Documents*, No 32: 118 pp.
- MedSudMed. 2012. Report of the Twelfth Meeting of the Coordination Committee. FAO-MiPAAF Assessment and Monitoring of the Fisheries Resources and Ecosystems in the Straits of Sicily. GCP/RER/010/ITA/MSM-TD-34. *MedSudMed Technical Documents*, No 34: 37 pp.
- Bonanno, A., Assughayer, M., Barra, M., Basilone, G., Fontana, I., Genovese, S., Nfate, A., Popov, S., Pulizzi, M., Zgozi, S. 2015 (Advance copy). Report of the MedSudMed Acoustic Survey: Libyan continental shelf (south-central Mediterranean Sea) 06 August – 02 September 2010 GCP/RER/ITA/MSM-TD-37. *MedSudMed Technical Documents*, No 37: 112 pp.
- Bonanno A., Zgozi S., Rumolo P., El Turki A., Cuttitta A., Hamza M.A., Basilone G., Uheshi O., Placenti F., Bara M., Genovese S., Assugayer M., De Luca B., Leonardi M., Fontana I., Giacalone G., Azzaro F., Patti C., del Core M., Ceriola L. 2015 (Advance copy). Report of the MedSudMed Oceanographic Survey: Libyan continental shelf - south-central Mediterranean Sea (15 – 30 July 2010). GCP/RER/ITA/MSM-TD-38. *MedSudMed Technical Documents*, No 38: 91 p

Development of the Project's Programme

Introduction

The aim of this document is to provide the Coordination Committee (CC) members with elements for discussion on the MedSudMed Project Work Programme for the coming year.

The MedSudMed Project has been operative since April 2001 with an initial mandate of 5 years (MedSudMed phase I). During the 5th MedSudMed Coordination Committee meeting (2006), the Committee reviewed the conclusions and recommendations made by the Project's Mid-term Review and recommended a four-year extension period from 2006 to 2010 (MedSudMed II phase). Following a technical review conducted in 2009, the Italian Donor, the Ministry of Agriculture Food and Forestry Policies (MiPAAF), confirmed the extension of its financial support to the Project activities. Additional funds were also provided to MedSudMed (2011-2013) by the Regione Siciliana (Italy) to carry out specific actions on crustaceans. Since 2012 the Project has been co-funded by the Directorate General for Fisheries and Maritime Affairs of the European Commission (EU-DG Mare). At the last Coordination Committee meeting (Rome, Italy, 16st 17th April 2015), the Italian Donor confirmed the extension of its financial support to the Project activities for the whole 2016. Therefore, this work plan covers approximately 12 months of activities. The possibility of further extension is under discussion with both Donors MiPAAF and EU-DGMARE.

The activities proposed in this document take into account the objectives and results achieved so far and the recommendations received during the 13th Coordination Committee meeting (16-17 April 2015, Rome, Italy), the indications gathered from the countries during a series of informal meetings held with the national staff and with the National Focal Points, and indications raised from the Project's Working Groups throughout the intersessional period. The scientific cooperation established within the framework of the FAO General Fisheries Commission for the Mediterranean (GFCM) is also considered. In addition, some of the activities take into account the indications provided by the FAO External Evaluation of the Project carried out March-June 2012 by an independent FAO team.

All the activities planned are integrated and will contribute to the development of the GFCM Framework Programme (2013-2018), and in particular to the Work Programmes 1, 2, 3 and 4.

The final work plan will take into due account the recommendations of the 14th Coordination Committee meeting, in accordance with the priorities expressed by the countries on each activity and directly linked to the Project's budget availability. Moreover, the work plan will take also into due account the indication and possible recommendation of the 40th session of the GFCM (Malta, May 2016), including the indication of the GFCM-SAC Sub-Regional Committee for Central Mediterranean.

WORK PLAN

For the coming period the Project, in collaboration with the participating institutions, will focus its attention on research activities in support of fisheries management, the filling of

scientific gaps on fisheries, fisheries resources and the ecosystem, the finalisation of pending publications and the training component.

