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Organización de las  
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Agricultura

## MedSudMed

### Report of the Seventeenth Meeting of the Coordination Committee

Bugibba, Malta, 05-06 February 2019

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 MiPAAFT 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, Forestry and Tourism Policies (MiPAAFT). 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 Seventeenth 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 Bugibba, Malta, from 05<sup>th</sup> to 06<sup>th</sup> February 2019.

## Acknowledgements

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

MedSudMed

Report of the Seventeenth Meeting of the Coordination Committee, Bugibba Malta, 05-06 February 2019.

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### **ABSTRACT**

The Seventeenth meeting of the MedSudMed Coordination Committee was held in Bugibba Malta, 05-06 February 2019, kindly hosted by the Fisheries and Aquaculture Department of the Ministry for the Environment, Sustainable Development and Climate Change of Malta (MESDC). The Coordination Committee was attended by representatives from the countries participating in the Project (Italy, Libya, Malta and Tunisia), representatives of the Italian Donor, the FAO Fisheries and Aquaculture Policy and Resources Division (FIA), a representative of FAO Regional Projects AdriaMed and CopeMed II, of the FAO General Fisheries Commission for the Mediterranean Secretariat (FAO GFCM), as well as the staff of the FAO MedSudMed Project. The meeting sought to present and discuss the results of the activities carried out by the Project referring to the 2018/19.

The activities followed the methodological approach used by the Project and were presented according to the Project main components. The working paper “Project Future Implementation”, in which objectives, outputs and activities proposed for 2018 was introduced and agreed by the Committee, including additional inputs coming out from the discussion.

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# **Report of the 17<sup>th</sup> Meeting of the MedSudMed Coordination Committee**

**Buġibba, Malta, 05-06 February 2019.**

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

1. The 17<sup>th</sup> meeting of the Coordination Committee of the FAO Regional Project MedSudMed “Assessment and Monitoring of the Fisheries Resources and the Ecosystems in the Straits of Sicily” was held in Buġibba, Malta on 05<sup>th</sup> and 06<sup>th</sup> February 2019, kindly hosted by the Fisheries and Aquaculture Department of the Ministry for the Environment, Sustainable Development and Climate Change of Malta (MESDC).
2. The meeting was attended by representatives of the Donor, Italian Ministry of Agriculture, Food, Forestry and Tourism Policies (MiPAAFT), representatives from the countries participating in the Project (Italy, Libya, Malta and Tunisia), representatives of the FAO Fisheries and Aquaculture Policy and Resources Division (FIA), representatives of FAO Regional Project AdriaMed and CopeMed II, a representative of the FAO General Fisheries Commission for the Mediterranean (FAO GFCM), as well as the staff of the FAO MedSudMed Project.
3. Mr Dennis Calleja took the floor and, on behalf of the Directorate for Fisheries and Aquaculture of the MESDC welcomed the Committee Meeting participants. Mr Calleja gladly thanked all the members for their efforts to participate in the meeting: the full involvement of all the institutions participating in MedSudMed is very important to reach the final goals of sustainable fisheries. He recalled that 2018 has been a year full of commitments and achievements for the Project, thus highlighting the importance of this Coordination Committee meeting. Mr Calleja also acknowledged the role of the Project that, throughout the years, has proven to be beneficial for members acting as a platform for scientists, administration and even stakeholders from the Strait of Sicily. As a result of Project achievements, the discussion on management of fisheries exploiting shared resources has become easier. Other important work that was conducted within the project included the publications of the scientific papers, works on small scale fisheries and the use of local ecological knowledge to monitor the influx of alien species in the Mediterranean. However, no achievements would have been possible without the efforts and commitment of participating institutions and experts. In these days the Committee will be called to review the progress achieved by the MedSudMed Project and define a work plan for the coming period. On seeing the positive outcomes resulting from the work performed by the MedSudMed, it is with great pleasure that Malta is hosting the 17<sup>th</sup> session of the MedSudMed Coordination meeting. At the end of his welcome, the meeting was wished every success.
4. The representatives of the participating countries, Italy, Libya, Malta and Tunisia thanked the MESDC for hosting the meeting and the MedSudMed Project for the support given to the countries. The national representatives further recognized the importance of the Project for the future responsible management of the south-central Mediterranean and stressed the role that each cooperating country can play and the advantages it can receive from this process.

5. The representative of MiPAAFT, Ms Ilaria Ferraro, echoed the other participants and thanked the MedSudMed Project and the host institute for organising and hosting the meeting. She took the occasion for underlying the importance of the Project as a tool for joint discussion and for reiterating full support of MiPAAFT to MedSudMed and the FAO Fisheries lead Mediterranean Projects in general.
6. The National Focal Point of Italy, Mr Fabio Fiorentino, thanked the Maltese authorities for hosting the meeting and the Donors for the continue support to the Project activities. Mr Fiorentino informed the Committee that, following an internal re-organization of the CNR in Italy, his institute has changed name and it is now Institute for Marine Biological Resources and Biotechnologies (CNR-IRBIM). The Institute also changed Headquarters, now in Messina (Italy) and besides the Unit in Mazara del Vallo (TP), there are two other Units one in Ancona and one in Lesina (FG). The IRBIM will continue the full participation in the MedSudMed Project activities.
7. The National Focal Point of Tunisia, Mr Othman Jarboui, echoed the other delegates in thanking the MESDC. He, on behalf of the GFCM Secretariat, as former President of the Scientific Advisory Committee (SAC), also underlined the importance of MedSudMed in supporting the GFCM and the Mediterranean mid-term strategy (2018-2020).
8. Mr Salem Zgozi, Representative of Libya, by thanking the MESDC for the kind hospitality, acknowledged the support provided by the Donors so far to the Project. He stressed the important role that MedSudMed had in filling the knowledge gap in the area and in enhancing the cooperation among the research institutes. He also pointed out the excellent level of cooperation reached among scientists in the area as demonstrated by the amount and quality of activities carried out in the Project Framework.
9. The representative of the CopeMed II Project, Ms Pilar Hernandez, thanked the MESDC and the Project for hosting the meeting and having the opportunity to represent CopeMed II. She recalled the long and on-going cooperation among the two projects and she wished that further synergies are sought in addition to the already planned common activities.
10. The representative of the FAO Fisheries and Aquaculture Department (FAO-FI), Mr Paolo De Donno, welcomed the participants and expressed the gratitude of FAO-FI to the MESDC for hosting the meeting and to the MiPAAFT and DG-MARE for the continue support provided as Donors of the MedSudMed, CopeMed II, AdriaMed and EastMed Projects.
11. The FAO MedSudMed Project Coordinator, Mr Enrico Arneri, took the floor and thanked the Maltese authorities for hosting the meeting and for the continue cooperation in the Project activity. He also thanked the representative of MiPAAFT for attending the MedSudMed Coordination Committee and for the continuous support to the Project. He welcomed the Delegations to Malta and thanked the participating countries for their strong commitment and involvement at scientific and administrative level, which has resulted in the Project achievements. He 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://webapp.faomedsudmed.org/dkfor564jrfklgty/CC17\\_Malta\\_2019\\_Info\\_Documents.zip](http://webapp.faomedsudmed.org/dkfor564jrfklgty/CC17_Malta_2019_Info_Documents.zip). A printed copy of the documents was also distributed to each delegation.
12. The FAO MedSudMed Project Fishery Monitoring Expert, Mr Luca Ceriola, thanked the Delegations and recalled that the meeting marked seventeen years of Project activities. He called the attention of the Committee to three main achievements of the past period: i) the continuous support to further develop the GFCM Management Plan for bottom trawl



fisheries exploiting European hake and Deep water rose shrimp<sup>1</sup>, and Deep water red shrimps<sup>2</sup>; ii) the studies launched on small scale fisheries spatial mapping; and iii) the publication of scientific papers based on the joint work carried out inside the Project. These achievements testify the high level of cooperation reached and of the importance given to the Project cooperative work. This in turn results in high expectations from the work of the entire MedSudMed network and to higher the level of requests. Both aspects make the incoming period challenging and this 17<sup>th</sup> Coordination Committee meeting very relevant for the future of the Project.

13. The representative of MESDC, Mr Reno Micallef, was proposed and elected as Chairperson of this MedSudMed Coordination Committee meeting.

### **Adoption of the Agenda (Agenda Item n. 2)**

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

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

15. The Project Fishery Monitoring Expert, Mr Ceriola, introduced this agenda item and presented the document "Report on the Project's Progress", in which the main activities carried out by MedSudMed from February 2018 to January 2019 are described in detail. The activities correspond to the Project work programme and mandate for this phase of the Project, as well as the recommendations of the 16<sup>th</sup> Meeting of the MedSudMed Coordination Committee.
16. Where the intersessional activities are concerned, the Project presented them grouped into four main components: 1) Cooperative research programmes and working groups; 2) National capacity development; 3) Regional cooperation; 4) Project communication.
17. The Coordination Committee was informed on the progress made in the framework of the established cooperative work programmes, starting with the component on demersal resources. To progress with the assessment of stocks of the main target species for fisheries in the Project area, the Study Group for Stock Assessment (SG-SA) met shortly before the annual meeting of the Project Working Group on Demersal Fisheries Resources (WG-DEM). The Study Group updated the stock assessment of *Parapenaeus longirostris* and *Merluccius merluccius* in the MedSudMed area according to the methods and settings defined during the GFCM Benchmark assessment carried out in 2015; in addition, assessment exercises were finalised for *Mullus barbatus* in the entire Project area. The Stock assessment for *Mullus barbatus* were used as baseline for discussion on occasion of the GFCM Benchmark assessment for *Mullus barbatus* performed at the SAC-GFCM WG on Stock Assessment for Demersal Resources (WGSAD) on 19-23 November 2018.

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<sup>1</sup>GFCM Recommendation GFCM/42/2018/5 on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16), repealing Recommendations GFCM/39/2015/2 and GFCM/40/2016/4.

<sup>2</sup>GFCM Recommendations GFCM/42/2018/3 and GFCM/42/2018/4 on multiannual management plans for sustainable fishing activities in the Ionian and in the Levant Sea for the Giant red shrimp and Blue and red shrimp.

18. The Committee was informed on the Project's activities related to small scale and recreational fisheries (SSF and RF respectively). The medium term work programme defined in 2017 aimed at mapping the spatial distribution of some SSF in each Project country on a pilot scale was put forward in 2018. The case studies identified and the capacity development component were developed. Results were reviewed and follow up were planned on occasion of an *ad hoc* MedSudMed Training workshop on small scale fisheries and non-indigenous species (GFCM HQ, Rome, Italy 10-12 July 2018). In the Project area, a complete overview of legislation currently regulating RF is being finalised. In addition, discussion was held on the identification of potential pilot studies for data collection on RF based on the Guidelines drafted by the GFCM Secretariat.
19. In the framework of demersal resources, the Meeting was informed on activities related to invasive non indigenous species. The progresses made on the multi-step programme aimed at gathering updated information on the evolution of the populations of these species through time were illustrated, including the development of case studies and the digitalisation and standardisation of data gathered. The meeting was also informed on the steps done toward the dissemination of results and for the planning of a periodic monitoring of invasive non indigenous species in the Project area.
20. In the context of activities regarding demersal fisheries resources, mention was given to the work supported on Deep water red shrimps (DWRS) *Aristaeomorpha foliacea* and *Aristeus antennatus* and related fisheries. The Project promoted discussion with fisheries stakeholders on DWRS fisheries and, in collaboration with EastMed and the GFCM Secretariat, organised a Joint data preparation meeting in order to: i) advance towards determining the fishing grounds of DWRS fisheries in the Eastern-Central Mediterranean; ii) review the available data for the assessment of DWRS stocks; iii) make progress toward the definition of assessment and/or management units for DWRS stocks; iv) identify knowledge and data gaps; and v) define a roadmap to fill the gaps and move towards the stock assessment of DWRS (CC/17/Info 06).
21. Mention was given to the Working Group of Demersal Fisheries Resources (WG-DEM) activities. The WG-DEM reviewed the Study Group's outputs and, among other issues, held discussion in support of fisheries management in view of the *GFCM Recommendation GFCM/42/2018/5 on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16), repealing Recommendations GFCM/39/2015/2 and GFCM/40/2016/4* and of the *GFCM Recommendations GFCM/42/2018/3 and GFCM/42/2018/4 on multiannual management plans for sustainable fishing activities in the Ionian and in the Levant Sea for the Giant red shrimp and Blue and red shrimp*. Taking advantage of expertise on fish population dynamic, the WG-DEM had *ad hoc* discussion on stock assessment of *Sardina pilchardus* and *Engraulis encrasicolus* in GSA 16.
22. With regard to the support to the *Rec. GFCM/42/2018/5*, during the intersessional period, the Project organised a technical meeting involving all fisheries stakeholders (fishers, fisheries administrations and scientists) from the participating countries. The meeting was aimed at contributing to the discussion on the multi-annual management plan for fisheries targeting *P. longirostris*, *M. merluccius* in the south-central Mediterranean Sea. Occasion

was taken also to share views and approaches on emerging issues related to Deep Water Red Shrimps (*Aristaeomorpha foliacea* and *Aristeus antennatus*) fisheries.

