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Commission générale des pêches pour la Méditerranée

Working Group on the Black Sea (WGBS)

Eighth meeting of the WGBS

Trabzon, Turkey, 18–20 September 2019

Report[1]

EXECUTIVE SUMMARY

The eighth meeting of the Working Group of the Black Sea (WGBS) took place from 18 to 20 September 2019 in Trabzon, Turkey. The meeting reviewed the work carried out during the 2018–2019 intersession in relation to stock assessment, management of selected fisheries, data collection, small-scale fisheries as well as work on the interactions between fisheries and the ecosystem. It also debated on capacity-building activities within the framework of the BlackSea4Fish project and on the outcomes of the second project steering committee meeting.

The WGBS formulated advice on: i) the implementation of the BlackSea4Fish project, ii) data collection and quality indicators, iii) the implementation of the Regional plan of action for small-scale fisheries, iv) the future approach for the provision of advice, v) the status of Black Sea stocks, with all main commercial stocks assessed being in overexploitation, uncertain, depleted or fluctuating around MSY; and vi) the management of priority species. In addition, the WGBS proposed criteria for the allocation of turbot TAC and quotas to CPCs , as required by Recommendation GFCM 41/2017/4, and carried out a management scenario based on the criteria agreed, formulating advice in this regard. Finally, the WGBS agreed upon its work plan for 2019–2021 in support of mid-term strategy activities that would be coordinated, among others, through the BlackSea4Fish project and according to the outcomes of its second steering committee. The WGBS proposed a new bureau.

OPENING, ARRANGEMENTS OF THE MEETING AND ADOPTION OF THE AGENDA

1. The eighth meeting of the Working Group on the Black Sea (WGBS) was held from 18 to 20 September 2019 in Trabzon, Turkey. The meeting was attended by 28 experts from all Black Sea riparian countries as well as the European Union (EU), the Agreement for the Conservation of Cetaceans in the Mediterranean, Black Sea and contiguous Atlantic area (ACCOBAMS) and the GFCM Secretariat. The full list of experts is provided in Appendix 2 of this report.

2. Mr Simion Nicolaev, WGBS coordinator, opened the meeting and thanked the hosting country for the hospitality. He recalled the evolution of WGBS and expressed his appreciation for the continued involvement and support of riparian countries in its activities. He mentioned, in particular, the considerable boost provided by the operationalization of the BlackSea4Fish Project and the establishment of the GFCM Black Sea Unit (BSU) in Burgas, Bulgaria. He wished for a fruitful meeting in addressing the most salient issues for the sustainability of Black Sea fisheries

3. Mr Ercan Kucuk, Director of the Central Fisheries Research Institute of Trabzon, welcomed participants to Turkey. He underlined the importance of WGBS for Turkey and the countries of the Black Sea basin, as well as the extent of the technical work during the intersession. He highlighted how recent progress, spearheaded by the BlackSea4Fish Project, allowed to advance on multiple crucial issues. He also underlined how Turkey was deploying considerable efforts in the area, by actively

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participating in these activities as well as by contributing directly to the implementation of landmark initiatives such as scientific surveys-at-sea. He hoped the meeting would take stock of such progresses and devise bold actions for its work plan, including through BlackSea4Fish.

4. The GFCM Executive Secretary also welcomed the audience, expressing his satisfaction for the considerable strides of the young BlackSea4Fish Project and the long-awaited operationalization of the BSU, stating that all efforts would keep on being deployed to enable the WGBS with instruments and means to effectively fulfill its workplan and objectives. He looked forward to gathering the feedback of experts on the advances during the intersession and the priorities for the next period.

5. After the introduction of delegates and observers, the GFCM Secretariat informed the meeting of organizational arrangements. The agenda was adopted, as attached under Appendix 1. The list of documents is reproduced in Appendix 3 and the opening speeches are included in Appendix 4.

REPORT OF INTERSESSIONAL ACTIVITIES, INCLUDING IN THE CONTEXT OF THE BLACKSEA4FISH PROJECT

6. The WGBS coordinator presented an overview of the GFCM intersessional activities of relevance to the Black Sea on the basis of the priorities identified by the WGBS and of the work plan adopted by the Commission at its forty-second session. He mentioned activities carried out at the GFCM level in both the Black Sea and Mediterranean basins, such as: issues related to data collection and quality indicators; the implementation of regional surveys-at-sea; the implementation of surveys on socio-economic characteristics of fisheries; issues related to small-scale fisheries; issues related to the marine environment and ecosystems; work done on anthropogenic underwater noise; progress made in the implementation of the bycatch monitoring and discards monitoring programmes; and the launch of case studies for the assessment of vulnerability of fisheries to climate change. He then moved onto the specific activities carried out in the Black Sea, recalling the work of the Subregional Group on Stock Assessment for the Black Sea (SGSABS) and the support provided by the BlackSea4Fish project for data preparation and the participation of Black Sea scientists in relevant meetings and activities as well as for the organization of capacity-building activities, namely trainings and participation of scientists onboard scientific vessels.

7. The WGBS was informed that the second meeting of the BlackSea4Fish Project Steering Committee had taken place the day before and had reviewed advances in technical activities directly organized and/or supported by the project. The leap ahead in the quality of the preparatory work done in support of the provision of advice on priority species, covering a range of activities including data preparation and training in support of benchmark assessments, was acknowledged and the work of the Coordinator and the other resources allocated to the project was highly appreciated.

NATIONAL REPORTS TO THE WGBS

8. The GFCM Secretariat presented, on the basis of document GFCM:WGBS8/2019/Inf.5, a synthesis of the information contained in four national reports sent by Bulgaria, Romania, Ukraine and Turkey, recalling that these covered fleet size, landings, national stock assessments and research projects, spatial management measures, data collection and incidental catches of vulnerable species. The information reported showed that fleet size had remained stable in Romania and Ukraine and slightly diminished in Bulgaria and Turkey and that landings had remained constant in Bulgaria, increased in Ukraine and Turkey, while they had decreased in Romania. The other sections of the national reports included little to no new information or data that could help provide a snapshot of the current situation in the different countries. The summary sheets of the national reports submitted are available in Appendix 10.

9. The limited quantity, quality and accuracy of the data provided through the national reports, as well as the inconsistency observed across reports submitted in the different years, was earmarked as an issue hindering the utility and appropriate use of the information. The relevance of obtaining regional and national overviews of the most salient aspects related to fisheries was reiterated. The importance of interacting with CPCs to solve quality issues was highlighted, as was the provision of technical

assistance and training to riparian countries that required so, and it was suggested that the Secretariat sends a letter to the relevant authority in the country (copying the European Commission in the case of the EU Member States) every time national reports are incomplete or if the submission requires clarifications.

10. In particular for vulnerable species, it was recalled that it was essential to report information on incidental catches, especially considering that bycatch of marine mammals, in particular harbour porpoises (*Phocoena phocoena*), was an issue in the Black Sea. The countries involved in the discards monitoring programme of the GFCM – which all stated they were implementing the programme in line with the standard methodologies developed by the GFCM – were reiterated to collect information on incidental catch of vulnerable species and share it accordingly in the context of the mid-term strategy. For those not implementing monitoring programmes, it was underlined that the BlackSea4Fish Project could facilitate the development of related activities and that bycatch estimates could in any case be compiled from other sources.

11. The WGBS encouraged countries to submit complete and up-to-date information, both through the national reports and other data submission tools. More effective ways to report the analysis to the WGBS and other relevant meetings could be explored, including in line with the process undergoing at SAC level.

ISSUES RELATED TO FISHERIES DATA COLLECTION AND DATA QUALITY

12. The GFCM Secretariat referred to Recommendation GFCM/41/2017/6 on the submission of data on fishing activities, highlighting the results of the feasibility phase for the implementation of quality indicators, presented together with the new data quality section on the DCRF online platform and the country-specific data quality assessment dashboards for each indicator available therein.

13. The WGBS praised the important advances made in improving the overall quality of fisheries data to support the formulation of sound scientific advice. The GFCM Secretariat recalled that the feasibility phase was aimed at testing the application of quality indicators, increasing awareness among members about their data submissions and overcoming hurdles in the quality check mechanisms. Taking into account the preliminary results, which revealed potential issues with the quality of the data, it was suggested further investigating with concerned countries so to identify the elements hampering the collection and transmission of required fisheries data and then foresee specific training and/or technical assistance, as appropriate.

14. The WGBS supported continuing the application of quality indicators (timeliness, completeness, conformity, stability and consistency) to the data transmitted by CPCs through the DCRF online platform, including some of the data (i.e. DCRF Task IV – fishing fleet) that were not initially foreseen in the feasibility phase.

IMPLEMENTATION OF THE REGIONAL PLAN OF ACTION FOR SMALL-SCALE FISHERIES IN THE MEDITERRANEAN AND THE BLACK SEA

15. The GFCM Secretariat presented advancements towards characterizing SSF, introducing preliminary results from the testing of the matrix on the characterization of fishing activities, which showed the matrix to be a useful tool for assessing the scale of fisheries in a dynamic and objective way and identified vessel length, gear type, number of crew, ownership characteristics, length of fishing trip and disposal of catch as key variables emerging from this preliminary analysis. An updated draft table of technical elements for the management of SSF was also presented, together with a framework for monitoring the implementation of the Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF) and for identifying priority actions for short-term implementation. It was underlined that this framework was developed through a participatory process, and the resulting document compiled inputs received from the WGSSF, the SRCs, as well as the MedFish4Ever pre-conference workshop on "Advancing social development for the future of small-scale fisheries in the Mediterranean and the Black Sea".

16. The work undertaken in this sphere was praised as SSF accounted for a high percentage of fisheries in the region (more than 90 percent of fleets according to SoMFi 2018) and were in need of targeted actions. The WGBS endorsed the RPOA-SSF monitoring framework and priority actions, considering it an important monitoring tool. The WGBS also welcomed the SSF university initiative. The WGBS further underlined the importance of implementing management measures for SSF in a step-by-step approach, taking into account the specificities of the area (gear, catches and constraints), and when relevant, including specific SSF-oriented management measures in subregional management plans. New technologies, fleet registers, monitoring and control of catches as well as conservation issues were also raised as topics that needed to be addressed for SSF in the near future. The WGBS welcomed the work done on the characterization matrix and expressed the need to further test the matrix following the refined common methodology. It was noted, however, that CPCs were still in the process of reviewing the documentation and providing additional comments to the GFCM Secretariat.

17. The WGBS recognized that the specific issue of catch reporting from Georgian small-scale (traditional coastal) fisheries needed to be addressed by providing technical assistance to Georgia with targeted actions.

FORMULATION OF ADVICE ON MARINE LIVING RESOURCES AND FISHERIES MANAGEMENT

Future approach for the provision of advice

18. The GFCM Secretariat recalled that, with Recommendation GFCM/41/2017/6, the submission of input data for the stock assessment of priority species had become the responsibility of members and that clarifications were needed on the data transmission process in order to ensure adequate implementation of the recommendation while maintaining the quality of advice (including in terms of coverage of priority stocks assessed and time series submitted). The GFCM Secretariat underlined the requirement that all data needed for stock assessment should be made available at least one month in advance of the relevant meeting and that three basic issue were to be reconciled: (i) the need for assessments to be based on official data provided by countries on fishing activities (i.e. catch and effort data – number of vessels, number of days at sea, etc.), (ii) the importance of maintaining and preserving the independence of scientific experts to decide on the scientific data and assumptions (e.g. biological data on life history traits) and (iii) the requirement to fully report the use of the different data sources and analyses undertaken leading to the final proposed advice on stock status. Two possible options were outlined for the transmission of such data: (i) internal coordination, within CPCs, between experts and national administration and single official submission of fisheries-dependent (catch and effort), fisheries-independent (surveys) and biological data, or (ii) separate submission; official fisheries-dependent data (catch and effort) by administration representatives, and fisheries-independent (surveys) and biological data directly by experts. The GFCM Secretariat reminded the WGBS that the compilation of input data for Black Sea priority species was coordinated within the BS4F project, with the presence of both scientific experts and DCRF focal points, thus facilitating coordination and compilation of data agreed by all actors. The GFCM Secretariat, in line with the WGBS work plan, reminded the WGBS that a series of benchmark sessions for select priority species had been organized, and advice had been, for the first time, provided on year n-1 data for the particular case of Black Sea turbot (*Psetta maxima*); this represented a key milestone towards more precise advice in support to management. The work of the SGSABS has increased exponentially, from one to more than four meetings and in this respect, the importance of agreeing on a multiannual plan for assessment and benchmark meetings was underlined.