In order to facilitate the presentation of the work plan for the next 12 months, all the activities are organized into five main themes:

- a. Demersal fisheries resources;
- b. Small pelagic fisheries resources;
- c. Training and national capacity development;
- d. Web site and information system;
- e. Regional cooperation.

Moreover, efforts have been made in coordination with the participating countries, all the FAO Regional Projects operating in the Mediterranean and the GFCM, to draft a tentative common calendar of activities, in order to avoid any overlap, to find synergies and strengthen the coordination among the activities carried out. Synergy with the FAO Project CopeMed II will also be sought in this respect.

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.

a) Demersal fisheries resources

In the coming period, effort will be devoted by the Project to promote and support the development of a common view on the management of demersal fisheries resources. In particular, in synergy with the GFCM, most of the technical work in the medium term shall be focused to support the development of a management plan for fisheries exploiting *Parapenaeus longirostris* and *Merluccius merluccius* in the south-central Mediterranean Sea.

- Support to Socio-economic data collection

The Project will continue to support the collection of fisheries related data. In January 2016, as follow up of the discussion held during the MedSudMed Working Group on Demersal Fisheries Resources and of the priority emerged to integrate socio-economic into fisheries appraisal, the Project initiated a programme for fisheries socio-economic data collection in Tunisia. On a pilot scale, the programme focused on demersal fisheries targeting *Parapenaeus longirostris* and *Merluccius merluccius*. For the coming period, the Project together with the DGPA and INSTM, will investigate the possibility to expand the data collection programme to a selected small scale fisheries segment, and/or to a selected sub-region. As for the pilot action, the work will include a capacity development component, the data collection in the field and, in the short term, the estimation of selected indicators to describe the main socio-economic features for the selected fisheries. The data gathered will be instrumental to complete the appraisal of the state of *Parapenaeus longirostris* and *Merluccius merluccius* and related fisheries and to model their dynamics under different management scenarios. Overall, these activities will contribute to providing the tools for planning and managing national capture fisheries and will support the country to comply with the GFCM

recommendation on data collection (Recommendation GFCM/33/2009/3) and according to the GFCM-DCRF (Data Collection Reference Framework).

- Support to fisheries independent data collection

The discussion on possible implications of spatial based fisheries management strategies calls for accurate information on sensitive areas for target species and the use of geo-referenced fisheries independent data. A number of surveys were carried out in the last 20 years in the south-central Mediterranean Sea using different research vessels and protocols. A MedSudMed inter-calibration exercise was carried out to ensure that national survey data are standardised and ready for joint processing. However, in recent years the area covered by scientific bottom trawl surveys has been significantly reduced, hampering the possibility to complete the mapping of fisheries resources abundance in the entire MedSudMed area and to provide fisheries independent data in support of fisheries assessment and management. The Project will explore the possibility to enhance the collection of standardised fisheries independent data either in terms of area coverage or frequency of sampling.

- Monitoring of bycatch for bottom trawl fisheries

The selection of the model/s to be used for the assessment of fish stocks and fisheries is generally driven by the amount and type of commercial catch data available. Catch data collection generally takes place at landing site thus risking to miss information on discard and bycatch and, ultimately, to underestimate total catch. Recently, specific programmes have been put place at national level to overcome this limit; most of them involves the direct observation on board of fishing vessels. However, in the south-central Mediterranean, the coverage of such programmes is only partial and further effort will be necessary to cover the entire area. Following the request formulated during the WG-DEM (Italy, September 2015, CC/14/Info 03), MedSudMed will explore the possibility to support the monitoring on board of bottom trawl vessels in Tunisia. The monitoring will provide useful information and data on catch overall, bycatch and accidental catch of sensitive species.