23. In the context of activities regarding demersal fisheries resources, the Meeting was made aware of the support given on fisheries data collection on socio-economic related aspects and on catch composition (biological sampling). The data collection targeted mainly bottom trawl fisheries exploiting *P. longirostris* and *M. merluccius* in north Tunisia. The socio-economic data collection was initiated as a pilot action in 2016 and continued in 2017 and 2018. On occasion of the WG-DEM, follow up in terms of comparative analysis between fisheries from all MedSudMed countries was planned.
24. Furthermore, the Project supported actions in Tunisia, aimed at improving knowledge on bottom trawl fisheries in terms of catch and fishing operations. Pilot biological sampling at landing site in north Tunisia was launched in 2018 to gather updated information on the catch of bottom trawl fisheries. Support was also provided to the direct monitoring of bottom trawl fisheries in the shelf area of the Gulf of Gabès, involving observers on board. The involvement of observers on board initiated in 2016 and provided new geo-referenced data on commercial catch, including discard and incidental catch, for supporting spatial base studies and fisheries management planning.
25. The work done for fisheries independent data collection was also mentioned. The Meeting was informed that the Project has prepared the sampling scheme for a survey aimed at the identification of nurseries for *Merluccius merluccius* and *Parapenaeus longirostris* in GSAs 12, 13 and 14. The survey, supported in strict collaboration with the GFCM, was planned for the end of 2018 and postponed to early 2019.
26. Where small pelagic fisheries resources are concerned, the Coordination Committee received detailed information on the activities and the results achieved in the intersessional period. Attention was devoted to the use of existing data from experimental surveys and commercial catch for investigating all the life history of selected fisheries target species. The activities were carried out in the framework of the MedSudMed Working Group on Small Pelagic Fishery Resources (WG-SP). The WG-SP made progress on the appraisal of stock status of *Engraulis encrasicolus* and *Sardina pilchardus* through indirect methods. The stock assessments presented to the GFCM Working Group for Stock Assessment (Small Pelagics) 2018 were reviewed and inputs were provided for further improvement. Progresses were also made in mapping spawning areas of *Engraulis encrasicolus* and *Sardinella aurita* based on ichthyoplankton data.
27. The Committee was also informed that the WG-SP reviewed the general criteria for the interpretation of the otoliths structure for *T. trachurus* and agreed on an exercise for otoliths reading standardisation, including otoliths sampling, reading and exchange for comparative analysis, and a follow up meeting. The WG-SP also dealt with the special issue of Hydrobiologia Marine Ecosystems and Living Resources in the Central Mediterranean Sea (Hydrobiologia 821) finalised and published in October 2018 with the support of the Project.

28. 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. Three training courses were held in the intersessional period covering several aspects of fisheries sciences, including: i) methods for basic biological research; ii) data processing for the use of geographic information systems (GIS) in view of spatial mapping of small scale fisheries; and iii) stock assessment. The courses comprised lectures and hands-on sessions for the application of specific techniques or approaches.
29. Specific emphasis was given to the Summer School in Quantitative Fisheries Stock Assessment. It was jointly organised in collaboration with the FAO Mediterranean Projects AdriaMed, CopeMed II, EastMed, the GFCM and the European Commission Joint Research Centre (JRC). It was the second edition of a capacity development programme meant to be a permanent forum for experts from the entire Mediterranean and Black Sea region to be held annually. This will in turn lay the basis for cooperative and harmonised stock assessment studies in the entire Mediterranean Sea.
30. The Committee was made aware that, following a specific request formulated by the National Focal Point and Director of the Institut National des Sciences et Technologies de la Mer (INSTM), the Project supported the acquisition of a vehicle to be used for in the field sampling by the INSTM. This action addressed the priority urged to maintain and further enhance national capacity for in the field biological sampling from small scale (clams) and commercial fisheries. Moreover, the Project further supported the process to allow the Tunisian R/V Hannibal to perform experimental surveys at sea for fishery independent data collection.
31. In the framework of cooperative activities, the Project strengthened liaisons with the Donors (MiPAAFT and EU-DG-MARE) and intensified the communication flow with them, including coordination meetings. Cooperation was reinforced with the other FAO Regional Projects AdriaMed, CopeMed II and EastMed throughout the year to consolidate and develop common activities. In addition, in close collaboration with CopeMed II, the Project promoted bilateral discussion and provided technical assistance to Algeria and Tunisia for the identification of species of joint interest for stock assessment purposes and to plan possible joint surveys at sea. In cooperation with EastMed a joint meeting to initiated discussion on Deep Water Red Shrimps was organized. In the framework of the FAO decentralisation process, MedSudMed is collaborating with the FAO Sub-regional office for North African (FAO SNE) and FAO Regional Office for North Africa and Near East (RNE). MedSudMed continued to support the activities of the GFCM through a tight coordination and resource sharing and by providing scientific contributions for discussion and by participating and funding the participation of experts in GFCM meetings.
32. The Project issued and disseminated several technical documents, the Committee was informed on the finalisation of the Hydrobiologia Special Issue focusing on the MedSudMed area: *Marine ecosystems and living resources in Central Mediterranean Sea*. The Special Issue 821 was published in 2018 and included 15 scientific papers. The Special Issue contents and papers are available on the Hydrobiologia Web site (<https://link.springer.com/journal/10750/821/1>).

33. The Chairperson welcomed the presentation and underlined the amount of activities done, which are the achievement of work initiated and put forward through time. He then opened the discussion.
34. The representative of CopeMed II, Ms Hernandez, congratulated the Project staff for the amount of work carried out and for the level of cooperation achieved with CopeMed II. She underlined the willingness to further progress with the activities in support of the cooperation between Algeria and Tunisia on *Merluccius merluccius* and *Sardina pilchardus*. In this context, a follow up joint meeting in the next months has been planned. With regards to the *Coryphaena hippurus* related activities, Ms Hernandez informed the Committee that work is progressing and all the information collected so far are being compiled in a document that is going to be released in the coming period. Moreover, a study in Majorca has been launched to improve data on *C. hippurus* fisheries (i.e. on fishing effort) to be used as input for stock assessment. An *ad hoc* joint meeting to progress on stock assessment for this species was tentatively planned for autumn 2019.
35. The Representative of Tunisia, Mr Othman Jarboui, thanked the Project for the large amount of work done and for the scientific information produced. In particular, he acknowledged the support received on fisheries socio-economic data collection. The work carried out in Tunisia is being supported since 2015 and resulted in the gathering of important information for informed fisheries management. He wished, for 2019, a continuation of the support and the extension to other areas, so to have a complete picture on all the aspects of the bottom trawl fisheries. In addition, Mr Jarboui also pointed out the importance of the work supported so far on the data collection through observers on board. So far more than 500 trawl hauls have been monitored in south Tunisia and the possibility to extend this activity to other areas should be envisaged.
36. Mr Jarboui also brought to the attention of the Committee the importance of small pelagics for his country and for the GFCM in general. He recalled the work carried out so far on this resource and he suggested that time is mature to bring the results to the attention of the relevant meetings of the GFCM in order to progress on the appraisal of these resources.
37. The National Focal Point of Italy, Mr Fiorentino, welcomed the presentation and acknowledged the wide amount of work done. He highlighted furthermore the work on the identification of nurseries in the Project area as an important achievement of the Project work. Moreover, he underlined the importance to further progress on assessment of *Trachurus trachurus* as an example of work that could further progress in the short term. On this species, he further pointed out the importance to take the best possible advantage from the use of scientific surveys data for a direct assessment of its stock status; likewise he stressed the need to properly quantify the amount of discard, which is essential for stock assessment using indirect methods. To this purpose he proposed a workshop on the issue to proceed with the standardization of discard data in the subregion.
38. The representative of Tunisia, Mr Jarboui, echoed the Focal Point of Italy in underlining the importance of tackle discards in joint studies and discussion. He concurred on the need to plan a meeting that could address the standardization of such data in the Project area. In addition, Mr Jarboui concurred on the feasibility to initiate an exercise of assessing the stock of *T. trachurus*; in doing so, he stressed the importance to work in parallel with all the existing data, fisheries dependent and fisheries independent. When dealing with other initiatives at Mediterranean level, he stressed the potential role of the Project, which should ensure the liaison among all central Mediterranean countries in all the phases of EU funded Projects that are generally limited to EU countries (e.g. MANTIS project).

39. The representative of Tunisia, Mr Hechmi Missaoui, acknowledged the large amount of work done (assessment of shared stock, data collection, etc.) and pointed out that the Project achievements presented have been built year by year through the development and reinforcing of international cooperation. He also underlined the importance for Tunisia of the support on data collection provided by the Project on clam fisheries. He recalled that more than 6000 fisher women are involved in this activity in east and south Tunisia. The support received by the Project resulted in better capacity to monitor clam fisheries and to provide advice on the state of their stocks, both relevant for management decisions. He further pointed out the importance of the support received by the Project to have the Research Vessel Hannibal operational again. The vessel is fully operative and a new acoustic survey in the entire Tunisian waters has been carried out in 2018, providing updated information on small pelagics biomass relevant for fisheries management at national and sub-regional level. In this regard, Mr Missaoui also acknowledged the work done jointly by the Project and the GFCM Secretariat for supporting a MEDITS like survey in the coming period. In this respect, he recalled that everything is currently set on board of the Hannibal and the survey should start in GSA 12 and 13 in March 2019.
40. Mr Missaoui also mentioned the important work initiated on discards monitoring by the Project. With more than 80% of assessed stock overexploited in Mediterranean a further effort shall be done to improve information on discards as well as on selectivity and remediation measures to be put in place. In addition, by recalling the compilation activity carried out on RF, he urged the importance to further tackle Recreational Fisheries and their interaction with commercial fisheries.
41. The representative of Libya, Mr Hisham Ghmati, praised the work carried out by the Project and congratulated with the staff for the large amount of activities presented. In particular, he referred to the elasmobranchs related activities indicating their importance for his country. He informed the participants that the work planned on the recovery of historical data is progressing and acknowledged the Project support on ageing of *Mustelus mustelus*. On this regard he wished the further support of the Project to put in place an observer on board programme, in line with the GFCM work plan on endangered species, and in cooperation with CopeMed and GFCM. The work in this sense has already initiated and two reference experts have been identified to tackle this issue. With regards to the non-indigenous species, Mr Ghmati praised the support of the Project and informed the participants on the recent outspreading of the blue crab, *Portunus segnis*, in the western coasts of Libyan waters, from the Tunisian boarded up to the Tripoli area thus calling for a regular monitoring.

#### **FAO GFCM work plan for the next intersession period (Agenda Item n.4)**

42. As former Chairperson of the GFCM Scientific Advisory Committee, Mr Othman Jarboui, presented the activities, targets and expected outputs foreseen for 2019 under the frame of the GFCM Scientific Advisory Committee on Fisheries (SAC), in line with the Mid-term *Strategy towards the sustainability of Mediterranean and Black Sea fisheries* (GFCM Resolution/40/2016/02). Mention was given both to SAC regular activities and Mid-term strategy activities of relevance for MedSudMed. Regarding the regular SAC activities the two decisions adopted on management plans on Deep water red-shrimps in the Levant and Ionian Sea were mentioned, together with the coming work on Red coral (*Corallium rubrum*). Mention was also given to the expected work on European eel (*Anguilla anguilla*), and small scale fisheries (SSF), with specific mention to the implementation of the FAO

SSF guidelines, the collection of socio-economic data for SSF and the implementation of the Regional Plan of Action for SSF in the GFCM Area. The calendar of GFCM-SAC activities was agreed on occasion of the 42nd GFCM Plenary session. Regarding the work planned in the framework of the Mid-term Strategy, activities on Blue crabs (*Portunus segnis* and *Callinectes sapidus*) were proposed. Concerning the support to survey at sea, the Committee was informed that efforts will continue toward the harmonization of scientific surveys-at-sea according to the GFCM protocol on both demersal (bottom trawl) and pelagic (acoustic) surveys. The launched “bycatch programme” through observers on board was mentioned. Specific attention was devoted to the Joint project to monitor and evaluate depredation by endangered species in Tunisian waters, followed by testing of mitigation techniques together with ACCOBAMS and RAC/SPA. Regarding recreational fisheries, the relevant pilot studies to be launched in Tunisia were mentioned. The pilot studies will be aimed at testing and updating the draft handbook for data collection on recreational fisheries for the Mediterranean presented to the 20th SAC. The presentation was concluded with a focus on the planned activity for socio-economic data collection to be launched in Tunisia in February 2019.

43. The Chairperson welcomed the presentation and noted the amount of activities planned by the GFCM and SAC in the framework of the Mediterranean strategy and the convergences with the tasks addressed in the MedSudMed context. In this view, he pointed out the importance of continue finding synergies and setting overall coordination between GFCM and the Project. He then opened the discussion.
44. With reference to the bycatch and depredation issues tackled in the presentation, Mr Fiorentino informed the Committee that in GSA 16 first records of *Callinectes sapidus* have been collected recently. Given the experience on the potential impact of this species on the catch of settled nets, the Committee concurred on the importance to consider this issue, in strict cooperation with the work on “depredation” as proposed by the GFCM.
45. In addition, Mr Fiorentino, referring to the activities planned on Small Scale Fisheries, pointed out the need to initiate investigating on a recent problem of interaction between coastal fisheries and marine mammals (in particular dolphins). He referred to the severe conflicts between fishers and dolphin that are generated by the damages to the fishing gears; moreover, the use of deterrent pingers, is not successful as they lose effectiveness after the initial period. The representatives of Tunisia and Libya echoed the problem raised by the Italian delegate. On this purpose, an on-going project carried out in Tunisia with the support of the GFCM and RAC/SPA was mentioned.
46. After the discussion on the GFCM work plan, the Chairperson gave the floor to Ms Hernandez, the representative of CopeMed II. Ms Hernandez illustrated the main activities planned by CopeMed II and for which strong cooperation has been foreseen with MedSudMed. She recalled the activities already mentioned on *C. hippurus* she stressed the need to continue the bilateral discussion among Algeria and Tunisia on the possibility to carry out joint resources evaluation of fisheries resources (Hake and Sardine) between eastern Algeria and northern Tunisia. Ms Hernandez also referred to the data collection on eel. She then concluded by recalling the summer school on quantitative stock assessment planned in cooperation with MedSudMed, the other projects EastMed and AdriaMed as well as the GFCM and JRC.