19. The WGBS acknowledged the importance of underpinning a procedure for the transmission of input data on stock assessment in fulfillment of Recommendation GFCM/41/2017/6, noting that while in certain CPCs the coordination between scientific experts and administration was advanced, in others the BS4F project had significantly helped in this process; the importance of maintaining the independence of scientific experts was underlined. The WGBS welcomed the plan for the future functioning of the SGSABS and acknowledged the importance of careful planning of the work of the SGSABS, praising the efforts made to provide advice based on year n-1 data.

Overall status of Black Sea stocks and technical management measures

20. The GFCM Secretariat presented an overview of the overall status of Black Sea stocks (as reproduced in Appendix 5), noting that the SGSABS had reviewed and assessed all eight priority species in the intersessional period 2018 – 2019, providing advice for all eight species; of these sprat (*Sprattus sprattus*) and turbot were assessed through benchmark sessions. The GFCM Secretariat underlined the great improvement in the quality and quantity of the data provided towards assessing the status of Black Sea priority species. Quantitative advice was provided only for anchovy (*Engraulis encrasilocus*), remaining advice was qualitative on a precautionary basis.

21. The GFCM Secretariat summarized the situation by species as follows:

Turbot: the turbot stock was assessed during a benchmark session comprising two meetings (Burgas, Bulgaria, 8-12 July 2019; Trabzon, Turkey, 16–17 September 2019) and in the presence of two external reviewers and three stock assessment experts. The benchmark was preceded by data preparation meetings that greatly improved the quality of input data owing to the efforts of Black Sea experts with the support of the BlackSea4Fish project. Advice was provided based on year n-1 data (including 2018 data), spanning from 1950 to 2018. Three competing models were examined, a state-space assessment model (SAM) and two assessment for all (a4a) approaches. The SAM model was chosen to provide advice based the fact that i) it was the model experts from the area were familiar with and had been used in the past, ii) the previous model had been greatly improved, iii) it had the best retrospective pattern and iv) it was stable and could be safely be used in forecasts and management strategy evaluation. All decisions on the assumptions were taken before seeing the results. The outcome of the benchmark revealed a perception of the stock in line with previous assessments which was found to be in overexploitation. An error was found, after the benchmark session, associated to the estimation of reference points. Irrespective of the reference points used, the stock was found to have a positive evolution of biomass and an improved or unchanged evolution of the overexploitation status over time. The WGBS discussed that priority should be given to work on the estimation of turbot biological reference points and the establishment of a region-wide scientific survey for turbot.Desirable work was outlined, including post-hoc standardization of scientific surveys, estimation of IUU and the solution of inconsistencies in age reading; a proposal for a research programme on Black Sea turbot population structure was described.

Black Sea anchovy: the stock was considered in overexploitation with $F_{current}$ being approximately 1.16 times F_{MSY}. The need for further exploration of the SAM was discussed in view of an upcoming benchmark session in 2019/2020.

Piked dogfish (*Squalus acanthias)*: the stock was considered depleted on a precautionary basis; the advice was to implement a recovery plan and reduce F by > 90 percent. SSB and recruitment estimates were found to be consistently low irrespective of model configuration and assumptions made. Information on piked dogfish remains scarce and the problems because of missing information on certain ages were not due to poor data collection but to the absence of individuals in the population. The SGSABS proposed to postpone the benchmark assessment (to 2020/2021) and work towards improving the information available for the assessment of this stock, through: i) an analysis of monthly catches by gear (2008–2018) and spatial distribution of effort (2017–2018) in Bulgaria; ii) an analysis, by haul and season, of the abundance indices and length distributions of the Romanian surveys, including an in-depth analysis of sex ratios by area and a comparison with Bulgaria, and iii) the improvement of bycatch estimates

European sprat: this was the first benchmark carried out in the Black Sea and both an external reviewer and a stock assessment expert were put at disposal of the group. The benchmark was planned for two days but was not long enough. Data preparation meetings were organised by the BS4F project for Romanian, Bulgarian and Turkish data, resulting in significant improvements in i) time series of length frequency distributions, ii) several surveys to tune the models, including an attempt to analyse the Turkish anchovy acoustic survey data for sprat, as well as mid water trawl surveys in different seasons for Bulgaria and Romania, iii) a standardized CPUE time series for the Turkish fleet. The stock was assessed using four alternative methodologies (Integrated catch at age – ICA, SAM, extended survivor analysis – XSA and separable Virtual Population Analysis – VPA.

SAM provided a lower perception of SSB and a higher perception of F, although the final year of XSA was within the confidence bounds of the SAM. The historical part of the quantities estimated by SAM was very different from ICA and XSA; this discrepancy is ascribable to the different modeling approach. All models showed a cyclical pattern in both recruitment and SSB. XSA and ICA also showed overall decreasing trends in these quantities, coupled with an increasing trend in F, which SAM did not show. Biomass reference points were calculated using ICES guidelines for Blim and Bpa. Both XSA and SAM estimated SSB above Bpa. The Group agreed not to use ICA in the future but expressed difficulties in formulating a decision regarding the final model to be adopted, between SAM and XSA. Pending further work and, given the expert perception on the stock (i.e. a decrease in SSB and length-structure of the stock), the overall results of XSA were endorsed and precautionary advice was provided based on this. Stock status was determined as uncertain. It was recommended the benchmark session be extended, during which time work would be done towards resolving the identified issues within the context of the BlackSea4Fish project. In this respect the GFCM Secretariat proposed a consultant be hired to perform an analysis of the sprat situation and formulate a plan for its assessment, to be presented for discussion and approval at the 2019 SGSABS. The aim would be to finalise the sprat benchmark in 2020 based on the agreed work plan and, in the meantime, advice would be formulated using the XSA model accepted for the provision of precautionary advice in 2018.

Horse mackerel (*Trachurus mediterraneus*): the stock was considered in overexploitation on a precautionary basis and issues related to the nominal Turkish CPUE used to tune the XSA model were identified. The SGSABS suggested a benchmark assessment be carried out.

Red mullet (*Mullus barbatus*): the stock was considered uncertain with signs of overexploitation on a precautionary basis; the assessment presented worrying trends with high catches in the final years and decreasing SSB and recruitment. Issues were identified on the treatment of trawl survey data and mis-reporting of catches. The advice was to reduce fishing mortality on a precautionary basis.

Whiting (*Merlangius merlangus*): the stock was considered in overexploitation on a precautionary basis and the SGSABS noted the complete absence of age 0 individuals and that discards were not included in the assessment. Future work should consider the use of length data to derive ages through slicing exercises while working on improving information on discards and ageing

Rapa whelk (*Rapana venosa*): the stock was considered to be fluctuating around MSY. Significant further work is required to progress in the provision of advice for this species through the collection of new data and the improvement of existing data. The research programme being implemented by the BS4F project will significantly improve the data available for stock assessment.

22. Finally, the GFCM Secretariat recalled the suggestions from SGSABS on other general issues and needs related to the improvement of advice on the status of Black Sea stocks, including: i) the creation of a Black Sea subregional scientific database containing all raw data required to perform stock assessment (including from regional research programs and surveys, such as the Rapa whelk research programme) and including the necessary data quality checks, ii) the need to increase fishery-independent surveys to cover the distribution of the main commercial species in a comprehensive way, iii) the need to improve information on bycatch and discards towards incorporating discard rates in the assessment of priority stocks when needed, iv) the need to include Georgian catches for turbot, red mullet, piked dogfish and whiting caught by small artisanal boats fishing inshore with no obligation to record their landings, v) the need to revise the existing framework for the provision of advice to account for the need of both more precise advice in data rich situations and precautionary advice when in dearth of data and vi) the definition of a framework for the estimation of biological reference points for all Black Sea priority species with the help of a qualified expert.

23. Mr Demianenko, expert from Ukraine, noted that a study of turbot stock distribution is very important to develop comprehensive conservation measures towards precautionary exploitation of the turbot stock, excluding overexploitation and depletion of turbot stock on certain marine subareas. Taking into account the above mentioned, he underlined the need to realize relevant research on turbot stock identity.

24. The delegate of the EU highlighted that in order to improve the advice, the most important action was to ensure a proper regional survey-at-sea for this species, as requested by experts of the SGSABS.

25. Mr Nicolaev reminded the WGBS of the importance of considering the fishery for rapa whelk when assessing turbot, both in terms of turbot bycatch and in terms of the impact the development of this fishery has had on the fishing effort exerted on turbot.

26. The WGBS acknowledged the vast amount of work done by the SGSABS and the BS4F project towards improving input data and the assessment of stock status for priority species in the Black Sea, and underlined the importance of creating a regional database for input data. The need to provide precise advice for sprat was considered imminent in view of the future establishment of management measures (i.e. catch limits) for this species. In regards to turbot, the WGBS endorsed the status of the stock (trends in SSB, recruitment and fishing mortality estimates) and advice emerging from the benchmark session for this species but regarded this as precautionary in view of a full revision of the estimation of reference points based on the stock assessment agreed during the benchmark. The WGBS finally commented on the need to fully involve experts from the region in the assessment of potential management measures to be adopted, via several different tools: the compilation of technical elements in support to management as well as management strategy evaluation (MSE) where applicable; piked dogfish (management plan) and red mullet (minimum conservation reference size) were identified as the first candidates.

27. The WGBS further noted the importance of conducting training activities for Black Sea experts to improve their capabilities in stock assessment related issues and move away from the involvement of external experts in these analyses. In this respect the WGBS agreed on the need to constitute species groups to tackle problems for species having similar issues.

Interactions between fisheries and marine ecosystems and environment

28. The GFCM Secretariat recalled discussions held on the impact of anthropogenic underwater noise on fish resources, which had gained prominence within the GFCM agenda due to the potential negative effects on stocks and related socio-economic consequences. The GFCM Secretariat introduced advances in the development of draft assessments of the vulnerability of fisheries to climate change in the Mediterranean where selected case studies were being, noting that it would be important to cover the Black Sea with one case study.

29. Mr Nicolaev underlined the importance of underpinning the impacts on underwater noise, reminding the WGBS that Romania and Bulgaria was addressing the issue through the application of the Marine Strategy Framework Directive (MSFD). The WGBS agreed that underwater noise impacts should be adequately monitored and acknowledged the importance of urgently addressing the impacts climate change on the Black Sea environment and fisheries.