- Study Group on stock assessment

As for previous years, the Project will continue to support the organisation of the Study Group for Stock Assessment (SG-SA). The work of the SG-SA will be instrumental to carry out stock assessment exercises for selected target species, i.e. *Parapenaeus longirostris*, *Merluccius merluccius*, *Mullus barbatus* and *Mullus surmuletus*. In particular, the SG-SA will explore options to carry out simulations to evaluate likely consequences on fish stocks and fisheries of different management scenarios. All existing data will be used for the simulations, including socio-economic data and geo-referenced data from surveys at sea. The SG-SA will also explore the possibility to progress in the assessment of Aristaeid shrimps. The results of the SG-SA will be presented to the MedSudMed Working Group on Demersal Species for overall approval and finalisation.

- Technical discussion in support of fisheries management planning

In 2013 the GFCM identified 4 sub-regional case studies for developing fisheries management plans in the Mediterranean. Based on information available, the demersal

fisheries exploiting *P. longirostris* and *M. merluccius* were identified as case study for the south-central Mediterranean Sea. Synergies between MedSudMed and the GFCM were sought to progress toward the development of this issue. Multi-stakeholder technical meetings were initiated within the Project framework involving fishers, fisheries administrations and experts (Malta, 24-26 June 2014, Tunisia, 15-16 March 2015, FAO HQ, January 2016, CC/14/Info 06). During the 39th session of the GFCM (Italy, May 2015) the GFCM Recommendation 39/2015/2⁴ was adopted defining some preliminary measures for *P. longirostris* and *M. merluccius* fisheries and calling for the development of a more complete fisheries management plan. On that occasion, the role of MedSudMed in contributing to address technical issues relevant for the definition of fisheries management strategies was further highlighted. The Project will continue to provide technical assistance toward the definition of internationally agreed multiannual management plan for the selected fisheries and to promote multi-stakeholder discussion on this issue. In this view, MedsudMed foresees the organisation of meetings with the involvement of both scientific community and representatives of fisheries' administrations and fisheries' associations of participating countries. With the aim to cope with emerging priorities at sub-regional and national level, the Project will also explore the possibility to provide technical support to participating countries in the development of national/local management plan as per request. The project will liaise with the other relevant initiatives in the framework of fishery management planning taking place in Southern Central Mediterranean.

- Working Group on Demersal Elasmobranchs in the south-central Mediterranean Sea

Demersal elasmobranchs are iconic and ecologically important species that have undergone a general reduction in abundance and distribution throughout the Mediterranean Sea. They are caught accidentally by a number of fishing gears and they have in general relatively low economic value. The south-central Mediterranean Sea is probably the area with the greatest occurrence of demersal elasmobranchs. As follow up to the indications received by the Working Group on Demersal Fisheries Resources (Palermo, Italy, 14-18 September 2015, CC/14/Info 03) and the MedSudMed Technical Meeting on Elasmobranchs (FAO HQ, Rome, 20-23 October 2015 CC/14/Info 04), the Project will support technical discussion and joint activities on demersal elasmobranchs. In this view, the Project will organise the first meeting of the Working Group on demersal elasmobranchs (WG-ELAS). The Working Group on Elasmobranchs will focus on: i) the mapping of spatial distribution of selected species; ii) the development of an ATLAS on demersal Elasmobranchs in the MedSudMed area; iii) the gathering and pooling together publications existing at national level; iv) the stock assessment for selected species (CC/14/Info 07). The possibility to carry out the Working Group on demersal elasmobranchs back-to-back with the Working Group on Demersal Species will be considered. Coordination with similar initiatives carried out by the other FAO Regional Projects and SAC-GFCM will be sought.