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

47. The MedSudMed Project Coordinator, Mr Enrico Arneri introduced the document "Development of the Project's Programme". The meeting was informed that the final work plan would also give due consideration to the indications emerging from this Committee meeting. The activities described take into account the Project objectives and results achieved so far, the indications provided by the FAO External Evaluation of the Project (2012), the outcome of the intersessional working groups' meetings as well as the suggestions received from the participating countries during the informal meetings held. All the activities planned will contribute to the Mediterranean mid-term strategy (2017-2020) for the sustainability of Mediterranean and Black Sea fisheries (Resolution GFCM/40/2016/2), and are integrated in the GFCM SAC work plan for 2018-19 including the Sub Regional Committee for the Central Mediterranean. Furthermore, the activities are also in line with the MedFish4Ever Declaration (March 2017) and are aimed to sustain countries in achieving the target set at national level by the UN Sustainable Development Goals. Collaboration with other FAO Mediterranean projects particularly AdriaMed, CopeMed II, and EastMed will continue. All activities are subject to budget availability.
48. The Meeting was reminded that the work plan would cover the six main areas of Project intervention: demersal fisheries resources; demersal elasmobranchs, small pelagic fisheries resources; training and national capacity development; web site and communication system; regional cooperation. Where demersal fishery resources are concerned, much of the medium-term technical work will be in support of the full development of the GFCM Recommendations (GFCM/42/2018/5) *on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16)*.
49. The Project will continue to support socio-economic data collection activities, finalising the processing of 2018 data and supporting a fourth year's survey in Tunisia in close collaboration with the GFCM Secretariat. The data collection activity will regard demersal fisheries targeting *Parapenaeus longirostris* and *Merluccius merluccius*; in addition, thanks to the cooperation with the GFCM, the coverage of the survey to all fisheries in Tunisia will be supported in 2019. The data gathered will be instrumental to the completion of assessment of the state of the stocks in question and will contribute to providing Tunisia with the tools for managing national capture fisheries, fostering compliance with the GFCM recommendation on data collection.
50. Furthermore, the Meeting was informed that the Project, in strict collaboration with GFCM Secretariat, would also explore the possibility to enhance the collection of standardised, geo-referenced fisheries independent data through surveys at sea supporting the expansion of national survey programme either in terms of area coverage or frequency of sampling. The data gathered will be instrumental to identify critical areas like nurseries for fisheries target species, which in turn will contribute to properly planning spatial based fisheries management.
51. For what concern the biological fisheries dependent data, the Project will continue its pilot programme for the collection of catch data (Biological Sampling) from bottom trawl fisheries exploiting *Parapenaeus longirostris*, *Merluccius merluccius* and *Mullus barbatus* in north Tunisia. The data gathered will be instrumental to improve stock assessment



exercises and the resulting scientific advice for fisheries management. The activities will see close collaboration with the GFCM Secretariat in view of the work planned in the framework of the Mediterranean Mid-term strategy (2017-2020).

52. In the coming period, MedSudMed will explore the possibility to continue supporting and further expanding the on-board monitoring pilot action to gather data on overall catch, bycatch, discards and accidental catch of sensitive species; moreover, the Project will explore the possible involvement of fishers in direct sampling and self-reporting actions regarding bycatch and incidental species. The Project Study Group for Stock Assessment will also continue the resource appraisal activities on selected target species, i.e. *Parapenaeus longirostris*, *Merluccius merluccius*, *Mullus barbatus*. Consolidated and more advanced models for assessment and simulation will be investigated to provide the best possible advice on the state of target species stocks and to evaluate likely consequences of different management scenarios.
53. Mention was given to the work on Deep Water Red Shrimps (DWRS) and related fisheries. In the coming period the Project will continue to support the joint process toward a better understanding of spatial distribution, abundance and overall stock status of DWRS. MedSudMed, in collaboration with EastMed and GFCM Secretariat, will support the organization of a joint Working Group to progress in the data preparation and analysis for preliminary stock assessment of *Aristaeomorpha foliacea* in the central-eastern Mediterranean. The outputs of this activity will feed the work of the GFCM Working Group on Stock Assessment of Demersal Species 2019, and support to the GFCM-SAC Work Plan for 2018-2020.
54. Given the ecological importance of elasmobranchs and their widespread occurrence in the south-central Mediterranean, the Project will support technical discussion and joint activities on demersal elasmobranchs. The Working Group on Elasmobranchs will be organised. The WG will progress toward the mapping of spatial distribution of selected elasmobranch species, as well as toward the development of an ATLAS on demersal Elasmobranchs in the MedSudMed area and the compilation of existing publications on elasmobranchs in a common repository. The WG will also investigate the possibility to assess the stock status of selected target species.
55. Where technical support to fisheries management is concerned, the Committee was informed that the Project would continue providing assistance to participating countries concerning the provisions of GFCM Recommendations, promoting multi-stakeholder discussion on this issue, including discussion on Management Strategy Evaluation. The Project could also provide technical support to participating countries in the development of national/local management plan if sought.
56. Joint activities would continue on small-scale fisheries (SSF) and recreational fisheries (RF). MedSudMed will support the finalisation of the case studies in SSF in terms of data collection, standardisation, merging and joint analysis in view of spatial mapping; the preparation of a common document outlining the method applied and results achieved will also be foreseen. The outputs of this activity will be used to fuel discussion at relevant GFCM meetings (Working Group on Small-Scale Fisheries and Sub-regional Committee for the Central Mediterranean). Where RF is concerned, the Project will foster joint discussion

on occasion of the WG-DEM and explore the possibility to compile in a single review document the legislation regulating RF currently in place at national level. The review document will be meant to further progress in the characterisation of RF in the Project area. The Project will also explore the possibility to develop case studies to test the proposed GFCM/SAC Guidelines for the assessment of RFs in the Project area in collaboration with GFCM.

57. To bring forward the work carried out on invasive non indigenous species in 2018, the Project will support the finalisation of the case studies initiated in all participating countries. The data collection and their standardisation, digitalisation and sharing will be completed. The Project will also support the preparation of documents outlining the approach adopted and overall results. Pilot studies on the periodic monitoring of invasive non-indigenous species will be planned and initiated. Further actions toward the characterisation of the main bio-ecological features (e.g. trophic level and interactions, potential mitigation strategies) of invasive species in the Project area will also be explored and results discussed during the MedSudMed WG-DEM. The results of the case studies will be the baseline for planning a wider scale monitoring programme and for identifying potential options to reduce the negative impact of invasive species.
58. In the coming period, given the increasing attention devoted to the impact of fishing activities on the marine environment and in terms of accidental capture of by catch, including endangered species or undersized specimens, MedSudMed will promote discussion on the spatial mapping of benthic communities for the identification of vulnerable marine ecosystems (VME) and will finalise the studies carried out on fishing gear selectivity. With this aim, the Project will take advantage of studies conducted at national level and will continue to collaborate with other initiatives at sub-regional level like e.g. MINOW and MANTIS. The work will be tackled in the framework of the MedSudMed Working Group on Demersals. The activities will contribute to the discussion on occasion of the next meeting of the GFCM WG VME and WG FiT.
59. The Project will organize the annual Working Group on Demersal Fisheries Resources to: review the work of the MedSudMed Study Group on Stock Assessment (SG-SA); continue discussion on the integration of socio-economic data in the appraisal of fisheries status for management strategies evaluation and bio-economic modelling; foster technical discussion in support of fisheries management; explore options for the involvement, on a pilot scale, of fishers for self-sampling and self-reporting; finalise the case studies initiated on Small Scale Fisheries, Recreational Fisheries and Non Indigenous Species; explore data availability and options to take advantage of existing geo-referenced fisheries dependent and fisheries independent data for mapping fishing activities and critical areas for fisheries resources; discuss on fishing technology exploring options to enhance selectivity of bottom trawl fisheries; progress toward the preparation of a catalogue on fishing gears; and identify priorities and plan future common joint research activities.
60. The Project will continue to support participating countries in the process of data collection, sharing, joint processing and results dissemination related to small pelagic fisheries resources. Particular attention to the appraisal of the status of small pelagic stocks will be devoted. The Project will continue the work done in the past years with the addition of the new acoustic data coming from the recently performed survey in Tunisian waters. It is also

foreseen to explore options to plan, in the long-term, the implementation of an inter-ship comparison for acoustic surveys between the Italian (R/V Dallaporta) and Tunisian (R/V Hannibal) research vessels. In addition, the Project will explore the technical options to perform acoustic surveys covering the entire Project area. Discussion will be held in the framework of the MedSudMed Working Group and/or Study Group on Small Pelagics.

61. Where fish ageing is concerned, the Project will continue to support the agreed multi-step programme to standardise *Trachurus trachurus* age determination through otoliths reading. The programme will include: a capacity development component, a standardisation exercises and the exchange of otoliths for reading comparison, the definition of common criteria for interpretation and age estimation. Once the process and methods for otoliths reading standardisation will be consolidated, the same approach could be used to other species. Moreover, MedSudMed will continue to support the joint survey data analysis on *T. trachurus* for spatial distribution and stock abundance determination.
62. In the coming period, the Project will continue to support discussion on and appraisal of *C. hippurus* stock and fisheries. Likewise, work will be done to complete the review document on *C. hippurus* and related fisheries. The activity will be carried out in cooperation with CopeMed II.
63. A meeting of the *Study Group for the joint processing of acoustic and ichthyoplankton data* will be organized on 2019. The Study Group will contribute to progress in the analysis and comparison of national acoustic, and ichthyoplankton data taking advantage of the new surveys carried out in 2018. The annual Working Group on Small pelagic fisheries resources (WG-SP) will be organized and will: review the work carried out by the *Study Group on the joint processing of acoustic and ichthyoplankton data*; progress toward the identification of spawning grounds for *E. encrasicolus* and *Sardinella aurita*; explore options to integrate in a single study the information on eggs, larvae, juveniles and adults of small pelagics; progress in the standardization of age reading for *Trachurus trachurus*; continue the joint discussion on multi-disciplinary studies on *Trachurus trachurus*; support joint discussion toward the estimation of biological parameters for small pelagics and progress in the assessment of their stocks; support the preparation of joint technical and scientific documents; identify priorities to be addressed on small pelagic fish and fisheries. The Working Group on small pelagics will meet in the second half of 2019; the organization of a further meeting in the first semester of 2019 will be explored. The possibility to invite expert/s from Algeria to the Study Group is envisaged in collaboration with CopeMed II.
64. Capacity development activities will be transversal to all areas of Project intervention and some key training activities are planned involving as appropriate scientists and national administrations. In particular, a training programme on studies for fish biology will be organized for staff of the Marine Biology Research Centre of Tajura, Libya (MBRC), as well as on-the-job trainings on fisheries socio-economic data collection and processing, and to digitalise geo-referenced data gathered through interviews with fishers. Moreover training on the use of satellite data in fisheries research will be carried out. The third edition of the Summer School on stock assessment co-organized with the other FAO Regional Projects (AdriaMed, CopeMed II and EastMed), GFCM and JRC will be held in July 2019.

65. Where communication is concerned, the Project, to enhance its visibility, as well as to further prize the Donor support, will implement a series of activities which include: i) the updating of the MedSudMed web site; ii) the preparation of communication material (leaflets); iii) the preparation of short videos illustrating specific aspects of the work of the Project in the countries; iv) Enhancing the presence on social media (e.g. Twitter), and disseminate as much as possible technical documents resulting from cooperative work.
66. Existing regional cooperation with other FAO Regional Projects such as AdriaMed, CopeMed II, and EastMed will continue. In particular, collaboration with CopeMed II will deal with 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. Cooperation with EastMed will deal in particular on Deep Water Red Shrimps. The Project will take advantage of collaboration 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 regional 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.
67. In line with previous decisions of the Coordination Committees and with the recommendations that emerged from the Independent Evaluation carried out in 2012, and with the recently approved GFCM Mid-term Strategy 2017-2020, the Project will continue and further strengthen international and regional cooperation at Mediterranean level with the GFCM and its subsidiary bodies.
68. At the end of the presentation the Chairperson commented that, the illustrated work plan covers all the issues necessary to the countries to fulfill the requirements set by the international agendas. He therefore opened the floor for comments and discussion.
69. With regard to the work toward the stock assessment of European hake, the representative of Italy, Mr Fabio Fiorentino, welcomed the ongoing work toward the collection of data from the eastern part of GSA 04. On this regard, he recommended that before to modify the consolidated stock assessment settings by changing the GSAs considered in the exercise, *ad hoc* discussion on stock boundaries would be necessary. The Committee agreed that, once data would be available from the eastern part of GSA 04, discussion should be held on stock boundaries and on the best approach to take advantage of these data.
70. With regards to the activities planned on Non-Indigenous Species (NIS), the representative of Tunisia, Mr Jarboui, informed the participants that in Tunisia efforts are being carried out to take advantage from the exploitation of the Blue crab (*Portunus segnis*) in GSA 14. In this respect, the INSTM has been called to collect data and launch an exercise for bioeconomic analysis on *P. segnis* fisheries. On this extent the support of the Project was requested to identify experts that could advice/train and contribute to run bioeconomic modelling e.g. through BEMTOOL.
71. The representative of Tunisia, Mr Jarboui, acknowledged the illustrated work plan on fishing technology and informed the meeting that, further to the work carried out in the framework of the Project on selectivity, several studies have been conducted in the Project area. Accordingly, Mr Jarboui proposed to include the results of these studies in the

document to be prepared by MedSudMed, or to use them to integrate the information provided in the review document on fishing technology being prepared by the GFCM. Following the discussion, the Committee concurred on the importance to gather existing information in all the countries and to promote the preparation of two documents, one focusing on the trials on selectivity for bottom trawling carried out in Tunisia and Algeria conducted in the framework of MedSudMed and CopeMed II and one as an integration of the GFCM review.