30. Ms Marina Panayotova, representative of ACCOBAMS, presented the CeNoBS Project, a project funded by EC through Directorate-General Environment and co-funded by ACCOBAMS. The proposal involves ten partners, including Romania, Bulgaria, Ukraine, Monaco and Turkey. In accordance with the project activities, a Regional Aerial Survey of cetaceans, large marine species and human activity, coordinated by ACCOBAMS and Mare Nostrum NGO, was completed in June 2019. The survey covered the marine areas of Ukraine, Romania, Bulgaria, Turkey and Georgia. A total of 3898 observations of cetaceans, birds, rays, fish, marine litter and other human activities were made over the 7000 km of surveyed transects. 3680 cetaceans were spotted and the analysis of the data is ongoing. In addition, a pilot study on cetaceans by-catch in turbot bottom-set gillnets fisheries and on the use of pingers for reduction of incidental by-catch started in Bulgarian area in 2019. Four vessels authorized for turbot fishery in Bulgaria participated (3.4 percent of 116 vessels licensed for turbot fishery in 2019) in the survey during spring and summer seasons. A total of 105 cetaceans (1 ind. *Tursiops truncatus* and 104 *Phocoena phocoena*) were by-caught in 95 km gillnets. A significant increase in *P. phocoena* bycatch rate from 2.47 individuals per day per sq. km of gillnet in spring to 24.13 individuals in summer was observed. More by-caught cetaceans were registered in the Northern Bulgarian area during the summer and more in the Southern area during the spring. The use of two types

of pingers was tested and preliminary results showed no statistically significant differences in the bycatch rates between active and control nets.

31. The WGBS acknowledged the good work of the CeNoBS Project and underlined the importance of investigating and improving gear technology (e.g. via the monofilament gillnets) towards minimizing cetacean bycatch through information sharing. It requested the GFCM and ACCOBAMS Secretariats to actively coordinate on this, in the context of the joint MoU between the two organizations.

WGBS WORK PLAN FOR 2019-2021

32. On the basis of the outcomes of the intersessional activities and discussions during the meeting, the WGBS adopted its 2019–2021 work plan as follows:

Stock assessment and strengthened advice

- Improve the quality of data through:
    - An in-depth appraisal of data available, their quality and the identification of issues, biases and gaps, to be carried out within data preparation meetings concentrating on specific groups of species having similar issues. Work should include detailed descriptions of data collection schemes and raising methodologies.
    - The creation of a Black Sea subregional scientific database including standard quality checks, taking into consideration already existing similar initiatives
- Improve the description of the direct fisheries affecting piked dogfish, including the spatial distribution of fishing effort and catches, and the existence of complementary/seasonal fisheries:
    - Analysis of monthly catches by gear in Bulgaria for the period 2008–2018, as well as the spatial distribution of fishing effort of Bulgaria in 2017 and 2018
    - Analysis, by haul and season, of the abundance indices and length distributions of the Romanian surveys, including an in-depth analysis of sex ratios by area and a comparison with Bulgaria
- Draft technical elements in support of management for piked dogfish
- Draft elements for the determination of Minimum Conservation Reference Sizes (MCRS) for red mullet
- Work towards providing solutions to identified limitations related to red mullet data. An analysis of tuning indices available and their standardization should be at the forefront of this work, as well as the quantification of misreporting issues.
- Continue compiling information on rapa whelk abundance, distribution and length, and evaluate the possibility of providing age estimations.
- Improve the estimation of bycatch of priority species, including:
    - improving the estimates of bycatch of piked dogfish from the different fleets;
    - improving the estimates of discards of whiting and horse mackerel, including discards by age;
    - providing further scientific evidence of the discards of turbot from the rapa whelk beam trawl fishery;
- Ensure the implementation of surveys at sea that provide fishery-independent indexes of abundance for the main commercial species, and in particular:
    - plan for an all-of-Black Sea survey for turbot, among other species
    - carry on and expand the coverage of acoustic surveys providing information on anchovy;

    - continue to estimate abundance indices from the data collected in acoustic surveys targeting anchovy.
    - attempt to provide acoustic estimates for horse mackerel; and
    - perform synchronous and harmonized beam trawl surveys for rapa whelk
- Organize data preparation meetings prior to the SGSABS session in 2020 and prior to all benchmark sessions
- Organize a meeting on the estimation of biological reference points according to the Terms of Reference in Appendix 7, to be carried out before the SGSABS, under the moderation of a qualified expert on BRPs.
- Perform a benchmark assessment for anchovy (proposed ToRs included in Appendix 7).
- Revise the framework for the provision of advice.
- Conduct training activities to increase the capacity to perform quantitative assessments of stock status.

Data collection and quality indicators

- Work on the implementation of quality indicators on the DCRF online platform for fisheries data as requested through existing GFCM decisions.
- Finalize both the update of the DCRF manual and the release of data transmission tools on the DCRF online platform for those reporting requirements which have been harmonized with the DCRF.

Sustainable small-scale and recreational fisheries, including priority actions for the implementation of the RPOA-SSF

- Revise the matrix of characterization of fishing activities, based on the feedback from initial piloting in the Mediterranean and Black Sea.
- Expand testing of the characterization matrix at national levels, following the refined common methodology and based on a representative sample, and organize a session for data validation.
- By 2021, produce a full analysis of the socio-economic characteristics of SSF, combining information obtained from the DCRF, from the dedicated GFCM socio-economic surveys and from the EU socio-economic variables compiled through the EU-DCF/ GFCM-DCRF.
- Compile existing studies on the interactions between SSF and recreational fisheries.
- Analyze the current status of SSF fleet registries in all GFCM countries detailing the information compiled and suggesting common minimum variables required to provide advice on issues included in the RPOA.
- Compile and put at disposal existing training material related to various aspects of the RPOA-SSF, including on safety onboard.

Interactions between fisheries and the marine environment and ecosystems

Discards and incidental catches of vulnerable species

- Keep on implementing and expand, with relevant partners (ACCOBAMS and national institutions), the bycatch monitoring programme and related training activities.
- Collaborate in the context of the CeNoBS project towards monitoring cetacean bycatch in the Black sea, in particular concentrating on the potential identification of mitigation measures.

Advances towards an adaptation strategy for climate change and non-indigenous species

- Implement the methodology for the assessment of the vulnerability of fisheries in the Mediterranean and Black Sea to the effects of climate change in a case study for small pelagic species in the Black Sea.
- Work towards the identification of potential management measures for those NIS (non-indigenous species) that become a target fishery, in particular for rapa whelk.
- The list of meetings below is submitted to the consideration of the WGBS (meetings pertinent to the whole GFCM area of competence are denoted in **bold**)

Meeting	Place/Date
SGSABS data preparation meeting (BS4F)	TBC December 2019
Meeting on the estimation of Biological Reference Points for the Black Sea fish stocks (BS4F)	February 2020
Subregional group on stock assessment in the Black Sea (SGSABS)	TBC February 2020
Workshop on fisheries data submissions and implementation of quality indicators on the DCRF online platform	**February 2020**
WGRF	**March 2020**
Data preparation meeting for anchovy benchmark session (BS4F)	TBD
SGSABS benchmark session for Black Sea anchovy	TBD
Ninth meeting of the WGBS	Burgas, TBD
Technical consultation on bycatch	**December 2020**
Meeting on surveys data analysis	**December 2020**
SSF stakeholder university	**TBD 2020**
Expert meeting on climate change	**TBD 2020**

33. It was recalled that GFCM countries were expected to actively contribute in making sure the agreed work plan is duly followed, by making available necessary resources, ensuring complete replies to requests for information and timely submission of appropriate data. Technical assistance would be provided to requesting countries in line with specific needs for the effective implementation of the WGBS work plan and mid-term strategy activities at national level, under the frame of the BlackSea4Fish project.

34. The WGBS agreed to submit its work plan for endorsement by the Commission, taking note that activities would be distributed over the timeframe of the implementation of the mid-term strategy and would be conducted according to the Commission's priorities and to the availability of funds, especially through the BlackSea4Fish project.

35. The WGBS also took note of existing opportunities, under the ongoing seventh Programming Directions of the Global Environment Facility (GEF7), to fund national activities in Black Sea GEF eligible countries (Georgia, Moldova, Turkey and Ukraine) that would facilitate the implementation of GFCM policies for the sustainable management of Black Sea fisheries and the conservation of marine ecosystems. The Black Sea was one of the large marine ecosystems which would be eligible under GEF7 and the GFCM could be the executing agency for projects addressing the international waters component of the GEF7 portfolio. The GFCM Secretariat will keep CPCs appraised on any developments on GEF7 as part of ongoing consultations for a Black Sea project.

SESSION ON TURBOT TAC IN THE BLACK SEA

36. In line with the work plan adopted by the forty-second session of the GFCM and the requests included within Recommendation GFCM/41/2017/4 on the establishment of an ad-hoc working group, participants were reminded that a dedicated session of this meeting of the WGBS would be devoted to provide technical advice in relation to the total allowable catch (TAC) for turbot fisheries in the Black Sea. In particular, the Commission asked for advice on how to: a) establish a fair and equitable allocation scheme of the TAC of Black Sea turbot, taking into consideration the efforts made by CPCs to manage turbot fisheries and the amount of historical catches, and apply in some cases stricter rules than those defined in this recommendation, also based on socio-economic considerations; and b) establish the mechanism to manage the TAC, including a reduction mechanism of the TAC, if appropriate.

37. Participants were invited to discuss how best to provide advice on these two aspects, and agreed that the best way forward was to provide advice on potential criteria for the establishment of TAC and its allocation among CPCs, and to discuss on its implications.

38. Delegates of the EU, Turkey and Ukraine gave presentations on the importance of turbot fisheries and management in their respective countries, including socioeconomic considerations. The summaries of these presentations are provided in Appendix 8.

39. The WGBS discussed the general terms of the management of turbot in the Black Sea and agreed on the importance of eradicating IUU activities through joint inspection schemes and increased control activities.

40. The WGBS had an extensive discussion on the criteria to be adopted for the allocation of TAC and quotas to CPCs and agreed on the following eight criteria:

- Historical catches and historical fishing pattern of qualifying members
- Status of the stock – scientific advice
- Control mechanisms and fight against IUU fishing
- Compliance of qualifying member to the GFCM conservation and management measures for turbot
- Status of the qualifying parties, Contracting Party or Cooperating Non-Contracting Party
- Socioeconomics aspects of fishery
- Contribution of fishery to the national food security of qualifying members
- Contribution of the qualifying member to GFCM scientific activities

41. Following the agreement reached on the TAC allocation criteria and based on a test trial proposed by the EU for all CPCs, a management scenario of a TAC including the allocation of quotas was presented. The results of this management scenario are summarized in the Table below and detailed in Appendix 9 and include a proposal for the establishment of a TAC level of 857 tonnes for three years (2020–2022), for the contracting parties, the cooperating non-contracting parties and "other", taking into consideration the balance between socioeconomic and environmental aspects. The level of the TAC takes into account the current scientific advice, the fishing pattern and the level of IUU activities. The management scenario includes a possible allocation of quotas following the criteria suggested by the Group, and additional elements such as specific review clause for the revision of the TAC, regular reporting of catches, management and monitoring of quotas, a payback and transfer scheme (Appendix 9). The EU highlighted that the allocation criteria need to be applied in a manner that encourages non-members to become CPC. Furthermore, a dedicated Working Group to develop a pilot project for a catch certificate for turbot to ensure full traceability of turbot catches was recommended.

CPC	**Turbot TAC (tonnes) and allocation key**			
	2020	**2021**	**2022**	**Percentage**
EU	150	150	150	17.5
TR	497	497	497	58.0
UA*	160	160	160	18.7
GE	20	20	20	2.3
Other	30	30	30	3.5
Total	**857**	**857**	**857**	**100.0**

42. The delegates of Bulgaria, Georgia, Romania, Turkey and Ukraine supported the management scenario proposed by the EU on the TAC of turbot, including a possible allocation scheme of turbot quotas, a system to manage the TAC and additional elements to strengthen the measures in place, such as the fight against IUU with a catch certificate scheme on a pilot basis.

43. The WGBS endorsed the allocation criteria to CPCs and the results of the management scenario presented for turbot, including the establishment of a precautionary TAC level at 857 tonnes for 2020-2022, the system to manage the TAC, review clause, monitoring of quotas and additional elements such as a pilot project for a catch certificate scheme to ensure traceability of turbot catches (Appendix 9). The WGBS formulated advice for the consideration of the Commission.