⁴Recommendation GFCM/39/2015/2 on the establishment of a set of minimum standards for bottom trawling fisheries of demersal stocks in the Strait of Sicily, pending the development and adoption of a multiannual management plan

- Joint activities on red coral

Great attention was devoted to red coral fisheries at Mediterranean level in recent years. Two GFCM Recommendations were adopted in 2011 and 2012 to ensure sustainability to Red coral fisheries (GFCM/35/2011/2, and GFCM/36/2012/1) and a management plan is going to be developed. Italy and Tunisia traditionally exploit Red coral in national and international waters. A request was formulated to the Project to explore options to promote technical discussion on Red coral fisheries. As follow up, one agenda item of the next MedSudMed Working Group on Demersal Fisheries Resources will be devoted to explore existing data and knowledge on Red coral and its fisheries in the south-central Mediterranean Sea.

- MedSudMed Working Group on Demersal Fisheries Resources

The Project will organize the annual MedSudMed Working Group on Demersal Fisheries Resources. The meeting will be tentatively held in the second half of 2016. During the meeting attention will be paid to:

- continuing supporting the appraisal of the stock status of *Parapenaeus longirostris* and *Merluccius merluccius* and move forward in the stock assessment of *Mullus barbatus* and *M. surmuletus*;
- continuing discussion on the integration of socio-economic data in the appraisal of fisheries status;
- the harmonisation of fisheries management in the south-central Mediterranean Sea;
- test management scenarios through Management Strategy Evaluation (MSE) and if possible bio economic modelling
- the possibility to monitor cartilaginous fish and bycatch taking advantage of on-going national and international initiatives;
- Initiate discussion on red coral;
- identifying priorities and plan future common joint research activities.

b) Small pelagic fisheries resources

- Study Group on the joint processing of acoustic and ichthyoplankton data

The Project will continue to support participating countries in the process of data sharing and joint processing. The MedSudMed Working Group on Small Pelagic Fisheries Resources (WG-SP) (FAO HQs, March 2014) initiated the joint processing of survey data to produce a preliminary description of the distribution and abundance of different life stages of small pelagics. To further continue the process and consolidate the results achieved, a *Study Group for the joint processing of acoustic and ichthyoplankton data* (SG-JDP) was organised in Tunisia on December 2014 and May 2015. In 2016, the Project will organise a further meeting of the SG-JDP to: i) advance in the use of acoustic data for the estimation of small pelagic fish biomass at sea; ii) continue the joint processing of ichthyoplankton to define spawning areas and areas of concentration of fish larvae; and iii) progress in the preparation of documents to be published in the series of MedSudMed Technical Documents and in the peer reviewed scientific literature. The SG will be tentatively organized in the first half of 2016. Synergies with CopeMed II will be sought on this issue. Given the nature of small pelagic stocks and the ongoing cooperation between experts from Tunisia and Algeria for what concern the acoustic studies of small pelagic fisheries, the possibility to invite expert/s

from Algeria to the Working Group will be explored in collaboration with CoPeMed II. The objective would be to broaden the technical discussion on fisheries resources (target species, stock spatial distribution, eggs and larvae data) and the technical support to surveys at sea.

- Joint surveys at sea

The Project will continue to pursue the standardization of data collection and processing in the south-central Mediterranean Sea. Great attention has been given by MedSudMed to specific actions on small pelagic fisheries resources and to the standardisation of surveys at sea and survey data processing for such species. As follow up to the discussion held during the WG-SP (FAO HQs, January 2013 and March 2014), options will be explored to facilitate the implementation of acoustic and/or ichthyoplankton survey in Tunisian waters.

- Identification of shared stocks

The Project will continue to support the activities that aim at the identification of possible shared stocks of pelagic fish species in the south-central Mediterranean Sea. As follow up to the discussion held during the MedSudMed Working Group on Small Pelagic Fisheries Resources (WG-SP, Capo Granitola, Italy, 30 November – 02 December 2015, CC/14/Info 09), the need to define the occurrence of possible stock sub-units of selected species in the Project area was pointed out. Emphasis will be given to the possibility to combine various methods to discriminate population and stocks units. In this view, the Project will explore the possibility to coordinate *ad hoc* sampling of sardine and anchovy among the research institutions participating in the Project to confirm and further expand the results obtained in previous national studies on morphometry (body and otolith), microchemistry composition of the otoliths (bulk and surface analysis), tropho-dynamic, genetic comparison.

