A PARTICIPATIVE APPROACH: THE STAKEHOLDERS FEEDBACK

Introduction

A workshop on the implementation of MSY in four case studies (demersals and small pelagics of GSA6 and 7, GSA9 and 11, GSA17 and 18, GSA29) was held in Bari on September 21-25, 2015. The main items in the workshop agenda were: a) explore the different management possibilities to achieve MSY based on single-species, multiple-species, or stratified fleet stratus; b) translate reduction of fishing mortality into effort reduction; c) explore how technical measures (gear specifications, spatial and/or temporal restrictions) could modify the fisheries exploitation pattern; d) run the simulations, discuss the results, evaluate the biological and socio-economic implications. In addition to the researchers involved in the project, actively attended the workshop Mrs Rosa Caggiano and Mrs Erika Monnati from the MEDAC Secretariat, and Mr Xavier Vazquez Alvarez from DG MARE. Their participation allowed to begin an open dialogue with stakeholders and get feedbacks on the scenarios to be tested in the simulations process. Furthermore, it was agreed the venue, the date and the agenda of the final workshop with stakeholders.

The agreed scenarios to be tested with a bio-economic model were: 1) status quo projected to 2020; 2) linear reduction towards upper F_{msy} of the most heavily exploited species in 2018, applied on both activity and capacity; 3) linear reduction towards a weighted average F_{msy} of a mix of species in 2018, applied on both activity and capacity; 4) adaptive reduction towards upper F_{msy} of the most heavily exploited species in 2020, applied on both activity and capacity; 5) adaptive reduction towards a weighted average F_{msy} of a mix of species in 2020, applied on both activity and capacity; 6) improving selectivity accounting for the survivability issue (in case of gear selectivity).

The final workshop with stakeholders was held in Malta on November 10, 2015, back to back with the MEDAC Executive Committee meeting. The main items in the agenda were: a) criteria, trajectories and MSY approach for the preparation of multiannual management plans in the Mediterranean; b) management scenarios for the preparation of multi-annual management plans of demersal and pelagic stocks in selected GSAs (case study presentations); c) general discussion.

34 people attended the workshop on behalf of: 1) Federación Española de Empresarios del Mar; 2) Asociación de Empresarios Marítimos y Pesqueros; 3) Federacion National de Cofradias de Pescadores; 4) Federacio Nacional Catalana De Confraries De Pescadors; 5) General Direction of Fishing and Maritime Affairs of the Catalan Government; 6) Ministerio de Agricultura, Alimentación y Medio Ambiente; 7) Le Comité national des pêches maritimes et des élevages marins; 8) Direction des Pêches Maritimes et de l'Aquaculture; 9) Ghaqda Koperattiva Tas Sajd, Malta; 10) Department of fishery and aquaculture Malta; 11) Alleanza Cooperative Italiane; 12) European Transport Workers Federation; 13) World Wide Fund for Nature; 14) Lega Ambiente; 15) Project Research Institutes 16) MEDAC; 17) EASME.

The President of MEDAC, Mr Giampaolo Buonfiglio, underlined that long term management plans are currently not being developed and noticed that no plan was adopted within the framework of the new Common Fisheries Policy. Therefore, Mediterranean management plans currently in force remain those based on EU Regulation 2006/1967. He expressed the belief that a lot of work should be done to focus on management scenarios.

From the stakeholder point of view, the spatial management is getting more and more importance for the preparation of multiannual management plans. Therefore, the reduction of the fishing effort should be mainly based on the management of sensitive habitat, such as nursery or spawning grounds, through the definition of control policies and criteria for the rotation or temporal closure of such sensitive areas.

The project coordinator, Mrs Maria Teresa Spedicato, introduced the participants to the main objectives of the project MARE/2014/27. It is a 8 months project focusing on 3 tasks : a) characterize stocks, fisheries and current management measures; b) exploring different management options to achieve MSY by 2018 and 2020; c) communicate results, engage stakeholders. The case studies are : turbot fishery in GSA 29, demersal and pelagic fisheries in GSAs 17-18, demersal and pelagic fisheries in GSAs 8-9-11, and demersal and pelagic fisheries in GSAs 6-7.