72. On fishing technology, the representative of Libya, Mr Ghmati, informed the Committee that the catalogue of fishing gears in Libya presented on occasion of the MedSudMed WG-DEM is being released and will be made available soon. The Committee therefore agreed to convene an *ad hoc* meeting on fishing technology after the publication of the catalogue in Libya. During the meeting the integration of the information included in the GFCM Review document should be planned by digging also all the literature available in Tunisia, Libya and Algeria. The overall achievements of this activity could then be presented at the next GFCM WGFIT planned for 2020.
73. Regarding the surveys at sea, Mr Missaoui, further informed the participants on the autumn-winter acoustic survey that has just been concluded. The survey was meant to be the first of a series of surveys aimed at the assessment of fish biomass at sea. One spring-summer survey for demersal fisheries resources has been planned for 2019, as well as a summer acoustic survey covering all Tunisian shelf. In this respect, the support of the Project was requested. The Committee agreed that efforts should be done by the Project to support surveys at sea and underlined the importance of strict coordination with the GFCM Secretariat.
74. When the activities on eggs and larvae are concerned, the representative of Italy, Mr Fiorentino, envisaged the possibility to expand the work done so far on small pelagics (anchovy, sardine, round sardinella, etc.) so to cover demersal species too. Larvae of demersals are always collected together with small pelagics and advantage could be taken from the available samples/data to investigate the presence of demersal fisheries target species like *Mullus barbatus* or *Parapeaneus longirostris*. These studies could contribute to better understanding the larval dispersion patterns and, ultimately, issues like stock connectivity and boundaries for these species.
75. On this regard, the representative of CopeMed II, Ms Hernandez informed the participants that experts at the University of Malaga are working on larval dispersion modelling in the Strait of Gibraltar and their experience would be available. By confirming the possibility to plan this activity in cooperation with CopeMed II, Ms Hernandez also recalled the work on ichthyoplankton identification done in the framework of CopeMed II in the western Mediterranean.
76. The Committee concurred on the importance to take the best possible advantage from existing data and from survey samples in general and recommended to explore the possibility of using existing data on ichthyoplankton in the framework of the MedSudMed Working Groups.
77. With regards to training activities, Mr Othman Jarboui, stressed the importance of having training on the use of satellite data for fisheries research. This activity specifically fits with

experts' priority on spatial planning and would be a good opportunity to strengthen national capacity. The proposal was welcomed by the Committee, and Ms Hernandez on this suggested that synergies could be found with CopeMed II as this issue could be considered of great interest also for CopeMed II participating countries. The Committee welcomed the proposal and recommended to consider possible synergies with also the other regional Projects.

78. The representative of MiPAAFT, Ms Ferraro, congratulated the Project for the work plan presented. She pointed out the key role of the Project played so far in strengthening the regional cooperation in support of the GFCM activities mainly to the SAC. On this purpose, she expressed the willingness of MiPAAFT that the Project could enlarge its cooperative framework by initiating joint activities on aquaculture, to address the GFCM strategy on the sustainable development of aquaculture in the Mediterranean and Black Sea. The Committee concurred on the proposal and recommended to establish synergies on this topic with the GFCM Secretariat.
79. The representative of Libya, Mr Ghmati, brought the Committee's attention to the possibility to propose some specific activities for Libya. The first proposal referred to the need of conducting a review of the fishing industrial fleet with the view of assessing the status quo to date. The fleet so far has been subject to several challenges, it is quite aged and an evaluation of the on board equipment is needed. This study will in turn help the relevant authorities to properly plan the management and potential development of the fishing fleet. To this extent, the technical support of the Project in preparing such an evaluation was requested. The Committee concurred that the Project, taking advantage of existing expertise in the MedSudMed and FAO framework, should support the planning of this evaluation study.
80. Mr Ghmati also put forward to the attention of the Committee the support to surveys at sea. He stressed the importance for Libya to resume some work for the direct appraisal of fish biomass at sea. Mr Ghmati reiterated the request raised in the last Coordination Committee to receive support from the Project in performing scientific surveys in Libyan waters. He mentioned that, considering the difficulties in having a research vessel operating in Libyan waters, the MBRC is ready to hire a commercial fishing vessel to conduct both trawl and acoustic survey.
81. The Committee welcomed the proposal and agreed that the Project will explore options for supporting surveys at sea. It was reiterated that this activity is well embedded in the mid-term strategy. The activity could be preceded by some on-the-job training for experts of the MBRC on surveys at sea on board of research vessels that routinely carry out scientific surveys.
82. The Coordination Committee's attention was drawn to the need to align the time schedule of the Coordination Committee to the calendar year and to the GFCM calendar (being the GFCM session at the end of the year). The Committee discussed at length concurring that the move of the Coordination Committee at the end of the year could facilitate the planning of the project activities as well their implementation. After a thorough discussion the Committee agreed to anticipate the Coordination Committee meeting at the end of the year. To this extent it was also agreed that the next Coordination Committee will be at the end of 2019.

83. After thorough discussion and comment on the content of the Document CC/17/03, the Committee agreed on the programme of activities proposed and the suggestions made by the participants for the coming period. The activities will be carried out upon budget availability.

**Other matters (Agenda item n.6)**

84. Delegates and Meeting participants wished to express their thanks to the Ministry for the Environment, Sustainable Development and Climate Change of Malta for the kind hospitality provided.

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

85. The Tunisian delegation invited the Committee to consider Tunisia as venue for the next meeting. The Committee was also reminded about the pending invitation by Libya. The Committee welcomed the invitations and looked forward to meet in Libya as soon as the general conditions will make it possible. The next Coordination Committee meeting will be tentatively held in November-December 2019.

86. The Report was adopted on 06 February 2019.

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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 and strategy for the next intersession period**

*An update on the GFCM activities for the period 2019-2020 and on the Mediterranean mid-term strategy (2017-2020) will be presented. Discussion will be held on how the activities foreseen by the Project are integrated and will contribute to the Mediterranean Strategy 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 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

<b>FAO-MedSudMed: CC/17/01</b>	Provisional annotated agenda
<b>FAO-MedSudMed: CC/17/02</b>	Report on Project's Progress (February 2017 – January 2018)
<b>FAO-MedSudMed: CC/17/03</b>	Development of the Project's Programme
<b>FAO-MedSudMed: CC/17/Info 01</b>	Provisional list of participants
<b>FAO-MedSudMed: CC/17/Info 02</b>	Report of the Sixteenth Meeting of the Coordination Committee. <i>MedSudMed Technical Documents N.41</i>
<b>FAO-MedSudMed: CC/17/Info 03</b>	MedSudMed Study Group for Stock Assessment in the south-central Mediterranean Sea (FAO HQ, Rome, 01-05 October 2018) – Meeting memorandum
<b>FAO-MedSudMed: CC/17/Info 04</b>	<ul style="list-style-type: none"> <li>- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Parapenaeus longirostris</i> GSAs 12-16. Presented at the GFCM-SAC – Working Group on Stock Assessment on Demersal Species (Rome, 13-18 November 2017).</li> <li>- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Merluccius merluccius</i> GSAs 12-16. Presented at the GFCM-SAC – Working Group on Stock Assessment on Demersal Species (Rome, 13-18 November 2017).</li> <li>- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Mullus barbatus</i> GSA 15. P GFCM-SAC – Working Group on Stock Assessment on Demersal Species, Benchmark on <i>Mullus barbatus</i> (Rome, 13-18 November 2017);</li> <li>- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Mullus barbatus</i> GSA 16. P GFCM-SAC – Working Group on Stock Assessment on Demersal Species, Benchmark on <i>Mullus barbatus</i> (Rome, 13-18 November 2017);</li> <li>- Stock Assessment Forms on Demersal Fisheries Resources, namely <i>Mullus barbatus</i> GSAs 12-14. P GFCM-SAC – Working Group on Stock Assessment on Demersal Species, Benchmark on <i>Mullus barbatus</i> (Rome, 13-18 November 2017).</li> </ul>
<b>FAO-MedSudMed: CC/17/Info 05</b>	FAO-MedSudMed Training workshop on small scale fisheries and non-indigenous species (GFCM HQ, Rome, Italy 10-12 July 2018).

<b>FAO-MedSudMed:</b> <i>CC/17/Info 06</i>	Joint MedSudMed/EastMed/GFCM Data Preparation Meeting Deep water red shrimp in the Eastern-Central Mediterranean Sea (GFCM HQ, Rome, Italy, 17-21 September 2018) – Meeting memorandum.
<b>FAO-MedSudMed:</b> <i>CC/17/Info 07</i>	MedSudMed Working Group on Demersal Fisheries Resources in the south-central Mediterranean Sea (FAO HQ, Rome, 12-15 November 2018) – Meeting memorandum.
<b>FAO-MedSudMed:</b> <i>CC/17/Info 08</i>	MedSudMed Technical meeting in support of fisheries management in the south-central Mediterranean Sea (Tunis, Tunisia, 27-28 March 2018 – Meeting memorandum
<b>FAO-MedSudMed:</b> <i>CC/17/Info 09</i>	MedSudMed Working Group on Small Pelagic Fishery Resources in the south-central Mediterranean Sea (Palermo, Italy, 23 - 25 January 2019 – Meeting memorandum
<b>FAO-MedSudMed:</b> <i>CC/17/Info 10</i>	Rapport d'activité et analyses des données socioéconomiques des chalutiers ciblant la chevrette ( <i>Parapenaeus longirostris</i> ) et le merlu ( <i>Merluccius merluccius</i> ) dans la région nord de la Tunisie - DRAFT
<b>FAO-MedSudMed:</b> <i>CC/17/Info 11</i>	Major activities of the FAO Regional Projects. Documents presented at the GFCM SAC 20 <sup>th</sup> (Tangier, Morocco, 26-29 June 2018)
<b>FAO-MedSudMed:</b> <i>CC/17/Info 12</i>	List of Documents

## **Report on the Project's Progress (February 2018– January 2019)**

### **Introduction**

This paper provides an overview of the main activities carried out by the Project MedSudMed between February 2018 and January 2019, including meetings, training, research activities and technical assistance provided to the participating countries, as well as the cooperation with the FAO Mediterranean Projects (AdriaMed, CopeMed II, EastMed), FAO General Fisheries Commission for the Mediterranean (FAO GFCM), its Scientific Advisory Committee (SAC) and other relevant institutions. The work programme and recommendations of the 16<sup>th</sup> meeting of the MedSudMed Coordination Committee (Rome, Italy, 13-14 February 2018; CC/17/Info 02) were implemented.

The activities carried out during the intersessional period comply with the methodological framework of the Project and its mandate for the current phase.

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

The Project, in close cooperation with the research institutes participating, initiated to implement the work plan for the medium and long term activities endorsed by the 11<sup>th</sup> MedSudMed Coordination Committee (Malta, April 2013). The work plan is also in agreement with the conclusions of the FAO independent evaluation (2012) and Project mandate. The activities carried out contributed to the Mediterranean mid-term strategy (2017-2020) endorsed by the GFCM for the sustainability of Mediterranean and Black Sea fisheries (Resolution GFCM/40/2016/2).

### 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 implemented to promote discussion among all fisheries stakeholders from participating countries in support of agreed management strategies for fisheries exploiting shared resources in the Project area.

Under this Project component, the following activities were supported:

- Study Group for Stock Assessment (SG-SA);
- Technical discussion on small scale and recreational fisheries;
- Technical discussion on invasive non-indigenous species;
- Joint MedSudMed/EastMed/GFCM Data Preparation Meeting on Deep water red shrimp in the Eastern-Central Mediterranean Sea;
- Working Group on Demersal Fisheries Resources (WG-DEM);
- Technical discussion in support of fisheries management
- Socio-economic data collection in fisheries exploiting *P. longirostris* and *M. merluccius* in Tunisia;
- Direct (on-board) observation of fisheries for bycatch and discards in Tunisia.

#### - *Study Group for Stock Assessment (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. The stock assessment related activity were directly embedded in the framework of the MedSudMed Working Group on Demersals (WG-DEM). With the increase of the stocks to be assessed and of the time necessary to complete the assessment exercises, the national experts deemed necessary to hold specific meetings on stock assessment complementary to the WG-DEM. In this view, the MedSudMed *Study Group for Stock Assessment (SG-SA)* was established in 2014 and annually organised since then. The latest SG-SA was held at FAO HQ, Rome, from 01 to 05 October 2018. The meeting was attended by 10 experts from all the Project participating institutions. Staff of the GFCM Secretariat and of the MedSudMed Projects also attended the meeting. During the SG-SA: i) the organisation and agenda of the coming GFCM Working Group on Stock Assessment (November 2018) was dealt with. In particular, the modus operandi and expected outcomes of the GFCM Benchmark stock

assessments were discussed; ii) the stock assessment of *Parapenaeus longirostris* and *Merluccius merluccius* in the MedSudMed area (south-central Mediterranean Sea, GSAs 12-16) were jointly updated using traditional models (Extended Survivors Analysis, XSA); iii) Three preliminary stock assessment exercises for *Mullus barbatus* were carried out, one per each geographical sub-area; GSAs 15-16, GSA 12 (exploratory exercise), GSAs 13-14; and vi) follow up to finalise the work was planned in view of the MedSudMed WG-DEM (FAO HQ, Rome, 07-08 November 2017) (CC/17/Info 03, CC/17/Info 04).