44. The Ukrainian expert requested the inclusion of a footnote in relation to his country's quota, stating that *"The total quota of Ukraine is 290 tons, this includes 130 tons of quota for the waters adjust to the territory of the Autonomous Republic of Crimea and the city of Sevastopol, Ukraine, temporarily occupied by the Russian Federation and 160 tons for the other part of Exclusive Economic Zone of Ukraine" (text proposed by the Ukrainian delegation).

CONCLUSIONS AND RECOMMENDATIONS

The WGBS reached the following conclusions and recommendations:

Implementation of the BlackSea4Fish project

45. In reviewing the progress of the BlackSea4Fish project, as discussed in the second Meeting of the BlackSea4Fish Steering Committee, the WGBS appraised the work done and acknowledged the importance of the project in supporting its work plan. In particular, the WGBS highlighted the leap ahead in the quality of the preparatory work done in support of the provision of advice on priority species, covering a range of activities including data preparation and training in support of benchmark assessments. Also, the support of the project for the implementation of mid-term strategy actions of relevance for the region was highlighted and participants expressed their satisfaction for the achievements of the project during the intersession.

Data collection and data quality

46. The WGBS noted the limited quality of the data submitted through the national reports, especially on incidental catches of vulnerable species; it underlined the need to ensure the information is appropriately collected and shared so to facilitate analysis that can be useful in supporting fisheries management.

47. The WGBS highlighted the importance of assessing the quality of submitted data to better support fisheries management, and highlighted that the DCRF online platform was now the most comprehensive data submission tool, and that appropriate quality checks should therefore be implemented on that platform. In this context, the WGBS praised the work done during the intersession in applying quality indicators (timeliness, completeness, conformity, stability and consistency) to the data transmitted by CPCs through the DCRF online platform. It highlighted the importance to interact with CPCs to solve quality issues, including through the online quality dashboards being implemented, as well as provide technical assistance to riparian states that require so. Should the quality issue not be resolved, the WGBS suggested a letter should be sent by the Secretariat to the CPC involved. Participants proposed the Commission look into this matter and propose a methodology for work.

Implementation of the Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea

48. In recognizing SSF is a key element of Black Sea fisheries (>80 percent fleets), the WGBS fully endorsed the RPOA-SSF monitoring framework and priority actions and expressed its support to further testing of the matrix for the characterization of fishing activities, following the refined common methodology. It noted that, in both cases, CPCs were still in the process of reviewing the documentation and providing comments.

49. The WGBS further underlined the importance of implementing management measures for SSF in a step-wise manner, taking into account the specificities of the area (gear, catches and constraints), and when relevant, including specific SSF-oriented management measures in subregional management plans.

50. The WGBS recommended a dedicated concerted action be defined to address the issue of reporting catches from Georgian artisanal (traditional coastal) fisheries. This action would serve to address the various aspects of the problem, which will require the involvement of different players, including i) a change in legislation, ii) the establishment of designated landing points, iii) a system to record/report catches, iv) training of inspection staff and fishers and v) monitoring of the landings.

Future approach for the provision of advice

51. In relation to the submission of data required for stock assessment, the WGBS agreed on the principles proposed to the SAC to ensure the quality of advice, i.e: i) all data should be made available at least one month in advance of relevant meetings, ii) assessments should be based on official data provided by countries on fishing activities (i.e. catch and effort data – number of vessels, number of days at sea, etc.), iii) the independence of experts to decide on scientific data and assumptions used (e.g. biological data on life history traits) should be maintained and preserved, and iv) the use of the different data sources and analyses undertaken should be fully reported. It also agreed on the need for experts to attempt to provide advice for priority species when limited or no official data were available, facilitating the WGBS to propose precautionary measures on the basis of that advice

52. The WGBS agreed that, in order to maintain the independence of experts, input data for stock assessment could be provided to the DCRF via a separate submission system where official fisheries-dependent data (catch and effort) are submitted by official DCRF focal points, and fisheries-independent (surveys) and biological data directly by scientific experts. Nevertheless, when coordination between experts and DCRF focal points already existed, one single submission of all data by DCRF focal points would be welcome. The WGBS recognized and underlined the role of the BS4F project in this process, emphasizing the importance of maintaining the project's flexibility to contact appropriate scientific experts.

53. The WGBS fully supported the proposals for the future functioning of the SGSABS and agreed on the importance of planning in advance for benchmark sessions (Appendix 6).

Advice on the status of Black Sea stocks

54. The WGBS recommended the transition from deprecated models such as XSA to more complex statistical catch-at-age models and underlined the urgent need to invest in training of Black Sea experts towards enhancing local knowledge and promoting independence on the more advanced assessment methodologies. In this respect, the WGBS endorsed the idea of creating groups of experts working on the same species with similar methods (e.g. for turbot and for small pelagics). In particular, the WGBS recommended a regional group on small pelagics address the use of the SAM model for the assessment sprat and anchovy in the Black Sea and be provided with training on its use in view of the SGSABS assessment sessions of 2020.

55. The WGBS remarked the importance of providing timely and more precise advice towards effective management and welcomed advice based on year n-1 data, formulated for turbot in 2019, for the first time in the Black Sea.

56. The WGBS agreed with the need to launch a process to revise and update the framework for the provision of advice endorsed in 2014 to account for the need of both more precise advice in data rich situations and precautionary advice when in dearth of data.

Status of the stocks

57. The WGBS acknowledged that the status of all main commercial Black Sea stocks assessed was in overexploitation, uncertain or fluctuating around MSY (see Appendix 5 for the complete advice); in particular, the alarming state of piked dogfish was acknowledged. The WGBS remarked that, following accurate inspection of input data by the BS4F project, data quality was mostly sufficient for the provision of qualitative precautionary advice only, with the exception of Black Sea anchovy for which a quantitative advice is provided.

58. The WGBS provided additional comments on the advice on the status of specific priority stocks as follows:

- European sprat: the work carried out by the benchmark session was reviewed and the need to consolidate the assessment towards providing precise enough advice to be used within the remit of a management plan was underlined. The possibility to assess the use of precautionary catch limits while the advice is consolidated, as well as the implementation of science-based catch limits once the benchmark is closed was suggested.
- Turbot: the reference points emerging from the benchmark assessment were considered in need of revision. Despite this, the WGBS highlighted the fact that the perception of the stock continues to show a positive trend (biomass continues to increase and fishing mortality appears to stabilize or decrease depending on the reference points adopted), although the resource is still in overexploitation. The WGBS recommended to continue the work on reference points for turbot in the presence of all experts. In the meantime, the WGBS recommended a precautionary approach towards fishing mortality by establishing a precautionary TAC.

  While acknowledging the importance of determining turbot stock identity and reviewing the concept note proposed by the SGSABS, the WGBS agreed that, in the face of the finalization of advice and reference points and the need for a whole-of-Black Sea scientific survey, this was not a priority for the next intersession
- Piked dogfish: the WGBS suggested the benchmark session planned for 2020 be postponed allowing time in improve input data through: i) analysis of monthly catches by gear (2008–2018) and spatial distribution of effort (2017–2018) in Bulgaria; ii) analysis, by haul and season, of the abundance indices and length distributions of the Romanian surveys, including an in-depth analysis of sex ratios by area and a comparison with Bulgaria, and iii) an improvement of bycatch estimated.

Management of priority species

59. The WGBS underlined the importance of implementing management measures for all overexploited stocks in the Black Sea and agreed that the most efficient way to do so was through technical elements in support of management plans, a tool compiling advice coming from experts. The WGBS agreed that the priority was piked dogfish for which the urgent definition of a recovery plan was recommended, while work should be carried out on the determination of Minimum Conservation Reference Sizes (MCRS) for priority species, starting with red mullet.

Interactions between fisheries and the environment and ecosystems

60. The WGBS underlined the urgent need to rapidly make progress on the effects of climate change on Black Sea fisheries resources, taking into account the work presented at the GFCM Fish Forum in December 2018 and advancing on the assessment of vulnerability to climate change in selected Black Sea case studies.

61. The launch of the CeNoBS project, addressing among others the monitoring of Black Sea cetacean populations, was welcomed and ACCOBAMS, as one of the project partners, was invited to

maintain the WGBS abreast of progress and findings, hoping it would help improving knowledge on bycatch of these species and support the identification of relevant solutions.

62. It was suggested that on the basis of CeNoBS and other projects on bycatch implemented by the GFCM, ad-hoc work on mitigation measures and selectivity of fishing gear be launched, including through the Memorandum of Understanding with ACCOBAMS, as reducing bycatch of vulnerable species – cetaceans in particular for the Black Sea – had to come back to the forefront, possibly starting with the adoption of a specific decision at the next session of the Commission.

Other issues of relevance to the WGBS

63. The WGBS highlighted the increasing demand for an integrated approach for the management of human activities and the sustainable exploitation of living resources in the Black Sea, especially in light of international initiatives such as the Sustainable Development Goals and FAO Blue Growth initiative, as well as regional commitments such as the Sofia and Bucharest declarations and the Common Maritime Agenda. It was noted that there were opportunities to participate and collaborate in integrative international programmes in the Black Sea, including the Global Environment Facility, and that these should be explored, making sure they don't result in overlaps.

ELECTION OF THE WGBS BUREAU

64. The Executive Secretary recalled the status of the current Bureau, composed of Mr Simion Nicolaev as coordinator, Mr Galin Nikolov as vice-coordinator and Mr Ilhan Aydin as second vice-coordinator, underlining that their mandate had been extended multiple times since the establishment of the WGBS. He informed about the procedures for election of a new bureau and that proposals had been received by the Secretariat ahead of the meeting.

65. All participants thanked the outgoing Bureau and paid special tribute to Mr Simion Nicolaev for his outstanding commitment at the head of the WGBS since it was first established. Having chaired eight meetings of the WGBS and represented it on multiple occasions in over eight years, he had a crucial role in its considerable growth. His knowledge, tireless work and balanced leadership were praised by all participants, who wished to keep on counting on his experience within the WGBS.

66. On the basis of the proposals and information received, the WGBS unanimously elected Mr Galin Nikolov (Bulgaria) as WGBS Coordinator as well as Mr Ilhan Aydin (Turkey) and Mr George Tiganov (Romania) as first and second Vice-Coordinators, respectively.

ANY OTHER MATTER

67. The Central Fisheries Research Institute (CFRI) of Trabzon organized a restocking activity in the afternoon of the second day of meeting. Participants were given the opportunity to visit the hatcheries of turbot hosted in the institute, learning about recirculation aquaculture systems, farming of turbot larvae and juveniles and given insights on the management of the hatchery and best practices in terms of production methods and aquaculture development. All then took part in the release of tagged turbot fingerlings into the Black Sea.

68. The WGBS expressed its gratitude to CFRI and Turkey for the possibility to benefit from the institute's expertise in this type of activities, often organized – together with specific trainings – within the framework of the Aquaculture Demonstrative Centre recently established by the GFCM in both CFRI and the Romanian National Institute for Marine Research and Development (NIMRD) as regional hubs fostering aquaculture activities to ensure the sustainability of the sector.

69. Mr Gücü informed the WGBS that he wouldn't be able to continue in his role as BlackSea4Fish Project Coordinator at the end of his current assignment, as he needed to resume his other professional duties. He referred to his positive experience in leading the project and thanked all experts and those involved in BlackSea4Fish for their collaborative spirit, their initiative and precious contributions. He stressed that he would keep on being actively involved in the activities of the project and looked forward to renewed ways to do so.