- *Ad hoc* activities on selected species

Coryphaena hippurus

Dolphinfish, *C. hippurus*, is target of an *ad hoc* fisheries in the entire Mediterranean Sea and of a specific recommendation of the GFCM (GFCM/30/2006/2). A technical workshop was carried out in March 2016 by CopeMed II in collaboration with MedSudMed to take stock of the last advances in knowledge on the biology and fisheries of this species. During the Workshop a work plan to progress on a joint assessment of *C. hippurus* was also drafted. Accordingly, the Project will continue to support discussion on and appraisal of *C. hippurus* stock and fisheries. The activity will be carried out in cooperation with CopeMed II.

Trachurus spp.

Horse mackerels, *Trachurus* spp., are frequent in the commercial catch in the entire south-central Mediterranean Sea. They are regarded as main target species in small pelagic fisheries in Tunisia and Libya. According to their importance for fisheries, *ad hoc* discussion was held on *Trachurus* spp during the last MedSudMed Working Group on Small Pelagic Fisheries Resources (Italy, 30 November-02 December 2015, CC/14/Info 08). On that occasion, a preliminary appraisal of data and information available at national level on *Trachurus* stocks and fisheries was carried out. A work plan to fill knowledge gaps and progress toward the appraisal of stock status and fisheries of *Trachurus* spp. was also agreed on (CC/14/Info 08). In 2016, MedSudMed will continue to support the discussion toward the appraisal of

Trachurus mediterraneus and *T. trachurus*. The discussion will be carried out on occasion of the *Study Group for the joint processing of survey data* and of the *Working Group on Small Pelagic Fisheries Resources*. In addition, the possibility to carry out a capacity development programme for the macroscopic and microscopic determination of gonad maturity stage and for the age determination through otoliths reading will be explored by the Project.

- Working Group on small pelagic fisheries resources

The annual MedSudMed Working Group on Small Pelagic Fishery Resources (WG-SP) is tentatively planned to take place in the second semester of 2016. According to the conclusions of the previous meetings, the WG-SP will aim to:

- Review the work carried out by the *Study Group on the joint processing of acoustic and ichthyoplankton data*;
- Progress in the preparation of joint technical and scientific documents;
- Continue the joint discussion on multi-disciplinary studies on *Trachurus* spp.;
- Explore options for fisheries resources appraisal (e.g. anchovies and sardines in GSA 16);
- Define priorities to be addressed to progress in the monitoring and appraisal of the state of small pelagic fish and fisheries.

The WG-SP will also be an occasion to consolidate and further expand the network of experts dealing with small pelagic species. In this view, and taking into account the collaboration already established in implementing surveys at sea, the possibility to enlarge the participation to experts from Algeria through synergies with CopeMed II will be sought.

c) Training activities and national capacity development

The Project will continue to support the strengthening of national expertise through the implementation of specific activities. The Project will also continue to consider the full involvement of all the research institutes and scientists from the participating countries in the activities organised as a priority. The involvement of national administrations in the process of developing capacity and a common background/view on fisheries and marine resources will also be foreseen. The strengthening of the national capacity in terms of expertise will therefore 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 i) for the implementation of research activities, ii) to standardise scientific methodology and iii) to provide scientific institutions and administrations with tools and skills to discuss possible options for managing fisheries. In particular, activities foreseen for the coming period could include:

- Ad hoc programme for training on fish biology for researchers from Libya;
- On-the-job training on fisheries socio-economic data collection and processing;
- Trainings on the extended survivor analysis model (XSA) and scripts in collaboration with the FAO AdriaMed Project;
- Training courses on the use of bio-economic (e.g. through the use of the application BEMTOOL) and of the Management Strategies Evaluation (MSE) models;
- Training workshop on methods to measure fish larvae morphometry, small pelagic (e.g. *Engraulis encrasicolus* and *Sardinella aurita*) and demersal (e.g. *Mullus barbatus*) species.