- Technical discussion on small scale and recreational fisheries

Attention was devoted by the Project to small scale fisheries (SSF) in recent years. The Project actively contributed to the GFCM Regional symposium on SSF (Malta, December 2013), to the GFCM Regional conference *Building a future for sustainable small-scale fisheries in the Mediterranean and the Black Sea*, Algeria<sup>3</sup>, March 2016 and to the GFCM High-level Conference on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea (Malta 25-26 September 2018). To progress on the characterisation of SSF, MedSudMed supported in 2017 some case studies to map the spatial distribution and overall activities of selected SSF in the south-central Mediterranean. The case studies were developed in 2018 and, as follow up, the Project organised an *ad hoc* Training workshop on small scale fisheries and non-indigenous species (GFCM HQ, Rome, Italy 10-12 July 2018). The meeting was attended by 15 researchers from Italy, Libya, Malta and Tunisia. Invited experts from the CNR (ISMAR-CNR) of Ancona (Italy) and of the Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), staff of the GFCM Secretariat and MedSudMed Project also participated in the meeting. During the meeting, participants: i) made progress toward spatial mapping of small scale fisheries as per case studies developed in Italy, Libya, Malta and Tunisia (including a capacity development component on QGIS and preliminary mapping exercises); ii) explored options for *ad hoc* case studies on recreational fisheries (RF) based on the Guidelines for RF data collection drafted by the GFCM Secretariat; iii) defined follow up activities to be implemented within the MedSudMed framework (CC/17/Info 05).

- Technical discussion on invasive non-indigenous species

A number of species from the Atlantic and from the Red Sea/Indian Oceans have entered in the Mediterranean Sea in the last decades. Some of them remained rare or occasional, others reached relatively high level of abundance and became either a resource for local fisheries or a major issue threatening indigenous species, the ecosystem and, in turn, fisheries. The Project was requested by its Coordination Committee to develop specific actions focused on non-indigenous species. In this view, pilot case studies were implemented at national level by adopting the Local Ecological Knowledge (LEK) protocol, a standardised protocol for reconstructing the dynamic of the spreading of non-indigenous species since their first recording. The preliminary results of the case studies were presented at the GFCM SRC-CM (Tunis, Tunisia, 18-20 April 2018). The discussion on non-indigenous species was resumed during the MedSudMed Training workshop on small scale fisheries and non-indigenous species (GFCM HQ, Rome, Italy 10-12 July 2018). On that occasion, the preparation of a MedSudMed Technical Document on non-indigenous species based on data gathered using

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<sup>3</sup> Vitale, S., Aquilina, M., Ben Hadj Hamida, N., Bradai, M.N., Falsone, F., Jarboui, O., Micallef, R., Scannella, D., Fiorentino, F., Arneri, E., Ceriola, L. 2017. Artisanal fishery communities in the central Mediterranean: three managed case studies in the blue growth perspective.

the LEK protocol was agreed on and an overall timeframe was defined. In addition, during the meeting discussion was held to plan a periodic monitoring of non indigenous species. To this extent a second protocol was explored, the LEK II and the development of new case studies by applying the LEK II was agreed on (CC/17/Info 05).

- *Joint MedSudMed/EastMed/GFCM Data Preparation Meeting on Deep water red shrimp in the Eastern-Central Mediterranean Sea*

Deep water red shrimps (DWRS) *Aristaeomorpha foliacea* and *Aristeus antennatus* are among the most valuable shared fisheries target species resources in the central and eastern Mediterranean Sea. Their stock are exploited by several countries thus calling for joint studies and joint discussion on the management of their fisheries. To gather more insights into DWRS distribution, abundance and overall stock status and move forward into the characterisation of their fisheries, a *Joint MedSudMed/EastMed/GFCM Data Preparation Meeting on Deep water red shrimp in the Eastern-Central Mediterranean Sea* was organized. The meeting was attended by 20 experts from the central and eastern Mediterranean countries. The FAO MedSudMed, EastMed, GFCM Secretariat staff also participated in the meeting. As outcome, the meeting: i) advanced towards determining the fishing footprint (or fishing grounds) of deep water red shrimp (DWRS) fisheries in the Eastern-Central Mediterranean; ii) reviewed the available data for the assessment of DWRS stock; iii) made progress toward the definition of assessment and/or management units for DWRS stocks; iv) identified knowledge and data gaps; and v) defined a roadmap to fill the gaps and move towards the stock assessment of DWRS (CC/17/Info 06).

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

The annual session of the MedSudMed Working Group on Demersal Fisheries Resources (WG-DEM) was held at FAO HQ, Rome, on 12-15 November 2018. The MedSudMed WG-DEM was attended by 23 researchers from all the research institutes involved in the Project and by a representative of the European Union DG-MARE, the GFCM Secretariat and Project staff. The WG-DEM i) reviewed the appraisal of the state of demersal fisheries resources (*P. longirostris*, *M. merluccius*, and *M. barbatus*) and fisheries in the MedSudMed Project area as produced by the SG-SA; ii) devoted one session to the stock assessment of *Sardina pilchardus*, taking advantage of the presence of experts in fish population dynamics; iii) reviewed the work done and achievements reached by the case studies on the SSF mapping and invasive non-native species and planned their finalisation and follow up (further details are provided hereunder in the section devoted to SSF and alien species); iv) promoted technical discussion in support of fisheries management; v) reviewed the state of MedSudMed Technical Documents and the scientific papers in the newly published Hydrobiologia Special Issue Marine ecosystems and living resources in the Central Mediterranean Sea (Hydrobiologia 821: 1, Pages 1-253); and vi) formulated proposals for specific activities to be implemented in the future within MedSudMed framework (CC/17/Info 07).



- Technical discussion in support of fisheries management

With the objective to promote a participatory approach and disseminate scientific data and discussion outputs, MedSudMed organised a series of technical meetings involving all fisheries stakeholders of all participating countries. The meetings were aimed at contributing to 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 recommendation adopted at the 40<sup>th</sup> session of the FAO GFCM (Malta, May-June 2016). The meetings provided an opportunity for all fishery stakeholders to share information, knowledge and expertise, to compare experience and to identify priorities among all the MedSudMed participating countries. In the intersession period, a meeting was organised in Tunis, Tunisia on 27-28 March 2018. A total of 35 participants attended the meeting including representatives of fisheries associations, fisheries administrations, non governmental organizations from Italy, Libya, Malta and Tunisia. Staff from DG-MARE, GFCM Secretariat and MedSudMed also participated in the meeting. The meeting was divided into two sessions, the first devoted to Deep-water rose shrimps (*Parapenaeus longirostris*) and European hake (*Merluccius merluccius*), the second devoted to Deep water red shrimps (*Aristaeomorpha foliacea* and *Aristeus antennatus*). During the meeting: i) fisheries stakeholders were updated on the outcomes of the 41<sup>st</sup> session of the GFCM; ii) discussion was held on possible management scenarios to be used in simulation models for management strategies evaluation of the Hake-Deep Water Rose Shrimp demersal fishery; and iii) a specific session was devoted to review past, ongoing and coming discussion, studies and empirical knowledge functional to the management of Deep water red shrimps fisheries (*Aristaeomorpha foliacea* and *Aristeus antennatus*) in the central and eastern Mediterranean Sea. The outcomes of the meeting were used to feed discussion during several GFCM meetings, the Sub-regional Committee for the Central Mediterranean Sea (SRC-CM, Tunis, Tunisia 18 to 20 April 2018.), the Joint Data preparatory meeting (September 2018, CC/17/Info 06), SAC 20<sup>th</sup> and GFCM 42<sup>st</sup> sessions (26 - 29 June 2018, Tangier, Morocco and 22 - 26 October 2018, FAO HQ, Rome, CC/17/Info 08).

- 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 13<sup>th</sup> 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, Tunisia, in cooperation with the INSTM. The aim of this pilot activity was 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*. After a training for data collectors and overall survey coordinator done in 2015, the sampling scheme for the socio-economic survey was consolidated in collaboration with the local administrations and data collectors. The first data collection was initiated in April 2016 in the ports of Tabarka, Bizerte, La Goulette and Kelibia. Either a census or sampling approach was adopted depending on the area considered and the number of vessels operating in the area. Fishing vessels exploiting *P. longirostris* and *M. merluccius* in the winter period and based in the south or east of Tunisia were also included in the sampling. In the reporting period, the surveys for gathering 2017 data was completed and now three years of data are available,

2015, 2016 and 2017. The preliminary results of the survey were presented on occasion of the MedSudMed WG-DEM (CC/17/Info 07). On that occasion the main economic indicators were explored and follow up activities were planned. The data socio-economic data collection is functional to: i) provide to national authorities with updated data on deep water trawl fisheries socio-economic aspects; ii) improve capability of the country in being compliant with GFCM requirements in terms of data collection and submission; and iii) the collection of basic information for the proper assessment and bio-economic appraisal of *P. longirostris* and *M. merluccius* and fisheries performance in the south-central Mediterranean in view of the GFCM multi-annual management plan set by the Recommendation GFCM/40/2016/04. The information gathered is also suitable for running models for management strategy evaluation (CC/17/Info 10).

- *Direct (on-board) observation of fisheries for bycatch and discards in Tunisia*

The Project, in cooperation with the INSTM, supported in 2016 a Pilot action on the direct monitoring of bottom trawl fisheries in the Gulf of Gabès (GSA 14, south Tunisia). The monitoring was carried out involving observers on board. A fishing vessel with the same characteristics of the 80% of the bottom trawl fisheries in GSA 14 was monitored during regular fishing operations 10 days per month every month. The activity was planned to address a request of the 14<sup>th</sup> Coordination Committee meeting (Rome, Italy, April 2016) to provide new geo-referenced data on commercial catch including on discard and incidental catch for supporting spatial base studies and fisheries management planning. After two years of monitoring, geo-referenced data on about 500 fishing operations and catch of target and non target species (including on elasmobranchs and bottom biocoenoses) were recorded per haul per fishing trip. Samples of target and accessory species were taken, as well as samples of biocoenoses. The data were processed and maps were produced using simple spatial representation and kriging interpolation (Bray Curtis inverse distance similarity). Preliminary outputs of activities including distribution maps for some target species in the GSA 14 were presented on occasion of the GFCM SRC-CM held in Tunis, Tunisia, on 18-20 April 2018. Given the overall achievements, in the reporting period the direct (on-board) observation of fisheries in Tunisia was further supported in strong cooperation with the GFCM. The activity is still ongoing and will result in: i) enhanced relationship between scientific institutions and professional fisheries in Tunisia; ii) updated information on fishing grounds, fishing operations and overall catch (including discard) for bottom trawlers in the Gulf of Gabès available to national institutions; iii) improved knowledge on spatial distribution of some fisheries target species; iv) new data available for planning spatial based fisheries management.

## **1.2. MedSudMed Component on Small Pelagic fish**

As for the previous years and following the requests formulated during the MedSudMed Coordination Committee meetings, efforts were made by the Project to pursue: i) the improvement of expertise on small pelagic fisheries resources; ii) the harmonisation of methodologies for data collection at sea; iii) the standardisation and joint processing of data gathered during surveys; iv) the preparation of preliminary stock assessments for priority

species and v) the dissemination of results achieved through the publication of scientific and technical documents.

- Working Group on Small Pelagic Fishery Resources

The Project organised the annual session of the MedSudMed Working Group on Small Pelagic Fisheries Resources (WG-SP) in Tunis, Tunisia, from 23 to 25 February 2019. On that occasion the Study Group for joint processing of survey data (SG) met back to back with the WG-SP to progress in the joint data analysis; the outcomes of the SG were brought at the attention of the WG- SP and discussion on achieved results and of follow up planning was held.

The WG-SP was attended by 15 researchers from the research institutes involved in the Project and by the Project staff. During the meeting, national experts made progress toward the stock assessment of *Engraulis encrasicolus* and *Sardina pilchardus* in the south-central Mediterranean Sea; in particular the stock assessment exercises presented to the GFCM WG-SASP 2018 were reviewed and inputs were provided for further improvement. The work done for identification of spawning areas of *Sardinella aurita* and *Engraulis encrasicolus* in the south-central Mediterranean Sea was resumed. In particular, the standardised data set developed was further expanded (two additional years of data were included and a wider coverage for GSA 12 was ensured) and a preliminary exercise was carried out to: i) produce the first qualitative map for spawning areas of both species in the entire south-central Mediterranean Sea, and ii) evaluate the persistency of spawning areas; iii) explore connectivity among spawning areas and stocks. Moreover, the meeting served to define the next steps for the standardisation of *Trachurus trachurus* age determination through otoliths reading. In particular, studies carried out on *T. trachurus* age and growth at national level were reviewed and difficulties in otoliths reading and limits of growth parameters estimates were pointed out. An exercise for otoliths reading standardisation was planned, including otoliths sampling, progress in marginal and marginal increment analyses, planning a follow up meeting and exchange for blind comparative reading. The Special Issue of the Scientific Journal *Hydrobiologia*<sup>4</sup> finalised and published in October 2018 with the support of the Project was illustrated and the plan for replicating the successful experience was defined. At the end of the meeting, the priorities for joint studies and activities on small pelagic stocks and fisheries to be carried out in the framework of MedSudMed were identified (CC/17/Info 09).