70. The WGBS warmly thanked the BlackSea4Fish Project Coordinator for his hard work as coordinator. The important advances registered by the project could be directly attributed to his experienced leadership, his knowledge and abilities, the fruitful collaborations he established as well as his tremendous efforts in launching as many key actions as possible for the benefit of riparian countries and the sustainability of Black Sea fisheries. The WGBS wished all the best to Mr Gücü in his future endeavors and agreed to launch the procedures to identify and select a new coordinator as soon as possible. It also underlined the importance to secure a more stable position (instead of a short-term consultancy) at the head of the project, for the sake of continuity and in line with the responsibilities required for the job.

DATE AND VENUE OF THE NINTH MEETING OF THE WGBS

71. It was decided to make use of the location of the GFCM Black Sea Unit in Burgas, Bulgaria to hold the next meeting of the WGBS. A decision on the exact dates would be taken at the forty-third session of the Commission.

CLOSURE OF THE MEETING AND ADOPTION OF THE REPORT

72. The WGBS warmly thanked the Government of Turkey for the great hospitality, both in and outside of the meeting room. Gratitude was expressed to the WGBS coordinator for chairing the meeting and to all participating experts for their contributions during the meeting.

73. Gratitude was also expressed to the BlackSea4Fish Project coordinator and the GFCM Secretariat for backstopping the WGBS and facilitating the coordination and implementation of its activities throughout the intersessional period.

74. The conclusions and recommendations, as well as the work plan and appendices, were adopted on Friday 20 September 2019. The full report was adopted by e-mail.

Appendix 1

Agenda

1. Opening, arrangements of the meeting and adoption of the agenda
2. Intersessional activities of relevance to the WGBS, including in the context of the BlackSea4Fish project
3. National reports to the WGBS
4. Issues related to fisheries data collection and data quality
5. Implementation of the Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea
6. Formulation of advice on marine living resources and fisheries management
7. WGBS work plan for 2019–2021
8. Election of the WGBS Bureau
9. Date and venue of the ninth meeting of the WGBS
10. Any other matter
11. Conclusions and recommendations
12. Working Group on turbot TAC in the Black Sea

Appendix 2

List of experts

BELEKOU Pinelopi (European Commission)
CHKHOBADZE Maia (Georgia)
GÜNES Erdinç (Turkey)
DEMIANENKO Kostiantyn (Ukraine)
KUCUK Ercan (Turkey)
LAINÉ Valérie (European Commission)
LEONCHYK Yevhen (Ukraine)
LOMASHVILI Irine (Georgia)
MARAVELIAS Christos (European Commission)
MAXIMOV Valodia (Romania)
NIKOLOV Galin (Bulgaria)
NISTORICA Tatiana (Moldova)
PANAYOTOVA Marina (ACCOBAMS)
PETROVA-PAVLOVA Elitsa (Bulgaria)
PIATINSKII Mikhail (Russian Federation)
RALCHEV Georgi (Bulgaria)
RASHKOVA Lidiya (Bulgaria)
SNIHIROV Serhii (Ukraine)
TIGANOV George (Romania)
TUROK Vasyl (Ukraine)
USTUNDAG Erdal (Turkey)
VELINOVA Mihaela (Bulgaria)
ZENGIN Mustafa (Turkey)

WGBS Coordinator

NICOLAEV Simion

GFCM SECRETARIAT

SROUR Abdellah
BERNAL Miguel
GÜCÜ Ali Cemal (BlackSea4Fish)
MORELLO Elisabetta Betulla
SESSA Margherita

Appendix 3

List of documents

GFCM:WGBS8/2019/1	Provisional agenda and timetable
GFCM:WGBS8/2019/2	Executive report of WGBS intersessional activities, recommendations and work plan
GFCM:WGBS8/2019/3	RPOA-SSF monitoring framework and priority actions
GFCM:WGBS8/2019/Inf.1	List of documents
GFCM:WGBS8/2019/Inf.2	List of participants
GFCM:WGBS8/2019/Inf.3	Report of the forty-second session of the General Fisheries Commission for the Mediterranean (FAO headquarters, 22–26 October 2018)
GFCM:WGBS8/2019/Inf.4	Report of the seventh meeting of the Working Group on the Black Sea (WGBS) (Bulgaria, 10 – 13 July 2018)
GFCM:WGBS8/2019/Inf.5	National reports to the WGBS
GFCM:WGBS8/2019/Inf.6	Achievements of the BlackSea4Fish Project in 2019
GFCM:WGBS8/2019/Inf.7	Conclusions of the SGSABS benchmark session for the assessment of Turbot in the Black Sea (Bulgaria, 8 – 12 July 2019)
GFCM:WGBS8/2019/Inf.8	Report of the Working Group on small-scale fisheries (WGSSF) (Montenegro 6–7 March 2019)
GFCM:WGBS8/2019/Inf.9	Report of the GFCM/OceanCare Workshop on anthropogenic underwater noise and impacts on fish, invertebrates and fish resources (FAO headquarters, 21–22 February 2019)
GFCM:WGBS8/2019/Inf.10	Report of the Working Group on Marine Protected Areas, including a session on Essential Fish habitats (WGMPA) (FAO headquarters, 18–21 February 2019)
GFCM:WGBS8/2019/Inf.11	Report of the Subregional Group on Stock Assessment for the Black Sea (SGSABS) (Bulgaria, 26 November – 1 December 2018)
GFCM:WGBS8/2019/Inf.12	Results of the feasibility phase for the application of fisheries data quality indicators on the DCRF online platform
GFCM:WGBS8/2019/Inf.13	Report of the SGSABS benchmark session for the assessment of sprat in the GSA 29 (Bulgaria, 26– 28 November 2018)
GFCM:WGBS8/2019/Inf.14	Report of the workshop on age reading of select Black Sea species (anchovy and rapa whelk) (Turkey, 28 January – 1 February 2019)
GFCM:WGBS8/2019/Inf.15	Report of the workshop on the harmonization of data collection at landing sites and in scientific surveys-at-sea (Bulgaria, 3–5 April 2019)
GFCM:WGBS8/2019/Dma.1	FAO. 2018. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean*. Rome. 172 pp.
GFCM:WGBS8/2019/Dma.2	FAO. 2019. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean at a glance*. Rome. 30 pp.

GFCM:WGBS8/2019/Dma.3 FAO. 2019. *Monitoring discards in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 639. Rome, FAO. 88 pp.

GFCM:WGBS8/2019/Dma.4 FAO. 2019. *Monitoring incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO. 92 pp.

GFCM:WGBS8/2019/Dma.5 Manual of the GFCM Data Collection Reference Framework (DCRF) – Version 19.1 (available in English and French)

GFCM:WGBS8/2019/Dma.6 Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea (available in English and French)

Appendix 4

Opening address by Mr Simion Nicolaev

Chairperson of the Working Group on the Black Sea

Distinguished Delegates and representatives,
Dear colleagues,

Welcome!

Allow me first of all to thank once again the hosting country, Turkey, for their hospitality and for all the efforts they're making to secure excellent conditions for us to work in. After a busy benchmark session for turbot and the BlackSea4Fish Project Steering Committee meeting, I am pleased to welcome you all to the eighth meeting of the GFCM Working Group on the Black Sea, where we will take stock of our progress in the past year and compile the scientific advice to be submitted to the annual session of the GFCM in less than two months' time. Since our last meeting in 2018 we have done a lot and have a lot on our plate to examine during these days. The WGBS is now a strong advisory body for the Black Sea, which has been growing steadily since its establishment, ensuring our resources are well assessed, and the best advice is provided for their management and conservation. For this reason, I wish to commend all riparian countries for your participation and commitment, during the year and all the way through your presence at this meeting.

This might have been the fullest year for the WGBS yet, in terms of total number of activities but also in the number of new actions carried-out. This can be attributed to the institutional commitment to foster the sustainability of Black Sea fisheries and aquaculture as renewed by Black Sea countries when signing the Sofia Ministerial Declaration last year, but also to the BlackSea4Fish project.

As we saw from the presentation this morning, the project has been operating at high pace, especially in areas where specific support was needed and requested, such as stock assessment, age reading, training and data collection. Not only multiple meetings and workshops, but also capacity-building for Black Sea experts and ad-hoc work to improve knowledge on important species, such as Rapa whelk, for which specific activities under the research programme adopted by the Commission were launched. Relevant mid-term strategy activities such as the discards monitoring programme and the socio-economic survey were launched in this last intersession or are about to be launched in some Black Sea countries, for which results are expected in 2020 and will hopefully fill important identified gaps in knowledge.

All of this was possible thanks to the leadership of the BlackSea4Fish Coordinator and his team, the backstopping of the Secretariat, the active participation of experts as well as the precious support of donors, in particular the European Commission, as well as the important in-kind contribution of countries to given actions, such as in the case of Turkey with surveys-at-sea. The Government of Bulgaria also greatly supported the work of the WGBS and BlackSea4Fish by further equipping the GFCM Black Sea Unit in Burgas, instrumental in better supporting ongoing initiatives from within the region. I would like therefore to take this occasion to thank you all very much, as you allowed this project, and indirectly this working group, to achieve many of its objectives and to lay the ground for much more.

Despite evident progress and a lot more focus put on Black Sea priorities, including since the establishment of the BlackSea4Fish Project, challenges, linked to capacity-building and training, how to pursue and capitalize on recent progress, secure cross-cutting collaboration and effectively manage our resources, remain.

That is why the work of the WGBS in general and during this week in particular is crucial. We have multiple issues to address and I invite you all to contribute constructively to ensure we compile qualitative and coherent proposals for submission to the GFCM annual session. I count on all of you in this endeavor and I wish you a fruitful meeting. Thank you for your kind attention.

Appendix 5

Scientific advice on the status of the stocks assessed, including SGSABS comments

GSA	Species	Methods	Time series of catches used in the final model	$F_{current}$ *$E_{current}$	F_{unique} *E=0.4	F/F_{unique} *E/E=0.4	$B_{current}$	B_{MSY} *B_{pa} **B_{lim}	B/B_{MSY} *B/B_{pa} **B/B_{lim}	Stock status	Scientific advice	Comments (SGSABS/WGBS)
29	Turbot (*Scophthalmus maximus*)	SAM	1950-2018	0.44	-	-	3263 tonnes	-	-	In overexploitation	Reduce fishing mortality	WGBS: Reference points need to be revised, but a range of the existing ones is used to provide advice. F/FMSY is higher than 1 [1.7 – 3.3] while biomass shows a positive trend (B/Bpa ranges between 0.66 – 1.42)
29	Black Sea anchovy (*E. encrasicolus ponticus*)	XSA	1988–2017	Fcurrent= 0.75 *Ecurrent=0.46	*0.4	*1.16	621991	-	-	In overexploitation	Reduce fishing mortality	The final assessment was carried out with the same settings as in 2017. Issues were identified to be tackled during the benchmark, including: i) the use of additional time series (surveys) to tune the models; ii) the resolution of problems related to ageing of this species towards improving the age length-key; iii) the standardization of the nominal Turkish CPUE dataset; and iv) further investigating the use of a SAM model.

GSA	Species	Methods	Time series of catches used in the final model	$F_{current}$ *$E_{current}$	F_{unique} *E=0.4	F/F_{unique} *E/E=0.4	$B_{current}$	B_{MSY} *B_{pa} **B_{lim}	B/B_{MSY} *B/B_{pa} **B/B_{lim}	Stock status	Scientific advice	Comments (SGSABS/WGBS)
29	Piked dogfish (*Squalus acanthias*)	XSA	1989–2017	-	-	-	-	-	-	Depleted	Implement a recovery plan	An XSA model was run with different setting compared to 2017: i) the removal of an unrealistic spike in recruitment in 2000; and ii) the creation for a 10- group to include all fish younger than 10 that appeared in the most recent year of the tuning index. Some ages were completely missing in the input data owing to the fact they are not present in the population – this could be improved through improved data collection. As in 2017, the assessment relied on biological information from Romanian surveys only generating strong uncertainties and prompting the group to provide precautionary advice. Catches for the Russian Federation and Bulgaria were updated and no catch data were available for Georgia; dogfish is protected in Turkish waters. The F current estimated by the model was nearly 9.6 times higher than the calculated Funique assumed in 2017 (F_{unique} from ICES 2014). The population was still considered depleted due to the very low presence in the catches and a large decrease in estimated biomass. F should be reduced by more than 90 percent.
29	European Sprat (*Sprattus sprattus*)	XSA	1997–2017							Uncertain	Do not increase fishing mortality	The benchmark assessment (separate report) investigated four different models (ICA, SAM, XSA and separable VPA). The group agreed to move on from using ICA but expressed difficulties in selecting SAM or XSA - the benchmark session was extended to the rest of the intersession in order to address the intricacies of the SAM model and as well as address the use of a time-varying weight-at-age matrix. Temporary precautionary advice was provided.