The first step of the project (state of the art) consisted in the identification of stocks, fishing areas, and current management measures in place. The selected management scenarios are built taking into account the relative impact of the different fleet segments and the multi-specific dimension of Mediterranean fisheries. For each case study, two approaches were explored: a linear reduction and an adaptive reduction (which implies a lower reduction in the short term and a sharp reduction thereinafter, or vice-versa, case by case) towards F_{MSY}, either in 2018 or 2020. The amount of reduction was established on the basis of the results from the assessments endorsed by STCEF or GFCM and the related diagnosis, except in case of selectivity scenarios. One scenario is based on the F_{MSY} range (F_{MSY} upper and lower values) of the most heavily exploited species. F_{upper} should be used in association with a Management Strategy Evaluation (MSE) to test if the upper levels of the range is precautionary (i.e. the risk that SSB falling below B_{lim} is less than 5%). An alternative scenario, instead of using the F_{MSY} range, is based on a weighted average F_{msy} derived from a mix of species (weighted using landings values or quantities). Both the above mentioned scenarios account, to some extent, for mixed fishery considerations. It is worth to highlight that in the second scenario the F_{MSY} of the most heavily exploited species will not be reached in 2020 but, in return, will be avoided waste of productivity for the less exploited species. The conversion of fishing mortality into effort reduction can be applied both on capacity (i.e. number of vessels) and activity (number of fishing days). Scenarios of reduction of activity or capacity are designed taking into account social considerations (feedback from the sector) or management decisions in force. A specific scenario was considered for the selectivity, which consists in delaying the size at first catch (called "improving selectivity"). This objective could be achieved by improving the gear selectivity or by applying spatial measures to protect juveniles, such as rotation or temporal closure of sensitive areas (e.g. nursery areas). For each case study uncertainty margins have been included and all scenario is compared with the *status quo*. Among the objectives of the workshop there is also to solicit stakeholders to express comments and reflections on the project results and governance issues.

Discussion

Questions. A representative of the European Transport Workers Federation asked if socio-economic data have been updated and what the sources are. A representative of the Maltese Administration asked whether it is possible to make comparison between values of MSY.

Answers. All the data, not only the economic data, are collected year by year (Data Collection Framework) according to the Reg.(UE) N. 1380/2013. Comparison can be carried out among scenarios based on F_{MSY} upper on the most heavily exploited species and scenarios based on the F_{msy} derived from a mix of species. Results are also expressed in relation to the different fleet segments.

Case study GSA 17-18 Small pelagics

Selected species (2): Anchovy, Sardine.

Selected fleets (10):GSA17 pelagic trawlers 12/18 m-18/24 m-24/40 m, purse seine 24/40 m, GSA18 pelagic trawlers 24/40 m, purse seine 24/40 m (Italy); GSA17 pelagic trawlers 12/18 m-18/24 m-24/40 m (Croatia); GSA17 pelagic trawlers 12/18 m (Slovenia).

Scenario results: According to a MCDA, the scenarios allowing to reach the highest overall utility are scenarios 4 (linear reduction towards E0.4 of anchovy in 2018) and 5 (adaptive reduction towards E0.4 of anchovy in 2020), while the lowest utility is given by Scenario1 (status quo).

Case study GSA 17 demersal

Selected species (4): Hake, Spottail mantis shrimp, Red mullet, Common sole.

Selected fleets (11): trawlers 6/12m-12/18m-18/24m, beam trawlers 12/18m-18/24m, polyvalent passive gears 06/12m (Italy); Drift/fixed netters 06/12m, trawlers 06/12m-12/18m-18/24m (Croatia); Drift/fixed netters 06/12m, trawlers 12/18m (Slovenia).