The organisation of *ad hoc* training programmes upon request of the participating institutes can be foreseen. Training activities, when possible, will be coordinated with the other FAO Regional Projects, in order to avoid duplication or overlapping of activities.

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

d) Web site and information system

The contents of the MedSudMed portal (www.faomedsudmed.org), will be updated and reorganized based on the main Project components and areas of activity to group information more logically and improve access to areas of interest for website users. Following the reorganization of the MedSudMed portal, there will be the need to create new thematic sections, according to the new structure, which will focus on specific subjects e.g. fishery resources; demersal crustaceans.

e) Strengthening the cooperation with the other FAO Mediterranean Projects and other initiatives in the region

The existing cooperation with other FAO Regional Projects (RP) such as the AdriaMed will continue and further collaboration with CopeMed II, and EastMed will be sought. In this context, the indications provided during the internal coordination meetings among Projects will be taken into consideration.

Strong collaboration was sought with CopeMed II for supporting joint discussion on shared stocks between Tunisia and Algeria. In this view, three meetings were held to strengthen connections between the research institutions of the two countries. During the meetings two possible species were identified as target of possible joint studies: *Sardina pilchardus* and *Merluccius merluccius*. As follow up, the Project, in collaboration with CopeMed II, will contribute to the organisation of an ad hoc technical meeting to explore existing data and define the route toward joint data processing and analysis. As a further follow up, the possibility of establishing a link between this group and the relevant small pelagic and demersal WGs of MedSudMed and CopeMed will be explored.

Areas of cooperation have been indicated for field work and socio-economic aspects of fisheries and training. The preparation of common informative material (leaflets, CD-rom, etc.) that can improve the visibility of the FAO Regional Projects in the Mediterranean area and in the international context is foreseen. To this extent, the preparation of a common technical manual for the collection of socio-economic data, based on the experience gained by the FAO Mediterranean Projects is foreseen. Training activities will be coordinated among all the Projects, in order to avoid duplication or overlapping. The participation of other Regional Project experts in training courses organized by MedSudMed will be foreseen and vice-versa.

Moreover, the Project will participate in the Coordination Committees of CopeMed (April 2015), EastMed (May 2015) where additional synergies will be identified.

Synergies with other international institutions and initiatives underway in the Mediterranean regarding fishery subjects of interest for the Project region will be sought for the sake of avoiding duplication of efforts and optimizing the use of human and financial resources.

As already stated, training activities will be coordinated among all the Projects, in order to avoid overlapping. The participation of other Regional Projects' experts in training courses organized by MedSudMed will be foreseen as well as the contrary.

The Project will seek synergies with the FAO Regional and sub-regional offices in the Mediterranean and Near-East, region such as the Sub-regional Office for North Africa (SNE), Regional Office for North Africa and Near East (RNE).

f) Strengthening the cooperation with the GFCM

In line with previous decisions of the Coordination Committees and with the recommendations that emerged from the Independent Evaluation carried out in 2012, the Project will continue to strengthen international and regional cooperation at Mediterranean level with the GFCM and its subsidiary bodies, (SAC, Sub-Committees and/or Sub-regional committees, Working Groups) supporting: i) the preparation of scientific contributions for GFCM events; ii) the participation of experts from the Project's participating institutes in GFCM events; and iii) countries to be compliant with the GFCM recommendations. Moreover the Project will act in synergy with, and will be part of, the GFCM framework programme for 2013-2018 and the proposed work plan for the SAC Sub Regional Committee for the Central Mediterranean (SRC-CM). In particular, synergies will be sought for supporting activities like training courses, fisheries independent data collection, stock assessment etc., with the objective to avoid overlap and optimise the use of human and financial resources. Interactions with the GFCM will be further strengthened with the overall purpose of taking the best possible advantage of expertise available at sub-regional level, the lessons learnt and overall resources available.