GSA	Species	Methods	Time series of catches used in the final model	$F_{current}$ *$E_{current}$	F_{unique} *E=0.4	F/F_{unique} *E/E=0.4	$B_{current}$	B_{MSY} *B_{pa} **B_{lim}	B/B_{MSY} *B/B_{pa} **B/B_{lim}	Stock status	Scientific advice	Comments (SGSABS/WGBS)
29	Horse mackerel (*Trachurus mediterraneus ponticus*)	XSA	2005–2017				-	-	-	In overexploitation	Reduce fishing mortality	Precautionary advice was given on the status of the stock, owing to issues related to trends in residuals and retrospective patterns. The assessment was run under different combinations of rage and qage and a sensitivity analysis was performed on shrinkage, in a configuration similar to 2017, with an additional year of data. The use of a nominal CPUE index (sliced into ages using a catch at age matrix from the catches themselves) from Turkey to tune the XSA model was, once again, challenged stressing the need to standardize it and to collect fishery-independent information from the whole Black Sea in the future. Information from Georgia was requested for future stock assessments. The inclusion of information on discards in the future was encouraged.
29	Red mullet (*Mullus barbatus*)	XSA	1990–2017	-	-	-	-	-	-	Uncertain with signals of overexploitation	Reduce fishing mortality	This assessment advanced on that presented last year correcting assumptions on natural mortality and the calculation of Fbar (from 2–5 to 1–3). Significant issues were found with the tuning index used, for which data were not available for 2016 and 2017 making it tricky to run the model. A need for a final solution of previously identified issues was underlined. The data quality was deemed only useful for the provision of precautionary advice, but the assessment presented worrying trends with high catches in the final years so the advice was to reduce fishing mortality on precautionary grounds.
29	Whiting (*Merlangius merlangus*)	XSA	1994–2017	-	-	-	-	-	-	In overexploitation	Reduce fishing mortality	The 2018 assessment was an update of the 2017 assessment carried out using an extra year of data. The complete absence of age 0 individuals in the 2017 catches, along with very poor internal and external consistency of all data-at-age (catches and

GSA	Species	Methods	Time series of catches used in the final model	$F_{current}$ *$E_{current}$	F_{unique} *E=0.4	F/F_{unique} *E/E=0.4	$B_{current}$	B_{MSY} *B_{pa} **B_{lim}	B/B_{MSY} *B/B_{pa} **B/B_{lim}	Stock status	Scientific advice	Comments (SGSABS/WGBS)
												surveys alike), prevented any of the models from converging. Uncertainties at the level of discards remained so these crucial data were not included. The SGSABS agreed on providing precautionary advice for this species based on the advice formulated in 2017 (reduce fishing mortality). Future work should consider using length data to derive ages through slicing exercises while working on improving information on discards and ageing.
29	Rapa whelk (*Rapana venosa*)	VIT SPiCT	1991–2017	-	-	-	-	-	-	Around MSY	Care should be taken in expanding this fishery	Uncertainty in data quality was a big issue for the determination of stock status in 2018, especially related to the length frequency distributions of catches. Advice given was precautionary and only indicative of the status of the stock pending revision and improvement of input data. Twelve length cohort analyses were run with VIT on 2017 data only: one with three fleets and three with separate fleets for Romania+Bulgaria, Turkey and Ukraine, under different assumptions of terminal F (0.2, 0.5 and 0.8). A SPiCT model with landings and nominal CPUEs for Turkey and Bulgaria was also run but resulted in very uncertain results owing to the lack of contrast in the time series. These tentative results showed that the rapa whelk stock was fluctuating around MSY, with the SPiCT model suggesting a fully exploited stock and the VIT runs indicating it was overexploited in 2017.

Appendix 6

Proposed multiannual planning of benchmark sessions in the WGBS
(benchmark sessions denoted in blue)

	Species	2019/2020	2020/2021	2021/2022	2022/2023
Small pelagic stocks	Black Sea anchovy	Preceded by data preparation and training of experts			
	European sprat	Training of experts + finalization			
	Horse mackerel		Preceded by data preparation		
Demersal stocks	Turbot		Reference point estimation		
	Whiting				Preceded by data preparation
	Red mullet			Preceded by data preparation	
	Rapa whelk			Preceded by data preparation	
	Piked dogfish		Preceded by data preparation		

Appendix 7

Terms of Reference for select meetings

Appendix 7/a

Terms of Reference for the benchmark assessments of anchovy

General provisions

The benchmarking process is built on the expertise of stock and ecosystem knowledge, involving the best available scientific competence and relying on the integration of such knowledge for the different aspects. During this process, all available information, e.g. ecosystem and fisheries data, stock distribution, assessment models, forecast methods and reference points, is reviewed, compared, tested and finally agreed upon by the experts.

A benchmark assessment can be viewed as a full analysis and review of the data, methods and assumptions used to provide advice on the status of a given stock, focusing on the consideration of old and new data sources as well as newer or improved assessment models and assumptions. In particular, the benchmark process should include:

- the identification of all problems associated to the assessment of a resource (including stock boundaries, data, assumptions and methodologies);
- the identification and provision of extra data required to address the above problems (besides the typical data and parameters also those based, for example, on different spatial aggregations and/or environmental variables);
- the revision and agreement of data, assumptions (including all biological parameters and related estimation methods), standardization of fishery-independent data and assessment methods proposed for the assessment;
- the test of the candidate methods with a sensitivity analysis on different assumptions; and
- the performance of the assessment.

The benchmark will be attended by stock experts as well as by methodological experts from the sub-region, as well as by external experts, thus providing a framework for broadening the ideas in play, ensuring a high level of scientific expertise and thus the quality of the advice. Following a benchmark assessment, all historical data, assumptions and models will be fixed for the following three – four years and assessments presented in this time period will simply provide updates.

In order to ensure a successful benchmark exercise, intensive preparatory work should be done at CPC level (compiling all information requested) and by the experts (reviewing potential models and listing existing assumptions, while making available common tools for data checks and aggregation of data, and/or parameters in case of combination of different subareas).

Black Sea anchovy

The benchmark of Black Sea anchovy should take place in the 2019/2020 intersession and should focus, in particular, on the following aspects:

- the use of additional time series (acoustic surveys) to tune the models;
- the resolution of problems related to ageing of this species towards improving the age length-key;
- the standardization of the nominal Turkish CPUE dataset; and
- estimation of reference points.

In order to fulfill the above objectives, all available data by country should be put on the table for analysis towards optimizing their use and increasing the quality of advice, with particular reference to:

- available data on length frequency distributions of catch and surveys;
- available data on surveys, in particular acoustic surveys that have been collected but not analyzed yet as well as new ones; and
- available data to standardize tuning indices (e.g. CPUE), e.g. environmental data, VMS data, fishery and fleet data.

Appendix 7/B

Terms of reference for the meeting targeting the estimation of Biological Reference Points for the Black Sea fish stocks

A group on Biological Reference Points for commercially exploited Black Sea stocks will be established and will meet in the technical unit of GFCM in Burgas, Bulgaria before the Subregional Group on Stock Assessment for the Black Sea (SGSABS; February 2020) to:

a) review the framework for calculating biological reference points (BRPs; point estimates for BMSY, BTHRESHOLD, FMSY and MSY, or their proxies) established for similar stocks in the GFCM (and ICES) area;
b) specify the technical basis for the reference point calculations;
c) consider effects of environmental factors on stability of reference points and implications for stock status.;
d) propose reference points based on a) b) and c) and provide estimates of their uncertainty; and
e) In the event that estimation is not reached, formulate different alternatives and compare.

Appendix 8

Abstracts of presentations for the session on Turbot TAC in the Black Sea

EU turbot fisheries in the Black Sea

This document aims to provide a factual insight into the importance of this resource for the European fishing sectors and EU coastal communities in the Black Sea.

Socioeconomics

- Bulgaria and Romania, both EU Member States are exploiting turbot.
- In 2018, the catches of Black Sea turbot by the European Union amounted to 112 t, or 44,62 percent of the GFCM Contracting Parties catches of turbot, or 17 percent of the overall Black Sea turbot catches according to the data reported by all Black Sea States for the 2019 benchmark stock assessment.
- In 2018, around 170 fishing vessels have been authorized and involved to turbot fisheries, with annual landings worth approximately € 3,3 million.
- The EU operators involved in this fishery often rely primarily on this stock and have few other fishing opportunities, in particular following the implementation of the autonomous Total Allowable Catch (TAC) of the EU from 2008 onwards for the conservation of the stock. The economic dependency of the fleet with the turbot stock is high. In fact, a noticeable shift of the fishing effort took place recently from the turbot to rapana fisheries.
- The fishing activities for Black Sea turbot sustain directly around 400 jobs *(292 FTE)* with additional ancillary *jobs* in coastal areas. In the trade flow, turbot is an exported species for Bulgaria.

Artisanal Fisheries

- The EU turbot fishing sector in the Black Sea is more than 50 percent artisanal sector, with vessels under 12m in length overall.
- These are small scale artisanal and family owned vessels, operating essentially in coastal areas and landing in the 18 designated ports in both, Bulgaria and Romania.
- The EU turbot fisheries in the Black Sea is traditional and reflects the historical dependency of the coastal populations on this resource. This supports a local network of economic activities in coastal areas, conferring on this fishery a significant socioeconomic importance.

Promotion of Conservation Measures

The last twelve years, faced with the alarming state of the stock, the EU Member States have implemented a range of management and conservation and control measures, before the measures adopted in the GFCM the past few years, but also going far beyond these measures.

- The EU was managing the stock in the EU waters with the system of setting fishing opportunities in the Black Sea for Bulgaria and Romania that was implemented for the first time by EU legislation in 2008. Following the precautionary approach, an autonomous turbot TAC has been set for both Member States based on the scientific advice. Following the scientific advice, a 25 percent (from 100 t to 75 t) considerable decrease of the TAC was made in 2010. This was possible due to the efforts of the fishing sectors that significantly suffered from the loss.
- In terms of fishing capacity, the EU member States have operated considerable reductions of their fishing capacity. In Bulgaria, 27 percent decrease of fishing vessels number, resulted in decrease of tonnage and power. The segment 18–24 m was substantially decreased and significantly the segment 6–12 m.
- Fishing effort limitation is applied, irrespective of the vessels' length overall, not exceeding 180 fishing days per year. Turbot fishing authorizations are granted to fishing vessels to engage in turbot fisheries.
- From 2008 onwards, with regard to the protection of turbot spawners, the EU Member States implement a two-month fisheries closure (15 April to 15 June).
- Regarding the protection of turbot juveniles, the EU Member States were applying a minimum landing size of 45 cm length.
- The Bulgarian and Romanian fishing fleets have implemented technical measures and also adjusted their fishing methods which resulted in a significant reduction of the proportion of

juveniles being caught. In 2009, the minimum legal mesh size for bottom-set nets used to catch turbot has been regulated to 400 mm.