Scenario results: According to a Multi-Criteria Decision Analysis approach (MCDA), the scenarios that allows to reach the highest overall utility are scenarios 3 (linear reduction towards a weighted average F_{MSY} for a

mix of species, in 2018) and 2 (linear reduction towards upper F_{MSY} of the most heavily exploited species, in 2018), with utility respectively of 0.60 and 0.58. While the lowest utility is given by Scenario 1 (status quo).

Case study GSA 18 demersal

Selected species (4): Hake, Deep-water rose shrimp, Norway lobster, Red mullet.

Selected fleets (10): trawlers 6/12m-12/18m-18/40m, long-liners 12/18m, small scale <12m (Italy); trawlers 12/24m (Albania); trawlers 6/12m-12/24m, long-liners <12m, small scale <12m (Montenegro).

Scenario results: On an overall basis, the best performing scenarios are n° 2 (linear reduction towards upper F_{MSY} of the most heavily exploited species, in 2018) and 3 (linear reduction towards a weighted average F_{MSY} for a mix of species, in 2018). The best results in terms of catches is produced by scenario n° 6 (improving selectivity) although it does not ensure reaching F_{msy}. Strictly enforcing F_{msy} based on the most overexploited species would lead to underutilization of the remaining stocks.

Case study GSA 9 demersal

Selected species (4): Hake, Deep-water rose shrimp, Norway lobster, Red mullet.

Selected demersal fleets (5): trawlers 12/18m-18/24m-24/40m, polyvalent passive gears 00/12m-12/40m (Italy).

Scenario results: According to a MCDA, the scenarios allowing to reach the highest overall utility are scenarios n° 2 (linear reduction towards upper F_{MSY} of the most heavily exploited species, in 2018) and 4 (adaptive reduction towards upper F_{MSY} of the most heavily exploited species, in 2020). The best results in terms of catches is produced by scenario n° 6 (improving selectivity) although it does not ensure reaching F_{msy}. Strictly enforcing F_{msy} based on the most overexploited species would lead to underutilization of the remaining stocks.

Case study GSA 9 Small pelagics

Selected species (2): Anchovy, Sardine.

Selected demersal fleets (3): purse seiners 12/18m-18/24m-24/40m (Italy);.

Scenario results: the two scenario tested based on a linear and an adaptive reduction towards the reference point of sardine gave the same results in terms of utility. SSB of both stocks, anchovy and sardine, improved, while catches were decreasing by a low percentage (around 1-3%), with a limited socio-economic impact.

Case study GSA 11 demersal

Selected species (3): Hake, Giant red shrimp, Red mullet.

Selected demersal fleets (5): trawlers 12/18m-18/24m-24/40m, polyvalent passive gears 00/12m-12/18m (Italy).

Scenario results: the scenarios 2 and 4, based on Fupper of hake, allow to reach a higher overall utility, with value respectively of 0.42 and 0.39; these are followed by scenario 3 based on the target of Fmsy combined to 2018 (0.34), while the lowest utility is reached by the status quo (0.22).

Case study GSA 6 demersal

Selected species (5): Hake, Deep-water rose shrimp, Blue and red shrimp, Red mullet, Blue whiting.

Selected fleets (7): trawlers 12/18 m-18/24 m-24/48 m, long-liners 6/12 m-12/18 m, gillnetters 6/12 m 12/18 m (Spain).

Scenario results: The best performing scenario is n°6 (improving selectivity), although it does not ensure reaching F_{msy}. Strictly enforcing F_{msy} based on the most overexploited species (hake) would lead to underutilization of the remaining stocks.

Case study GSA 7 demersal

Selected species (2): Hake, Red mullet.

Selected fleets (9): trawlers 12/18 m-18/24 m-24/40 m (France); trawlers 12/18 m-18/24 m (Spain), long-liners 12/18 m (Spain); gillnetters 0/6 m-6/12 m-12/18 m (France).