## **2. National Capacity development and training**

During the intersessional period, considerable effort was devoted to support the national capacity development, mainly through on-the-job and *ad hoc* 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

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<sup>4</sup> Marine Ecosystems and Living Resources in the Central Mediterranean Sea, *Hydrobiologia* 821: 1, 1-253

to the Project activities. 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, three training courses were held during 2018. The courses covered methods for basic biology investigations, data processing for use of geographic information systems (GIS) for spatial mapping and stock assessment. All the trainings comprised lectures and hands-on sessions for the application of techniques or approaches. Experts from all the MedSudMed participating institutions attended the 2018 training programme, laying the basis for the standardisation of methods used and outputs produced in joint and national studies.

Training activities carried out by MedSudMed in the reporting period:

- Digitalisation of interview data for spatial mapping using QGIS (during the Training workshop on small scale fisheries and non-indigenous species for Rome, Italy 10-12 July 2018);
- Age determination of elasmobranchs through vertebrae reading, case study *Mustelus mustelus* (Mazara del Vallo, Italy, 17-21 July 2017);
- Summer School in Quantitative Fisheries Stock Assessment, Module I and Module II (IAMC-CNR of Capo Granitola, Italy, 09-20 July 2017).

Specific emphasis deserves the Summer School in Quantitative Fisheries Stock Assessment. It was jointly organised in collaboration with the FAO Mediterranean Projects AdriaMed, CopeMed II, EastMed, the FAO General fisheries Commission for the Mediterranean (GFCM) and the European Commission Joint Research Centre (JRC). It was the second session of a capacity development programme meant to be a permanent forum for experts from the entire Mediterranean and Black Sea region to be held annually, thus laying the basis for cooperative and harmonised stock assessment studies in the entire Mediterranean Sea.

Following a specific request formulated by the National Focal Point and Director of the Institut National des Sciences et Technologies de la Mer of Tunisia (INSTM), with the aim to cope with the priority to maintain and further enhance national capacity for in the field biological sampling from small scale (clams) and commercial fisheries, the Project finalised the acquisition of a vehicle to be used for in the field sampling by the INSTM. Moreover, the Project continued to support the process to allow the Tunisian R/V Hannibal to perform experimental surveys at sea for fishery independent data collection.

### **3. Regional cooperation**

#### - Liaisons with the Donors and member countries

The Project had strong links with the Donors (MiPAAFT and EU-DG-MARE). In the intersessional period, a series of coordination meetings were held at the MiPAAFT Headquarters. Occasion was taken during the 20<sup>th</sup> session of the GFCM SAC (June 2018), the GFCM High-level conference on sustainable small-scale fisheries in the Mediterranean and the Black Sea (September 2018), the GFCM 42<sup>nd</sup> session (October 2018) and GFCM

FishForum 2018 (10-14 December 2018, FAO headquarters, Rome) to meet, discuss and coordinate with the EU-DG-MARE staff for the preparation and submission of new grant application for additional funds in the framework of the GFCM strategy (2017-2020). An ad hoc mission was organized in Brussels (Belgium) with representatives of EU-DG MARE (August 2018<sup>7</sup>) to discuss new funding opportunities. Liaison meetings were held through the year with the Ministry for Agriculture, Food, Forestry and Tourism Policies of Italy (MiPAAFT) to ensure continuity to the Project activities.

The Project staff took advantage of several GFCM meetings (the last being the 42<sup>nd</sup> GFCM plenary session) to held meetings with the Director General of the DGPA (Direction Générale de la Pêche et de l'Aquaculture) and the Chairperson of the Authority for Marine Wealth of Libya. Emerging priorities at national level and for the MedSudMed area in general were discussed and possible future activities were planned.

The reinforcement of regional cooperation was encouraged by the Project through support provided to regional experts for the participation 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 for a team of experts (8, including the Director) from the MBRC for the period May 2018 – June 2019. This activity resulted in the full participation of MBRC staff to MedSudMed activities and meetings organised in the reporting period.

#### Cooperation with other FAO Mediterranean Projects and similar initiatives

To strengthen international and regional cooperation, the Project operated closely with the FAO Regional Projects AdriaMed, CopeMed II, and EastMed. In particular, the Project interacted closely with AdriaMed<sup>5</sup>, with support provided on technical issues and administrative matters. In this view, the Project also participated in: i) the AdriaMed Working Group on demersal and small pelagic fisheries resources (FAO HQ, Rome, on 8-9 October 2018 and 30 October 2019 respectively); ii) AdriaMed Study Group on intercalibration of fish otolith reading (FAO-HQ, Rome on the 29-30 October 2018); and iii) AdriaMed technical meeting towards the development of management measures (MSE) in the Adriatic Sea (FAO HQ, Rome, 22-23 March 2018). Additionally, cooperation was sought with AdriaMed (ASFA International Partner) for the inclusion of *Libyan Journal of Marine Science* (former *Bulletin of Marine Biology Research Center*) issued by the Marine Biology Research Center of Tajura (Libya) into the ASFA, under the monitoring responsibility of AdriaMed.

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<sup>5</sup> Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea

Cooperation was strengthened with the FAO Project CopeMed II and EastMed to optimise the use of human and financial resources. MedSudMed staff participated to the 11<sup>th</sup> CopeMed II Coordination Committee (07-08 November 2018, Málaga, Spain). The Project actively cooperated with AdriaMed, CopeMed II and EastMed, JRC (Joint Research Centre of the European Commission) e GFCM for the organisation of the Summer School on Quantitative Fisheries Stock Assessment (July 2017). In addition, the project, in collaboration with CopeMed II, promoted and provided technical assistance to Algeria and Tunisia bilateral discussion for the identification of species of joint interest for stock assessment purpose and for planning possible joint surveys at sea.

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 January 2019) to consolidate and develop common activities.

In the framework of the FAO decentralisation process, MedSudMed is collaborating 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 of the Project.

Cooperative actions were carried out with the

- EU Interreg funded Project *MPA-Adapt* on the use of a common protocol for collecting data on marine invasive species on routine basis as well as on data analysis.
- Marine Stewardship Council (MSC) BlueFish Project funded by MAVA Foundation on the engagement of selected Italian fisheries in moving towards sustainability
- EU funded Project MANTIS on the Sicilian stakeholder involvement and gather feedback on the simulations of spatial protection scenarios in the Strait of Sicily (defined on the basis of scientific data and suggestions from fishers, as collected in the 2016-2017 questionnaires and meetings).

In addition the Project participated in the following events:

Cookin'Med, Agrigento, Italy, 30 September 2018 organized by UNIMED.

#### Cooperation with the GFCM

Cooperation was further sustained with the GFCM and the GFCM Subsidiary bodies (CC/17/Info 11). Several informal coordination meetings were held with the GFCM Secretariat during the intersessional period, also back to back to FAO GFCM events, in order to strengthen collaboration and to find synergies. In addition to those meetings, the following meetings were held:

- Preparatory meeting for the Workshop on MSE and the SubRegional Committee for the Central Mediterranean (15 March 2018);
- Coordination meeting on the preparation to the GFCM FishForum 2018 (20 March 2018);
- Coordination meeting on the mid-term strategy (FAO-HQs 22 February 2018);
- Coordination meeting for the joint activities on Deep water red shrimps (Tunis, Tunisia, 28 March 2018);

- Coordination meeting on the Summer school organization (26 March 2018);
- Preparatory meeting for Working Groups on Stock Assessment (19 July 2018);
- Coordination meeting on the Summer school 2019 organization (18 January 2019).

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 coordinated the support to the participation of national scientists in the meetings organised by the GFCM. Overall, MedSudMed supported the participation of about 25 experts to the following meetings held in the intersession period (CC/17/Info 11):

- GFCM Expert meeting on the formulation of advice on fisheries (FAO-HQ, Rome, 1<sup>st</sup> March 2018);
- GFCM Meeting for the preparation of the High-level Meeting on small scale fisheries (FAO HQ, Rome, 2 April 2018);
- Working Group on Vulnerable Marine Ecosystems (WGVME) (FAO HQ, Rome, 26 - 28 February 2018);
- Workshop on the assessment of management scenarios for Mediterranean case studies, including *ad hoc* session for small pelagic species in the Adriatic Sea (Zagreb, Croatia, 9-11 April 2018);
- GFCM SAC Workshop on the management of European eel (WKMEASURES-EEL, Tunis, Tunisia, 16 April 2018);
- GFCM SAC Working group on Fishing Technology (WGFiT, Tunis, Tunisia, 17-18 April 2018);
- GFCM SAC Sub-regional Committee for Central Mediterranean (SRC-CM), including non-indigenous species (Tunis, Tunisia, 19-20 April 2018);
- GFCM Scientific Advisory Committee on Fisheries (SAC) - 20<sup>th</sup> session (Tangiers, Morocco, 26 - 29 June 2018);
- GFCM High –level conference on sustainable small-scale fisheries in the Mediterranean and the Black Sra (25-26 September 2018, Malta);
- 42<sup>nd</sup> session of the General Fisheries Commission for the Mediterranean (9<sup>th</sup> session of the Committee on Administration and Finance, CAF) (FAO HQ, Rome, 22 - 26 October 2018);
- GFCM Working groups on stock assessment of demersal species (WGSAD) and small-pelagic species (WGSASP, FAO HQs Rome, Italy, 19-24 November 2018);
- GFCM FishForum 2018 (FAO HQs, Rome, 10-14 December 2018).

#### **4. Project Communication**

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

The Project put in place a series of activities to enhance its visibility and ensure that participating countries are informed of the progress made in achieving the targets and outputs set during the Coordination Committee. These included: i) the updating of the MedSudMed web site ([www.faomedsudmed.org](http://www.faomedsudmed.org)), ii) enhancing the digital presence through GFCM and FAO websites, as well as on social media (GFCM and FAO Twitter accounts), and iii) the preparation of promotional videos illustrating specific aspects of the work of the Project in the countries. In this respect, one video was produced in cooperation with the other FAO

Mediterranean Projects (AdriaMed, CopeMed II, and EastMed) on the activities that these projects put in place over more than 20 years of cooperation in the Mediterranean.

The visibility plan put in place in turn resulted in an improved visibility of the Donors contribution in the Mediterranean Sea as well as a raise awareness on the work done by the Project outputs in supporting the target set at international level (e.g. FAO SDGs, GFCM mid-term strategy).

#### 4.2. Technical Documents and reports

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 30 MedSudMed Technical Documents are now available as .pdf files. The MedSudMed Technical Documents are included in the ASFAs (Aquatic Sciences and Fisheries Abstracts) database. The most recent Project publications are also disseminated through the Project's mailing list. Three technical document and two scientific reports related to meetings and specific research activities promoted by the Project were finalised and circulated:

- MedSudMed Working Group on Demersal Fisheries Resources in the south-central Mediterranean Sea (FAO HQ, Rome, 12-15 November 2018). GCP/RER/010/ITA/MSM-SR-1. *MedSudMed Scientific Reports*. No 11: 19 pp.
- MedSudMed Working Group on Small Pelagic Fishery Resources in the south-central Mediterranean Sea (Tunis, Tunisia, 23-25 January 2019). GCP/RER/010/ITA/MSM-SR-14. *MedSudMed Scientific Reports*, No 14: 23 pp.
- MedSudMed. 2016. Report of the Sixteenth 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-41. *MedSudMed Technical Documents*, No 41: 37 pp.

- *Special issue Hydrobiologia: Marine ecosystems and living resources in Central Mediterranean sea*

Further to the Technical Documents produced, considerable effort was devoted by MedSudMed in supporting the dissemination of the outputs of joint studies promoted by the Project. As described in the paragraph on Small Pelagics, the Project coordinated and supported the preparation of a monography focused on the MedSudMed area on the scientific peer-reviewed Journal 'Hydrobiologia'. The special issue was titled: *Marine ecosystems and living resources in Central Mediterranean sea*. Overall, 15 titles were published in the special issue. The Special issue contents and papers are available on the Hydrobiologia Web site (<https://link.springer.com/journal/10750/821/1>).



## 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 5<sup>th</sup> 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 and of Tourism (MiPAAFT), 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, 13-14 February 2018), the Italian Donor confirmed the extension of its financial support to the Project activities for the whole 2019. Moreover, the co-Donor European Commission-DG Mare further provided the contribution for the entire 2019, up to March 2020. The possibility of further extension is under discussion with both Donors MiPAAFT and EU-DGMARE.

Based on the above, the work plan presented in this document covers approximately 12 months of activities.

The activities proposed take into account the objectives and results achieved so far, the recommendations received during the 16<sup>th</sup> Coordination Committee meeting (13-14 February 2018, 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 work plan takes into account the indications and recommendations of the 42<sup>nd</sup> session of the GFCM (Montenegro, October 2018). The cooperation established with the FAO General Fisheries Commission for the Mediterranean (GFCM) is also considered and all the activities planned are integrated, consistent and will contribute to the Mediterranean mid-term strategy (2017-2020) endorsed by the GFCM for the sustainability of Mediterranean and Black Sea fisheries (Resolution GFCM/40/2016/2); and the GFCM SAC Sub Regional Committee for the Central Mediterranean.