Control and Compliance

At the EU level, a core element is the implementation of an *extensive control framework* adopted under the Regulation (EU) 1224/2009 and currently under revision. The existing EU rules go significantly further than the GFCM requirements in terms of control and allow ensuring the legality of the catches and compliance to conservation measures. It imposes specific control requirements on European Member States and their fishing operators. The provisions of EU Regulations 1224/2009 are minimum requirements for the European fishing vessels.

- The EU Member States are also implementing additional measures with regard to the obligation to carry VMS and ERS, in order to facilitate the control and the accuracy of the catches reporting.
- In the case of turbot fisheries in the Black Sea, the EU Member States are implementing stricter measures that go further the rules, i.e. recording of all catches with no exemption in corresponding logbooks, landing declarations and sales notes of all authorised vessels.
- The EU Member States must operate a satellite-based vessel monitoring system for effective monitoring of fishing activities of the fishing vessels flying their flag wherever those vessels may be and of fishing activities in the Member States' waters. This applies to vessels of 12m length overall, with a transmission frequency of two hours. In addition, Member States are obliged to operate Fisheries Monitoring Centres and to monitor fishing activities and fishing effort.
- The EU Member States implement a comprehensive and extensive EU control framework which regulates the fishing operations chain from "the net to the plate'', i.e. completion and submission of the fishing logbook, electronic completion and transmission of fishing logbook data, prior notification, completion and transmission of landing declaration data, traceability, first sale of fishery products, weighing of fishery products, completion and submission of sales notes, take-over declaration, completion and submission of the transport document.

The EU invests significant amount of means and resources, financial and human, to monitor and control turbot fishing activities in the Black Sea. A dedicated joint deployment plan is implemented in the Black Sea by Bulgaria and Romania under the coordination of the European Fisheries Control Agency. The EU efforts on control, inspection and surveillance have resulted in 2019, up to date, in 36 days at land, 78 days at sea, 82 sightings and 1.655 inspections.

Turbot fisheries management in Turkey (Erdinç Güneş, Erdal Üstündağ)

Turkey's efforts on effective conservation and sustainable exploitation of turbot stocks date back to the 1970s. For example, minimum landing size was adopted for the first time in 1969 as 36 cm (SL). Turkey devotes a lot of effort in implementing the measures established by GFCM with respect to turbot fisheries management. In this regard, Turkey updated its legislation in accordance with the GFCM recommendations and applied in some cases stricter rules than those defined in these recommendation. Such as;

- Active vessels targeting turbot have to have an obligatory valid special fishing authorization.
- It is prohibited to land any quantity of turbot fished at any other place than the designated landing points.
- The minimum legal mesh size for bottom-set nets used to catch turbot is 400 mm.
- The minimum landing size for turbot is 45 cm total length.
- All vessels above 12 meters length overall equipped with VMS.
- Fishing of turbot with any type of fishing gear and leaving turbot nets (bottom set gill net) in sea is forbidden between 15th of April and 15th of June.
- Fishing gear prohibitions; longlines in 1989, trammel nets in 2000 and monofilament nets in 2008.
- Landing or retention of turbot by-catch originating from rapana beam trawls is prohibited.

When the FAO historical turbot catch figures of the Riparian countries are taken into account, it is seen that Turkey's catch amount has significantly decreased. The ban on trammel nets is one of most important reasons for the severe drop of this catch amount. Despites decreasing catches, Turkey has continued to implement all above-mentioned measures to ensure the stop of the stock decrease.

In addition to measures put into effect, other efforts are made by Turkey to protect and recover decreasing turbot stocks. For this purpose, the turbot Stock Enhancement Program was launched in 1999. Up to now, 120 thousand turbot juveniles were individually tagged and released into Turkish Black Sea coast. Moreover, in order to decrease fishing effort on fish stocks including turbot, a decommissioning scheme was implemented in the period of 2013–2018 by reducing the number of active fishing vessels of 10 m length and over. In this context, 1.264 vessels (licenses) were removed from the fleet. The majority of these vessels are 10-12 meters and registered at the ports in the Black Sea. Furthermore, Turkey has launched another Program in order to increase the data quality and improve the flow of data from small scale fishery and ensure compliance with the GFCM's multiannual turbot management plan. This program is ongoing.

There are 14 thousand marine fishing vessels below 12 meters in Turkey. 8 thousand of these vessels are fishing in the Black Sea. Turkey has authorized about 1 thousand fishing vessels for catching turbot in 2018. It means, 7 thousand vessels which have potential to catch turbot could not benefit from this opportunity. According to data obtained from three studies, monthly gross profit per small scale vessel is around 300-400 Euros which close to minimum wage in Turkey.

As a consequence of stringent and effective conservation measures taken in accordance with GFCM recommendations, Turkey is the country whose fishers have suffered the most, socially and economically.

The state of Turbot stock in the Ukrainian zone of the Black Sea (Yevhen Leonchyk, Bohdan Hulak)

The geographic features of the Black Sea create the preconditions for considering the turbot population of the northwestern part as a separate stock unit due to natural barriers surrounded the large shelf area. As shown by the results of tagging, carried out by YugNIRO 45 years ago, turbot individuals perform very small migrations along the marine shelf. This supports a large difference between the state of the population in the northern and southern parts of the Sea split by the deep-water zone with the hydrogen sulfide. In addition, there are several factors contributing to a better state of the population in the Ukrainian part of the Black Sea:

- the northern part of the sea is characterized by the presence of the largest shallow water shelf on which the turbot can breed and feed on various small fishes;
- bottom trawling is completely prohibited in Ukraine. Only in 2018, a small group of ten Ukrainian vessels was allowed to use beam trawls for the rapa whelk experimental fishing. As these experiments showed, the by-catch of turbot juveniles in these gears is very high. At the same time, beam trawls have been used on several hundred vessels in the southern part of the Sea over the past 20 years, which undoubtedly negatively affects the turbot stock recruitment;
- fisheries protection measures are quite strict, there is a lot of restrictions on gears and fishing areas in Ukraine.

The state of turbot stock has been getting better in the northwestern part since 2016. The landings corresponded to the highest values for the last 35 years and CPUEs were at a stable high level. Moreover, there was growth of numbers in the big size groups and average turbot weight has been increasing during the recent years.

Thus, it makes sense to assess the turbot stock in the northwestern part separately from the entire Black Sea. Such assessment was carried out using the Ukrainian, Romanian and Russian catches and tuning indices. Stock Synthesis model allows specifying the different source of data, providing different uncertainty estimates for each data set. In according to SS3 analysis, the fishing mortality rates decreased in 2017 and 2018 and reached the minimum level for the last years. By comparison, it was approximately twofold less than for the entire Black Sea. The cumulative SPR (Spawner Potential Rate) index was 0.27 that was approximately equal to SPRMSY = 0.25 and one and a half higher than SPR = 0.18 for the entire Black Sea.

Turbot stock was a subject of high overfishing in the Black Sea, resulting in a fisheries collapse in the 1980's. Nowadays, it is mostly moderate exploited at the level close to the management target point in the northwestern part. Thus, the fishery mortality rate should not be increased; all by-catches of small size specimens with beam trawls and IUU catches must be minimized to maintain viable population of the Black Sea turbot.

Appendix 9

Management scenario of turbot TAC and quotas following the criteria agreed in the WGBS (proposal coordinated by the EU)

Possible allocation scenario

Turbot TAC and allocation key				
	2020	**2021**	**2022**	
CPCs	**Quotas**	**Quotas**	**Quotas**	**share %**
EU	150	150	150	17,5
TR	497	497	497	58,0
UA	160	160	160	18,7
GE	20	20	20	2,3
Other	30	30	30	3,5
Total	**857**	**857**	**857**	**100,0**

TAC

1. **Criteria for the establishment of the TAC**

- Scientific advice – precautionary approach
- Fishing pattern
- IUU activity
- Stability of the TAC- 3 years with a review clause, based on the monitoring of the status of the stock

2. **Allocation scheme**

- Status of the participants (be a contracting party or a cooperating non-contracting party)
- Historical catches of qualified participants
- Record of the compliance or cooperation of the qualifying participant with the current GFCM management plan of Turbot.
- The contribution of qualifying participants to conservation and management of the stocks, to the collection and provision of accurate data required by GFCM and taking into account their respective capacities, to the conduct of scientific research on the stock.

The allocation criteria should be applied in a manner that encourages "others' to become contracting party or non-coopearing contracting party.

3. Additional elements

- Review clause based on the scientific advice and if an ‘’other’’ becomes contacting or cooperating party
- Estimation of the reference points by the WGBS to be adopted by the GFCM Commission in 2022
- Regular catch reports to the GFCM Secretariat
- Exhaustion of quotas – closure of fishery by CPCs and communication to the GFCM Secretariat in order to inform all CPCs
- Payback system with penalty:
  (a) If the total catches exceed the TAC in a given year the excess amount shall be paid back by CPCs. The excess amount shall be deducted the following year from the quota of the CPC concerned.
  (b) If any CPC exceeds the quota during any two consecutive years the GFCM recommend a reduction in the quota to a minimum of 125% of the excess harvest.
- Transfer system – transfer limited to 15% to next year. The maximum undertake that a CPC may carry over in any given year shall not exceed 15% of its annual initial quota.
- Working Group in order to develop a pilot project for a catch certification scheme to ensure the full traceability of turbot catches

Appendix 10

National reports to WGBS

BULGARIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29 - Black Sea

B. Total landings: 8546 tonnes (2018) ; 8512 tonnes (2017); 8561 tonnes (2016); 8735 tonnes (2015); 8547 tonnes (2014); 9507 tonnes (2013)

Main 10 species landed

C. Fleet: 1857 vessels (2018); 1880 vessels (2017); 1910 vessels (2016); 1970 vessels (2015)
Total GT: 6087 (2018); 6081 (2017); 6367 (2016)
AVG LOA: 7.1 m (2018)
Min LOA: 2.7 m
Max LOA: 27.2 m
AVG LOA previous year: 7.1 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sprattus sprattus	2017	Sustainably exploited	29	Y	N
Psetta maxima	2017	Overexploited	29	Y	N
Engraulis encrasicolus	2017	Overexploited	29	Y	N
Trachurus mediterraneus	2017	Overexploited	29	Y	N
Mullus barbatus	2017	Overexploited	29	Y	N
Merlangius merlangius	2017	Overexploited	29	Y	N
Squalus acanthias	2017	Depleted	29	Y	N
Rapana venosa	2017	Overexploited	29	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Executive Agency for Fisheries and Aquaculture, Bulgaria developed and implemented two informational systems to serve the needs of different management and operative levels – Information Statistical System (ISS) and Vessels Monitoring System (VMS). The information-statistics system (ISS) of EAFA Bulgaria has been created in relation with the engagements of Bulgaria, based on the EU legislation, which after the country`s accession to the EU (01.01.2007) became compulsory. This system contains information about catches, landings, sales, aquaculture production, take-over declarations, etc. With ISS creation centralized collection and storage of the information have been initiated. The data are in a numerical format which is base for:

- Check of confidentiality of the input data;
- Analysis of data and possibility to detect the unconformities;
- Control on the activities;
- Data summarize aiming the presentation to the EU and other international and national organizations.

EAFA supports trough ISS the following registers:

- Register of the fishing licenses and authorizations issued;
- Register of the issued tickets for recreational fishery;
- Register of the persons, dealing with aquaculture;
- Fishing fleet register;
- First sale auctions register;
- Registered buyers register;
- Register of the fishermen with competence certificate;
- Register of Fishery permissions for scientific purposes;
- Register of licensed fishermen;
- Register of protocols of findings, acts for establishing an administrative offense and penal rulings issued by the authorized staff of the EAFA.

Through VMS the proper monitoring of fishing vessels is ensured. All vessels over 12 m flying under Bulgarian flag are equipped with VMS device. Moreover, vessels less than 12 m, targeting turbot are also equipped with a device, allowing their tracking and connected with our FMC.