Scenario results: Scenario 6 (improving selectivity) does not allow reaching Fmsy for any of the 2 target species, but the results show a significant increase in spawning stock biomass of both species and keeping landings at high levels.

Discussion

Questions. The Coordinator of MEDAC Working Group on Discards expressed concerns about the consequences for the fishing sector due to the amount of reduction of fishing effort for pelagic trawlers to reach MSY.

The representative of WWF underlined the importance of including spatial considerations in the analysis and asked further specifications about how have been set into the scenarios spatial management measures. In addition she asked whether there are studies on the impact of fishing into nursery areas, because it would be easier to propose management measure knowing the effects and the impact of each measure.

The representative of the Federacio Nacional Catalana De Confraries De Pescadors expressed concerns about the methods to assess the stocking status of small pelagics. Starting from the case of sardine in Catalogna, he argues that the stock status cannot be explained through the level of fishing mortality. Indeed, landings have dropped and sexual maturity size has decreased in spite of the reduction of the fishing effort. Environmental factors, such as temperature increase or pollution could explain this evolution.

The representative of European Transport Workers Federation asked how were decided the timelines for the scenarios and if it is possible to project further forward scenarios.

Answers. At least one scenario based on changes of selectivity has been analysed in each case study. Selectivity improvements could be achieved through spatial management measures (limiting or prohibiting access to zones where juveniles are concentrated) or changing/modifying fishing gears (e.g. increasing mesh size). Specially for demersal species there is a good knowledge on nursery areas (cfr. MAREA-MEDISEH project), which can be a good starting point for further investigate spatial management measures. Also extending the ban on trawling over the isobath of 50 m, in some period of the year, would allow to protect the recruitment of some species (e.g. red mullet). Scenarios where selectivity measures are intermixed with reduction of the fishing effort could achieve MSY in a less traumatic way for fishermen.

Environmental factors, such as temperature increase or pollution, may influence recruitment and/or mortality, particularly in respect of small pelagic. But this influence can play in both senses (positively and negatively), that is why buffers should be set in order to limit the risk on resources. Also because the only manageable factor is fishing mortality and not the climatic events.

The timeline is actually set by the Reg.(UE) N. 1380/2013. All scenarios have been designed to achieve MSY in 2018 or 2020. The bio-economic model used (i.e. BEMTOOL) allows to project further forward scenarios, but this would increase the uncertainty on the results. Mainly because we are working without stock recruitment relationships (reliable SRR would require much longer time series of data). A further element of unpredictability is given by the fact that all simulations are based on a strict compliance of all the management measures in place (e.g. mesh size, closed areas). Obviously the robustness of the results is directly linked to the level of compliance.

Conclusion

The President of MEDAC, Mr Giampaolo Buonfiglio, underlined the utility of the work done for the MEDAC. He highlighted the importance of considering the project results as an input for the internal work of the AC. Indeed, the worst scenario for the AC would be if the European Commission would consider such project results like unilateral emergency measures to be taken. In such case, the AC would have lost the opportunity to negotiate the long term management plans. Taking into account the socio-economic impacts of a drastic reduction of the fishing effort (or fishing capacity), he believe that it should be further explored how to achieve MSY by intermix spatial-temporal measures with a less drastic reduction of fishing

effort. Moreover, scenarios based on a weighted average F_{msy} derived from a mix of species, instead of using the FMSY range of the most heavily exploited species, are considered a really appropriate alternative. He hopes that this view could be of interest for the European Commission and the Member States. On the other hands, it is duty of MEDAC to advice the Commission on which measures could be more welcomed than others by the fishing sector.

The project coordinator, Mrs Maria Teresa Spedicato, concluded the workshop by saying that these project results can be considered as a starting point for future analyses and, to this purpose, the workshop has been an excellent opportunity to compare and exchange different points of view and feedback on critical issues.