All the activities include collaboration with other FAO Mediterranean projects AdriaMed, CopeMed II, and EastMed. The activities are also in line with the MedFish4Ever Declaration (March 2017) and are aimed to sustain countries in achieving the target set at national level by the UN Sustainable Development Goals.

The final work plan will take into due account the recommendations of the 17<sup>th</sup> Coordination Committee meeting, in accordance with the priorities expressed by the countries on each activity and directly linked to the Project's budget availability.

## WORK PLAN

For the coming period the Project, in collaboration with the participating institutions, will focus its attention on research activities in support to fisheries management, the filling of scientific gaps on fisheries, fisheries resources and the ecosystem, the finalisation of pending publications and the training and capacity development 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 communication system;
- e. Regional cooperation.

Moreover, in coordination with the participating countries, all the FAO Regional Projects operating in the Mediterranean and the GFCM, efforts will be made to draft a common calendar of activities to avoid any overlap, to find synergies and strengthen the activities carried out.

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 further 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 fully implementation of the GFCM Recommendation GFCM/42/2018/5 on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (geographical subareas 12 to 16), repealing Recommendations GFCM/39/2015/2 and GFCM/40/2016/4 and GFCM Recommendations GFCM/42/2018/3 and GFCM/42/2018/4 on multiannual management plans for sustainable fishing activities in the Ionian and in the Levant Sea for the Giant red shrimp and Blue and red shrimp.

More specifically the project will support:

- Socio-economic data collection (Tunisia);
  - Fisheries independent data collection;
  - Fisheries dependent data collection;
  - Monitoring of bycatch for bottom trawl fisheries;
  - Study Groups on stock assessment;
  - Working Group on the stock assessment of deep water red shrimp in the Central-Eastern Mediterranean jointly with EastMed;
  - Working Group on Demersal Elasmobranchs in the south-central Mediterranean Sea;
  - Technical discussion in support of fisheries management (*Merluccius merluccius*; *Parapenaeus longirostris*; Deep water red shrimps);
  - Joint activities on recreational and small scale fisheries;
  - Joint activities on invasive non indigenous species;
  - Joint activities on fishing technology and vulnerable marine ecosystems;
  - Working Group on Demersal Fisheries Resources.
- 
- Socio-economic data collection

The Project will continue to support the collection of fisheries related data. In 2016, as follow up of the discussion held during the 2015 MedSudMed Working Groups on Demersal Fisheries Resource (WG-DEM), the priority emerged to integrate socio-economic information into fisheries appraisal. Consequently, the Project initiated a programme for fisheries socio-economic data collection in Tunisia in 2016. The programme focused on commercial bottom trawl fleet segments targeting *Parapenaeus longirostris* and *Merluccius merluccius*. A second and third year of data collection was supported in 2017 and 2018. For the coming period the Project, together with the GFCM, the Direction General de la Pêche et de l'Aquaculture (DGPA) and with the Institut National Sciences et Technologies de la Mer (INSTM), will support: i) the completion of the fourth year of survey in a wider socio-economic data collection programme developed with the GFCM, concentrating on commercial bottom trawl fleet segments targeting European hake and deep water rose shrimp; ii) the processing of the collected data; and iii) the preparation of a report outlining the approach used and 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. The outputs of this activity will feed the GFCM-SAC WKMSE in view of Recommendation GFCM/42/2018/5. Overall, this activity will contribute to providing Tunisia administration with the tools for managing national capture fisheries and will support the country to comply with the GFCM recommendation on data collection (Recommendation GFCM/33/2009/3 and the GFCM DCRF requirements). The activities planned will also contribute to quantify the indicators set within the context of the United Nations Sustainable Development Goals (SDGs).

- Fisheries independent data collection

The discussion on possible implications of spatial based fisheries management strategies as foreseen in the Recommendation GFCM/42/2018/5, calls for accurate information on sensitive areas for target species. In this respect, geo-referenced fisheries independent data are generally considered the baseline for planning spatial based management. 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 (2011). In recent years, the area covered by scientific bottom trawl surveys in the south-central Mediterranean has been significantly reduced, hampering the possibility to complete the mapping of fisheries resources abundance and to provide updated fisheries independent data in support of fisheries assessment and management. The Project, in strict collaboration with GFCM will enhance the collection of standardised fisheries independent data either in terms of area coverage or frequency of sampling using R/V Hannibal of INSTM. Specifically the activities will aim at supporting the standardization of the bottom trawl surveys in GSA 12-14. The data gathered will be instrumental to identify critical areas like nurseries for *Parapenaeus longirostris* and *Merluccius merluccius*, in support of fisheries management in view the Recommendation GFCM/42/2018/5. The data will also contribute to define the spatial distribution of fisheries target species like Deep waters red shrimps (e.g. *Aristaeomorpha foliacea*)

- Fisheries dependent data collection

Following a request formulated during the 15<sup>th</sup> Project Coordination Committee on the standardization of methods for commercial catch monitoring, and stressed by the MedSudMed WG-DEM the Project will continue supporting the pilot programme initiated in 2018 for the collection of catch data (Biological Sampling) for bottom trawl fisheries exploiting *Parapenaeus longirostris* and *Merluccius merluccius* and *Mullus barbatus* in north Tunisia. The programme could include a capacity development component and field coordination missions. The data gathered will be instrumental to improve stock assessment exercises and the resulting scientific advice for fisheries management. The activities will see close collaboration with the GFCM in view of the work planned in the framework of the Mediterranean Mid-term strategy (2017-2020).

- Monitoring of bycatch for bottom trawl fisheries

Recently, in the Mediterranean, specific programmes have been established at national level to estimate the discarded fraction of the catch from commercial fisheries; some of them programmes involves the direct observation on board of fishing vessels. In the south-central Mediterranean, the coverage of such programmes is only partial and further effort will be necessary to cover the entire area. On this regard, as follow up of a request of its Coordination Committee, the Project supported a pilot action in 2016. Observers on board followed fishing operations twice per month from January to December 2016 in Tunisia. A second and third year of observer on board monitoring was supported in 2017 and 2018; overall results have been shared and discussed on occasion of the MedSudMed Working Group on Demersal Fisheries Resources for joint analysis, and results were presented to the GFCM-SAC Subregional Committee for the Central Mediterranean. In the coming period, MedSudMed will continue supporting and further expanding the observer on board programme for

commercial bottom trawl fisheries targeting European hake and deep water rose shrimp. The activity will be organized with INSTM in close cooperation with GFCM. In this view, following the request formulated during the WG-DEM, (Tunisia, May 2017,) and at the 16<sup>th</sup> Coordination Committee (Rome, February 2018) the possibility to establish pilot actions for the involvement of fishers in self sampling and self-reporting pilot programmes on bycatch will be explored. The monitoring will provide useful information and data on catch overall, bycatch, incidental and accidental catch of sensitive species and will provide support to Recommendation GFCM/42/2018/5 *on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (GSAs 12 to 16)*.

- Study Group on stock assessment

As for previous years, the Project will continue to support the organisation of the Study Groups for Stock Assessment (SG-SA). The work of the SG-SA will be instrumental to carry out preliminary stock assessment exercises for selected target species, i.e. *Parapenaeus longirostris*, *Merluccius merluccius*, *Mullus barbatus*. During the SG-SA, the Project will explore the possibility to use alternative methods for the assessment of *P longirostris* and *M. merluccius*, e.g. multi species GADGET, stock synthesis (SS3). The SG-SA will also be called to explore simulation options to evaluate likely consequences on fish stocks and fisheries of different management scenarios. The main target will be *P. longirostris* and *M. merluccius* stocks and related fisheries. All existing data will be used for the simulations, including socio-economic data and geo-referenced data from surveys at sea. The results of the SG-SA will be presented for discussion to the MedSudMed Working Group on Demersal Species. The outputs of this activity will feed the work of the GFCM Working Group on Stock Assessment of Demersal Species, and support to the GFCM-SAC Work Plan for 2018-2020.

- Working Group on the stock assessment of deep water red shrimp in the Central-Eastern Mediterranean jointly with EastMed

Deep water red shrimps *Aristaeomorpha foliacea* and *Aristeus antennatus* are among the most valuable shared fisheries resources in the central and eastern Mediterranean Sea. Their stock are exploited by several countries thus calling for joint studies and joint discussion on the management of their fisheries. In response, in 2018 a joint process has been initiated under the GFCM umbrella together with MedSudMed and EastMed toward a better understanding of the spatial distribution, abundance and overall stock status of these species. An ad hoc Joint data preparatory meeting was held in September 2018 involving experts from the central and eastern Mediterranean to explore existing knowledge and data on their biology, abundance and distribution, as well as on the fisheries exploiting them (effort, fishing grounds, fishing operations, total catch, market, etc.) (CC/17/Info 06). The results were presented to the GFCM Working Group for Stock Assessment on Demersals (WG-SAD). As follow up, MedSudMed in collaboration with EastMed and GFCM, will support the organization of a Working Group to progress in the data preparation and analysis for preliminary assessment the appraisal of stock status of *A. foliacea* in the Central-Eastern Mediterranean. The outputs

of this activity will feed the work of the GFCM Working Group on Stock Assessment of Demersal Species of 2019, and support to the GFCM-SAC Work Plan for 2018-2020.

- 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 national experts, the Project established the Working Group on Demersal Elasmobranchs (WG-DEL). In the coming period, the Project will continue supporting technical discussion and joint activities on demersal elasmobranchs through the WG-DEL. The WG-DEL will focus on: i) the survey data exploration for mapping spatial distribution of selected species; ii) the development of an ATLAS on demersal Elasmobranchs in the MedSudMed area; iii) *ad hoc* discussion on biological parameters as fecundity and growth; iv) the stock assessment for selected species. Discussion on discards, incidental catch and gear selectivity will also be tackled by the WG-DEL. The possibility to carry out the Working Group on demersal elasmobranchs back-to-back with the Working Group on Demersal Species or with the Study Group for Stock Assessment will be considered. Coordination with similar initiatives carried out by the other FAO Regional Projects and SAC-GFCM will be sought.

- Technical discussion in support of fisheries management

Multi-stakeholder technical meetings were initiated within the Project framework involving fishers, fisheries administrations and experts each year since 2012.

*European hake and Deep water rose shrimp*

On occasion of the 40<sup>th</sup> session of the GFCM (May-June 2016) the GFCM Recommendation GFCM/40/2016/4 was adopted establishing a multiannual plan for the fisheries exploiting European hake and deep-water rose shrimp in the Strait of Sicily (GSAs 12 to 16) repealed in 2018 by the Rec. GFCM/42/2018/5 *on a multiannual management plan for bottom trawl fisheries exploiting demersal stocks in the Strait of Sicily (GSAs 12 to 16)*.

MedSudMed, through the organisation of multi-stakeholder technical meetings, contributed to address technical issues relevant for the definition of shared fisheries management strategies. To keep its leading role in promoting technical discussion in support of fisheries management, the Project will continue to provide assistance to participating countries and SAC to cope with the Recommendation GFCM/42/2018/5 and promote multi-stakeholder discussion on this issue. This will also include discussion on Management Strategy Evaluations. In this view, MedSudMed foresees the organisation of a new meeting with the involvement of both scientific community, representatives of fisheries' associations, fisheries administrations of participating countries and non governmental organizations. The meeting will aim at ensure the involvement of all stakeholders in technical discussion on fisheries management according to the Ecosystem Approach to Fisheries. The meeting will also aim at preparing, in consultation with all stakeholders some potential scenarios and technical elements for the

configuration of a management strategy evaluation framework for *Merluccius merluccius* and *Parapenaeus longirostris* fishery. The outputs of the activities will contribute to the GFCM Working Group on Management Strategy Evaluation-WKMSE and to the Sub Regional Committee for Central Mediterranean (SRC-CM).

#### *Deep water red shrimps*

In 2018, a MedSudMed multi-stakeholders meeting focusing on Deep water red shrimps (DWRS) fisheries was held (Tunis, Tunisia, 27-28 March 2018, CC/17/Info 06). On that occasion, experts, representatives of national administrations and fishers from Italy, Tunisia, Libya and Malta tackled several aspects related to the dynamic and recent evolution of DWRS fisheries in recent years. The discussion held was the opportunity for all the stakeholders to share views on possible options to ensure the sustainability and the profitability of DWRS fisheries. The outputs of the meeting fed the discussions held through the year on occasion of several GFCM meetings (SRC-CM, 20<sup>th</sup> SAC, Joint data preparatory meeting, 42<sup>nd</sup> GFCM Plenary session, WG-SAD). To further contribute to the technical discussion on this issue, one session of the next multi-stakeholders meeting will be devoted to DWRS and related fisheries. The outputs of the activities will contribute to the, Sub Regional Committees for the Central and Western Mediterranean (SRC-CM and SRC-WM) and to GFCM-SAC Work Plan for 2018-2020, and support the implementation of *GFCM Recommendations GFCM/42/2018/3 and GFCM/42/2018/4 on a multiannual management plans for sustainable fishing activities in the Ionian and in the Levant Sea for the Giant red shrimp and Blue and red shrimp*.

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 the south-central Mediterranean Sea. In this view, cooperation will be sought with the FAO CopeMed II Project for actions currently planned in Tunisia.