At the end of 2016, as part of ISS of EAFA, was developed a module for data collection and storage for fishing activity variables, social and economic variables for the fleet. In the module exist the opportunity for processing, providing automated exchange and providing electronic reports. The electronic reports generated by the module have been built in accordance with the requirements of the DCF and the variables described in EU MAP

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture	Executive Agency for Fisheries and Aquaculture

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Pelagic trawl survey and demersal trawl survey	Stock assessment	2015	2019
Survey for sampling of fishing activities by observers on board	Marine environment and conservation	2017	2019

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
	BlackSea4Fish	2017	Stock assessment, Data collection and statistics, Socio-economics, Marine environment and conservation

Section 6 - Management measures taken in direct response to GFCM decisions

Title III, Section IV: "Aquaculture" of the Fisheries and Aquaculture Act; Art. 16 of Fisheries and Aquaculture Act.	REC.DIR-GFCM/41/2017/1
The Fisheries and Aquaculture Act creates a national framework for licenses and authorizations.	REC.CM-GFCM/41/2017/4
No national legislation in place. We apply directly the EU legislation in that field.	REC.DIR-GFCM/41/2017/6
The Fisheries and Aquaculture Act.	REC.MCS-GFCM/41/2017/7
No national legislation in place. We apply directly the EU legislation in that field.	REC.MCS-GFCM/40/2016/1
No national legislation in place. We apply directly the EU legislation in that field.	REC.DIR-GFCM/40/2016/2
No national legislation in place. We apply directly the EU legislation in that field.	REC.CM-GFCM/40/2016/6
No national legislation in place. We apply directly the EU legislation in that field.	REC.CM-GFCM/39/2015/3
No national legislation in place. We apply directly the EU legislation in that field.	REC-CM-GFCM/39/2015/4
No national legislation in place. We apply directly the EU legislation in that field.	REC-CM-GFCM/42/2018/2
No national legislation in place. We apply directly the EU legislation in that field.	REC-CM-GFCM/42/2018/9
No national legislation in place. We apply directly the EU legislation in that field.	REC-CM-GFCM/42/2018/10

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Species	N. Specimen	Date	Fleet Segment	GSA	Fishing gear	Main Target Species
Phocoena phocoena	1	03/07/2018	E- Trawlers (12-24m)	29	Fixed gillnets (on stakes)	Psetta maxima

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Survey at sea for evaluation of biomass of piked dogfish
Survey at sea for evaluation of biomass of Rapa Whelk
Survey at sea for evaluation of biomass of white sand clams as *Chamelea galina*

ROMANIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29 – Black Sea

B. Total landings: 7445 tonnes (2018) ; 9553 tonnes (2017); 6839 tonnes (2016); 4825 tonnes (2015); 2231 tonnes (2014); 1712 tonnes (2013)

Main 10 species landed

Species	***Tons***
Rapana venosa	7330.3
Mytilus galloprovincialis	230.6
Psetta maxima	57.6
Trachurus mediterraneus	29.1
Sprattus sprattus	32
Engraulis encrasicolus	31.5
Gobiidae	6.4
Alosa spp	4.7
Dasyatis pastinaca	3.1
Mullus barbatus	7.5
Pomatomus saltatrix	5.2
Belone belone	3.8

C. Fleet: 136 vessels (2018); 135 vessels (2017); 121 vessels (2016); 127 vessels (2015)
Total kW: 6109 (2018); 6104 (2017); 5366 (2016)
Total GT: 1402.85 (2018); 1377.39 (2017); 1009.79 (2016)
AVG LOA: 9.2 m (2018)
Min LOA: 5.23 m
Max LOA: 25.75 m
AVG LOA previous year: 9.1 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sprattus sprattus	2017	In sustainable exploitation	29	Y	Y
Psetta maxima	2017	In sustainable exploitation	29	Y	Y

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Fisheries data obtained in the different projects by NIMRD are incorporated in database of institute. Reports and data are transmitted to Romanian NAFA in the frame of National Data Collection Program. In the same Program, fisheries data are uploaded in JRC data base. In parallel way, National Fisheries Report prepared in agreed format is prepared and transmitted annually to the Black Sea Commission. Full information on capacity indicators is available through the FFR. Therefore only this information source has been used. So, the data have been collected in an exhaustive way by NAFA inspectors from the logbooks, for vessels and coastal logbooks, for small boats. This method ensures 100 percent coverage of the population and maximum level of quality. With the help of the NAFA statistics/collecting data system are performed crosscheck verifications between the logbooks, declarations of origin and (first) sales notes of fish and other aquatic organisms and reports. As described above mentioned, the exhaustive method used ensure the maximum quality level of collected data.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)	National Institute for Marine Research and Development "Grigore Antipa" Constanta (www.rmri.ro)

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
BlackSea4Fish project	Stock assessment	2018	2020

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
	BlackSea4Fish	2018	Stock assessment, Data collection and statistics

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Stock assessment and marine environment protection

TURKEY[2]

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29 – Black Sea

B. Total landings: : 176277 tonnes (2018); 235853 tonnes (2017); 223085 tonnes (2016); 320582 tonnes (2015)

Main 10 species landed

Species	***Tons***
Engraulis encrasicolus	42690 (133767 reported in 2017)
Sprattus sprattus	20056.6
Sarda sarda	28630.7
Chamelea gallina	44532.8
Merlangius merlangus	5986.9
Rapana venosa	9188.9
Pomatomus saltatrix	4709
Trachurus mediterraneus	15382.1
Mullus surmuletus	2656.4
Engraulis encrasicolus	42690 (93164 reported in 2017)
Sprattus sprattus	20056.6
Sarda sarda	28630.7
Chamelea gallina	44532.8
Merlangius merlangus	5986.9
Rapana venosa	9188.9
Pomatomus saltatrix	9311
Trachurus mediterraneus	11681.4
Mullus surmuletus	2305.8
Pomatomus saltatrix	4709

C. Fleet: 7290 vessels (2018) ; 7317 vessels (2017) **;**
Total kW: 612271 (2018) ; 608235 (2017) ;
Total GT: 89133 (2018) ; 93189 (2017) ;
AVG LOA: 8.5 m (2018)
Min LOA: 2.6 m
Max LOA: 62 m
AVG LOA (previous year): 8.5 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sprattus sprattus	2017	Uncertain	29	Y	Y
Psetta maxima	2018	In overexploitation	29	Y	Y
Mullus barbatus	2017	Uncertain with signals of overexploitation	29	Y	Y
Engraulis encrasicolus	2017	In overexploitation	29	Y	Y
Trachurus trachurus	2017	In overexploitation	29	Y	Y
Squalus acanthias	2017	In overexploitation	29	Y	Y
Merlangius merlangus	2017	In overexploitation	29	Y	Y
Rapana venosa	2017	Around MSY	29	Y	Y
Sprattus sprattus	2016	In sustainable exploitation	29	Y	Y
Psetta maxima	2016	In overexploitation	29	Y	Y
Mullus barbatus	2016	In overexploitation	29	Y	Y
Engraulis encrasicolus	2016	In overexploitation	29	Y	Y
Trachurus trachurus	2016	In overexploitation	29	Y	Y
Squalus acanthias	2016	In overexploitation	29	Y	Y
Merlangius merlangus	2016	In overexploitation	29	Y	Y
Raja clavata	2016	In overexploitation	29	N	Y
Rapana venosa	2016	In sustainable exploitation with biomass above reference points	29	Y	Y

[2] Only information regarding Black Sea fisheries is submitted by Turkey to the WGBS, where relevant.

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Fisheries data have been collected by Turkish Statistics Institute (TurkStat) and Ministry of Agriculture and Forestry MoAF)..

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
TurkStat (in collabration with MoAF)	TurkStat (in collabration with MoAF)	MoAF	MoAF	TurkStat and MoAF	TurkStat	MoAF

Section 4 - Status of research in progress (or recently concluded)

Section 5 - Involvement in activities of FAO regional projects

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Notification 4/1 Regulating Commercial Fishing	REC.CM-GFCM/41/2017/4; REC.CM-GFCM/40/2016/6; REC.CM-GFCM/39/2015/3; REC-CM-GFCM/39/2015/4; REC.CM-GFCM/42/2018/9; REC.CM-GFCM/37/2013/2; REC.CM-GFCM/35/2011/4; REC.CM-GFCM/35/2011/5; REC.CM-GFCM/36/2012/3; REC.CM-GFCM/36/2012/2

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

UKRAINE

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29 – Black Sea

B. Total landings: 8613 tonnes (2018) ; 5253 tonnes (2017); 3700 tonnes (2016); 2794 tonnes (2015)

Main 10 species landed

Species	***Tons***
Sprattus sprattus	1602.7
Atherina boyeri	188.9
Psetta maxima	123.1
Liza aurata	54.5
Engraulis encrasicolus	72.5
Trachurus mediterraneus	7.1
Merlangius merlangus	13.4
Mullus barbatus	1.8
Squalus acanthias	0.8
Palaemon adspersus	507.1
Rapana venosa	5562
Mytilus galloprovincialis	334.3

C. Fleet: 247 vessels (2018); 247 vessels (2017); 222 vessels (2016); 222 vessels (2015)
Total kW: 14661 (2018); 2623 (2017); 2623 (2016)
Total GT: 1197 (2018); 1197 (2017); 1117 (2017); 1117 (2016)
AVG LOA: 7.1 m (2017)
Min LOA: 4.3 m
Max LOA: 28.6 m
AVG LOA (previous year): 7.1m 18.5 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sprattus sprattus	2017	In sustainable exploitation with biomass above reference points		Y	
Psetta maxima	2017	Overexploited		Y	
Engraulis encrasicolus	2017	In sustainable exploitation with biomass above reference points			
Squalus acanthias	2017	In overexploitation		Y	
Rapana venosa	2017	In sustainable exploitation with biomass above reference points		Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

The national authority on the field of fisheries is the State Agency of Fisheries of Ukraine (Kiev, Ukraine). State Agency of Fisheries collects and summarizes all statistical information on fisheries.
The State Agency of Fisheries of Ukraine has regional body in the Black Sea region - in Odessa city.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Each fishing company provides to the State Agency of Fisheries (passes through its body) data on landing (catches) by species for each month.	Catches for each fishing operation are indicated in the paper fishing log on each vessel, or in a team of fishermen with boats.	Nothing registration	The whole fleet including boats must have fishing licenses and documents certifying the right to sail in the sea. Information on the number and parameters of all fishing vessels and boats is in the State Agency of Fisheries	There is no reliable information on fishing efforts for the entire fleet. There are only some scientific observations for some types of fishing.	No reliable data	Collected and summarized by Odessa center YugNIRO

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Stock assessment for the marine biological resources of the Black Sea shelf zone, catch limits determination, forecasts of the allowable catches and development of an optimal regime of stocks exploitation.	Stock assessment for main commercial fishes and invertebrates and determination of TAC, forecasts and management measures.	2018	2018

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
	BlackSea4Fish		Data collection and statistics; Socio-economincs

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
The Black Sea Biosphere Reserve	Marine Protected Area (MPA)	1992
The Danube Biosphere Reserve	National Fisheries Restricted Area	1998
Zernov's Phyllophora field	Marine Protected Area (MPA)	2008
Beloberezhye Svyatoslava National Park	Marine Protected Area (MPA)	2009
National Nature Park "Dzharylgatskii	Marine Protected Area (MPA)	2009
Small Phyllophora Field	Marine Protected Area (MPA)	2012

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Population structure including age-size composition and spatial distribution in the sea of the most vulnerable fish species - turbot and sturgeons
Stock assessment for the main commercial fishes
The impact of alien species (Mnemiopsis leidyi, Rapa Whelk, etc.) on the Black Sea environment and fisheries