- Joint activities on small scale and recreational fisheries

In 2014, following a recommendation of the MedSudMed Coordination Committee and in view of contributing to discussion at Mediterranean level, the Project initiated a first joint study for the characterisation of three areas in which small scale fisheries (SSF) are the main fishing activities and are subject to specific regulations: Kerkhenna islands (Tunisia), Egadi Islands (Italy) and Maltese islands. The results of the study were presented at the GFCM Regional Conference on “*Building a future for sustainable small-scale fisheries in the Mediterranean and the Black Sea*” (Algeria, March 2015) and a technical paper describing the outputs of the joint study was included in the proceeding of the Regional Conference. Since then discussion on SSF continued in the Project framework during the works of the WG-DEM. In 2017 some case studies were defined to map the spatial distribution and overall activities of selected fishing gears for SSF at national level. In the coming period, the Project will support: i) the finalisation of the case studies in terms of data collection; ii) the joint analysis of the data; iii) the preparation of a document outlining the approach adopted and overall results achieved; and iv) the presentation of the results on occasion of the GFCM Working Group on Small Scale Fishery (WGSFF). The planned activities will be finalized in

a dedicated session of the MedSudMed WG on Demersal Resources. The outputs of the activities will support the GFCM-SAC Work Plan for 2018-2020 to compile information on the characterization of small-scale fisheries according to the GFCM mid-term strategy (2017-2020).

Regarding recreational fisheries (RF), further to the pilot case studies identified to test the proposed GFCM/SAC methodology for the assessment of Recreational Fisheries (RFs), and based on the discussion held on occasion of the last WG-DEM, the Project will support the identification and implementation of selected pilot case studies in the Project area. The activity will be carried out in close coordination with the GFCM Secretariat.

- Joint activities on invasive non indigenous species

The occurrence in the south-central Mediterranean of a number of non-indigenous species (NIS) that are quickly spreading interacting with native marine species and affecting fisheries, was put forward as an issue to be addressed at the 15<sup>th</sup> Project Coordination Committee (Tunisia, 2017). On that occasion, the Project was requested to tackle the issue of NIS. As follow up, case studies to reconstruct the historical expansion dynamics of invasive non indigenous species in the entire Project area were supported in 2017. The preliminary outputs of the case studies were discussed during the WG-DEM (2017 and 2018). In the coming period, the Project will support: i) the finalisation of the case studies in terms of data collection; ii) the standardisation, digitalisation and merging of spatial based data; iii) the preparation of one or more documents outlining the approach adopted and overall results achieved; iv) the planning, on a pilot scale, of a periodic monitoring of NIS dynamic; and v) further actions toward the characterisation of the main bio-ecological features (e.g. trophic level and interactions, potential mitigation strategies) of invasive species in the Project area. In this view, advantage will be taken from experiences already accrued or ongoing at Mediterranean level. The results of the case studies will be the baseline for planning future monitoring programme and for identifying potential options to reduce the negative impact of invasive species. The activities will also support the GFCM SAC Work Plan for 2018-2020 in the implementation of a NIS pilot monitoring network in Mediterranean and to progress in the identification of potential management measures for those NIS that become a target fishery.

- Joint activities on fishing technology and vulnerable marine ecosystems

Great attention has been devoted in recent years to the implication of fishing activities on a wider scale. The impact of fishing gears on fisheries non target species, as well as on the marine environment has also been studied. In the Mediterranean Sea discussion on vulnerable marine ecosystems (VME) and essential fish habitat (EFH), as well as on incidental catch on endangered species was promoted, in view of assessing and reducing as much as possible unwanted impact of fisheries. In the south-central Mediterranean, MedSudMed promoted studies at national and sub-regional level on fishing gear selectivity in view of assessing and, ultimately, enhancing the exploitation pattern of fisheries target specie and reducing the catch of non target species. In the framework of the MedSudMed Working Group on Demersals, discussion was initiated on the mapping of benthic communities in the Project area based on survey data. The Project took advantage also of studies conducted at national level under the



framework of European Union funded Projects like e.g. Minow, Mantis, with which MedSudMed is collaborating. The work of the Project has been introduced and fed the discussion at the newly established GFCM Working Group on Fishing Technology (WG-FiT) and the GFCM Working Group on Vulnerable Marine Ecosystems (WGVME). In the coming period the Project will continue to promote discussion on the spatial mapping of benthic communities and will finalise the studies carried out of fishing gear selectivity. The possibility to tackle these issues on occasion of, or back to back with the MedSudMed WG-DEM will be explored. The activities will contribute to the discussion on occasion of the next meeting of the GFCM WG VME and WG FiT.

- 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 two sessions. During the meetings attention will be paid to:

- Review the work done during the MedSudMed SG-SA and finalise the appraisal of the stock status of selected demersal species *Parapenaeus longirostris*, *Merluccius merluccius*, *Mullus barbatus* and move forward in the stock assessment of new species;
- continuing discussion on the integration of socio-economic data in the appraisal of fisheries status for management strategies evaluation and bio-economic modelling;
- the harmonisation of fisheries management in the south-central Mediterranean Sea;
- explore options for the involvement, on a pilot scale, of fishers for self-sampling and self-reporting;
- finalise the case studies initiated on small scale fisheries and invasive non indigenous species;
- explore data availability and options to take advantage of existing geo-referenced fisheries dependent and fisheries independent data (VMS, AIS, observers on board, surveys at sea) for mapping fishing activities and critical areas for fisheries resources;
- Progress toward the use of geo-referenced data on benthic species for biocoenoses mapping;
- a specific session will be devoted to the discussion on fishing technology to explore possible application of grids and other devices in order avoid the capture of undersized specimen of Deep water Rose Shrimp *Parapenaeus longirostris* and Hake *Merluccius merluccius*.
- Information in the sub-region for the preparation of a catalogue of fishing gears in collaboration with GFCM will be collated.
- Identify priorities and plan future common joint research activities.

## **b) Small pelagic fisheries resources**

The MedSudMed work plan comprises a series of activities to promote technical discussion in support of small pelagic fisheries. In particular, the Project will support and/or organize:

- Joint surveys at sea;
- Inter-calibration of fish age determination through otoliths reading;
- Joint use of acoustic and bottom trawl survey data for biomass and spatial distribution studies;
- *Ad hoc* activities on selected species (*Coryphaena hippurus*);
- Study Group on the joint processing of acoustic and ichthyoplankton data;
- Progress toward stock assessment of *Engraulis encrasicolus* and *Sardina pilchardus*;
- Discussion toward the joint assessment of *S. pilchardus* in GSA 04 East and GSA 12;
- Working Group on small pelagic fisheries resources.

- Joint surveys at sea

The Project will continue to pursue the standardization of data collection and processing and to provide technical assistance for the expansion of the surveys at sea coverage in the south-central Mediterranean Sea. Discussion will be held in the framework of the MedSudMed Working Group and/or Study Group on Small Pelagics. This activity will contribute to the Mediterranean mid-term strategy (2017-2020). In this respect, close cooperation is in place with the GFCM Secretariat to optimise effort and resources.

- Inter-calibration of fish age determination through otoliths reading

The Project will continue to support the standardisation of methods for fisheries and fish biology related studies. In particular, given the importance to provide information on growth and population age structure for selected target species for stock assessment, the Project is promoting a multi-step programme to standardise small pelagic fish age determination through otoliths reading. The programme, tuned on occasion of the Working Group on Small Pelagic Fisheries Resources in 2019 (WG-SP, CC/17/Info 09), focus on *Trachurus trachurus* and include: a capacity development component, the definition of common criteria of otolith structure interpretation and age class determination, a standardisation exercises and the exchange of otoliths for reading comparison. The outputs of the activities will feed the work of the GFCM Working Group on Stock Assessment, and support to the GFCM-SAC Work Plan for 2018-2020.

- Joint use of acoustic and bottom trawl survey data for biomass and spatial distribution studies

The Project defined a medium-long term work plan to address some knowledge gaps on *T. trachurus* that are hampering the possibility to finalize a stock assessment on this species. In the coming period, MedSudMed will continue to support the joint survey data analysis. The discussion will be carried out on occasion of the *Study Group for the joint processing of survey data* and of the *MedSudMed Working Groups on Small Pelagic and Demersal Fisheries Resources*.

- 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). Two technical workshops were carried out in March and September 2016 in collaboration with CopeMed II. The workshops resulted in an update of the available knowledge and activities carried out on *C. hippurus* and related fisheries and in a preliminary appraisal of *C. hippurus* stock status. On that occasion, the plan to develop a multi-disciplinary review document summarising existing knowledge on *C. hippurus* and related fisheries in the Mediterranean Sea was agreed on. In the coming period, the Project will continue, in collaboration with CopeMed II, to support discussion on and appraisal of *C. hippurus* stock and fisheries and the development of the review document. The outputs of the activity will feed the work of the GFCM Working Groups on Stock Assessment.

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

A large amount of acoustic and ichthyoplankton data has been collected in the Project area in the last 20 years. The standardisation and joint processing of these data was initially carried out in the framework of the MedSudMed Working Group on Small Pelagic Fisheries Resources (WG-SP). In 2014, to properly address this task, the WG SP agreed to avail of the support of a specific study group and established the *Study Group for the joint processing of acoustic and ichthyoplankton data* (SG-JDP). Since 2014, one session of the SG-JDP was organised annually and the results contributed to the publication of several scientific papers and technical documents. In 2019 the Project will organise a further meeting of the SG-JDP to: i) advance in the use of eggs and larvae data to define spawning areas of selected species and connectivity among them (e.g. *E. encrasicolus* and *S. pilchardus*); ii) to explore, standardise and joint process the 2018 acoustic data for the estimation of small pelagic fish biomass and for the characterisation of small pelagic fish assemblages; and iii) integrate information from acoustic and bottom trawl surveys to describe abundance and distribution of selected species. The SG-JDP will be tentatively organized in the second half of 2019. 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.

- Working Group on small pelagic fisheries resources

The MedSudMed Working Group on Small Pelagic Fishery Resources (WG-SP) will be organised in 2019. According to the conclusions of the previous meetings, the possibility to organise two sessions of the WG-SP will be explored. 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 toward the identification of spawning grounds and connectivity among them for *E. encrasicolus* and *Sardinella aurita*;
- Explore options to integrate in a single comprehensive study the information on eggs, larvae, juveniles and adults of *E. encrasicolus*, *Sardina pilchardus* and *Sardinella aurita*;
- Progress in the standardisation of age reading for *Trachurus trachurus*;
- Continue the joint discussion on multi-disciplinary studies on *Trachurus trachurus* (mapping spatial distribution, biological parameters estimation, preliminary stock assessment);
- Support joint discussion toward the estimation of biological parameters for *E. encrasicolus*, *Sardina pilchardus* and *Sardinella aurita*;
- Promote discussion and analysis of data towards the assessment of *E. encrasicolus*, *Sardina pilchardus*;
- Definition of priorities to be addressed to progress in the monitoring and appraisal of the state of small pelagic fish and fisheries
- Support the preparation of joint technical and scientific documents.

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;
- On-the-job training to digitalise geo-referenced data gathered through interviews with fishers;

- Training on the use of satellite data in fisheries research.

In addition, the FAO Fisheries and Aquaculture Department, in close cooperation with the FAO Mediterranean Projects (AdriaMed, EastMed, CopeMed II and MedSudMed), the GFCM and the European Commission Joint Research Center (JRC) will organise the third edition of the “Summer School in quantitative fisheries stock assessment” (Summer school). The summer school is planned to run every year for two weeks during the summer months. The Summer school will run in second and third week of July 2019 at CNR premises of Capo Granitola, Sicily (Italy).

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 communication system**

The Project, to enhance its visibility in the area, as well as to improve the Donors visibility will implement a series of activities which include:

- Update of the MedSudMed web site;
- Preparation of communication material;
- Preparation of short videos illustrating specific aspects of the work of the Project in the countries;
- Enhancing the presence on social media (e.g. Twitter).
- The publication of MedSudMed Technical Documents.

#### **e) Regional cooperation**

##### **--Strengthening the cooperation with the GFCM**

In line with previous decisions of the Coordination Committee, with the recommendations that emerged from the Independent Evaluation carried out in 2012, and with the recently approved GFCM Mid-term Strategy 2017-2020, the Project will continue to strengthen international and regional cooperation at Mediterranean level with the GFCM and its subsidiary bodies (SAC, SAC Working Groups, and SAC Sub-regional Committees). This will consist in 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 the proposed work plan for the SAC Sub Regional Committee for the Central Mediterranean (SRC-CM).

## **-- 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 AdriaMed will continue, as well as collaboration with CopeMed II and EastMed. In this context, synergies are foreseen with the other regional Projects, also taking into consideration the indications provided during the FAO FIAF internal coordination meeting (Rome, December 2018). Areas of cooperation have been indicated mainly for surveys at sea, socio-economic aspects of fisheries and training.

Training activities will be coordinated among all the Projects, to avoid duplication or overlapping. The participation of other Mediterranean Project experts in training courses organized by MedSudMed will be foreseen and vice-versa. The “Summer School in quantitative fisheries stock assessment” (reported in this document under the session “Trainings”) is an example.

In 2016 a work plan was agreed upon by experts from Tunisia and Algeria, with the aim of advancing toward the joint assessment of shared resources like *Sardina pilchardus* and *Merluccius merluccius*. To this extent a capacity development component and data collection was initiated in Algeria with the technical assistance of experts from Tunisia and the support of CopeMed II and MedSudMed. In the coming period, MedSudMed, in cooperation with CopeMed II, will organise a preparatory meeting toward the stock assessment of *S. pilchardus* and *M. merluccius* in GSA 4-12. This activity could be tackled in the framework of the MedSudMed Working Groups. The overall achievements will be presented in and contribute to the discussion of the GFCM Working Groups on Stock Assessment.

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 optimizing the use of human and financial resources.

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