



**GENERAL FISHERIES COMMISSION FOR
THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE**



SCIENTIFIC ADVISORY COMMITTEE (SAC)

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**Proposal for a minimum structure of management plans for turbot fisheries
in the Black Sea**

**Proposed minimum structure, criteria and measures for multiannual management plans for
turbot fisheries in the Black Sea**

1. Scope of this proposal

A definition of the area covered by this proposal (the *Black Sea, GSA 29*) as well as the fisheries included in this proposal and species concerned (*target* and *associated* species) will be needed.

Target fisheries:

- bottom set gillnet,

Other fisheries affecting turbot:

- Bottom trawl,
- Rapana beam trawl and dredges
- Hydraulic dredges (venus)
- midwater trawls
- longlines for dogfish

Target species:

Turbot (*Psetta maxima*). The structure of Turbot population at Black Sea is uncertain (limit between populations, degree of mixing/independency). However, ecology, biology and fishing gears are similar through all the Black Sea, and similar issues exist in the different areas, including high fishing pressure (high fishing effort, overfishing and indirect mortality e.g. bycatch) and high IUU fishing pressure due to economic value. A main research priority should be improved knowledge on population structure, but this should not prevent common management framework.

Associated species:

Bottom gillnet:

- Cetaceans
- Picked dogfish
- Thornback ray
- Common stingray

2. Objectives

Two options could be considered: a common sub-regional management plan or a common management plan structure to be implemented through national management plans. Any discrepancies with national legislations should be evaluated.

Following the GFCM guidelines on management plans (GFCM/36/2012), and in agreement with the established roadmap for fighting IUU fishing, the regional plan should consider inter alia the following options:

To counteract and/or to prevent overfishing (both direct and indirect e.g. bycatch) with a view to ensure the sustainable economic viability of fisheries;

To restore, to the extent possible, the size of Black Sea turbot stocks at least at levels which can produce the maximum sustainable yield

To guarantee a low risk of stocks of the associated species falling outside safe biological limits;

To reduce the extent of IUU fishing on turbot.

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning;

Operational objectives

The plan should define, for each agreed objective, specific operational objectives that have practical interpretation, can clearly describe expected outcomes and can be measured with indicators. For example,

Objective

To restore, to the extent possible, the size of Black Sea turbot stocks at least at levels which can produce the maximum sustainable yield

Operational objective

- To restore the biomass of turbot above agreed precautionary biological reference points (e.g. $B > B_{\text{target}}$).

In the case that SAC has accepted different assessments for different areas, all of the accepted assessments should comply with this operational objective.

Objective

To counteract and/or to prevent overfishing (both direct and indirect e.g. bycatch) with a view to ensure the sustainable economic viability of fisheries;

Operational objective

- To maintain fishing mortality within agreed precautionary fishing mortality reference points (e.g. $F < F_{\text{target}}$)

In the case that SAC has accepted different assessments for different areas, all of the accepted assessments should comply with this operational objective. In the absence of an accepted assessment or a fishing mortality reference point, a precautionary limit should be established.

Objective

To guarantee a low risk of stocks of the associated species falling outside safe biological limits;

Operational objective

- To keep fishing mortality of the associated species at levels that allow them to be within safe biological limits.

Objective

To reduce the extent of IUU fishing on turbot.

Operational objective

- To implement by priority actions within the Roadmap for fighting IUU fishing (reference) which are relevant to turbot.
- To develop specific cooperation (exchange of information, training, port State measures) at Black Sea scale regarding control of turbot fishery

Objective

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning.

Operational objective

- To decrease discards of commercial and non-commercial species by (x)% in (y) years.
- To decrease the incidental catch of protected and endangered species.
- To reduce the amount of lost fishing gear and cage nets.

3. Indicators and reference points

The indicators and reference points accepted by the SAC should be used in the management plan.

In situations where stock biomass is used as indicator of status of the stock, the following reference points could be used:

B_{lim} : a biomass level which is considered undesirable and which management actions should avoid with high probability.

$B_{threshold}$: a threshold level of biomass established to reduce the probability that the limit reference point will be exceeded.

B_{target} : B_{msy} as a possible target reference point.

Spawning stock biomass: ratio between the spawning stock biomass and the total biomass.

In situations where fishing mortality is used as an indicator of fishing pressure, the following reference point could be used:

$F_{0.1}$: The fishing mortality rate at which the slope of the yield-per-recruit curve is only one-tenth the slope of the curve at its origin.

Concerning the objective of ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning, the following indicators and references points could be used:

Indicator	Reference point
Discard rate of undersized turbot and associated species (%)	- Historical - Trend (% over time)
Bycatch of protected/endangered species	- Historical - Trend (% over time)
Lost and abandoned	- Recovery of a number of lost/abandoned gears - Trend (% over time)

Indicators for environmental and other anthropogenic effects on the fishery

Considering the relevance of external impacts on the performance of fisheries management, the plan should indicate a set of indicators to be monitored in connection to known environmental and other anthropogenic effects on the stocks. For turbot, the following indicators of environmental status are considered important:

- Water temperature in the spawning period
- Water temperature stratification
- Spatial extent of hypoxia

4. Fisheries management measures

In order to reach the objectives of the management plan, and without prejudice to stricter measures adopted nationally, countries should consider the adoption of the following minimum conservation measures for the turbot fisheries covered by this plan.

Management tools	Potential measures	Rank (effectiveness)
Spatial restrictions	Areas restricted to trawling	High
	Areas restricted to gillnet fisheries	High
	Areas restricted to other fisheries catching turbot as bycatch	High
	No-take areas	Medium (because no-takes are usually small)
Temporal restrictions	Close fishery during spawning season. If similar spawning season occur in different areas, a common closed season should be established.	High
Gear restrictions	Maximum length and height of gillnets	Medium
	Hanging ratios of gillnets	High (cetacean bycatch)
	Minimum mesh size for gillnets	High
	Bycatch Reduction Devices for beam trawl and bottom trawl	Low
	Maximum monofilament or twine diameter in bottom set gillnets of 0.5 mm (not implemented in Ukraine)	High (cetacean bycatch)
Effort restrictions	Limit the overall capacity of the authorized fleet	High
	Number of days, hours at sea	Medium
Minimum size	Minimum size 45 cm TL (Ukraine 35 cm SL)	High
	Minimum sizes should be established for: <ul style="list-style-type: none"> - Picked dogfish¹ - Thornback ray - Common stingray 	High
Participatory restrictions	Adoption of special authorizations for turbot fishing	High
Others...	- Catch restrictions (e.g. TAC or Limit)	Medium (high IUU catches)
	- Bycatch restrictions (e.g. maximum number or weight of turbot allowed to be caught as bycatch)	Medium

Management tools	Potential measures	Rank (effectiveness)
	- Restocking	High

1. Currently minimum sizes for picked dogfish have defined in Ukraine (85 cm SL), Romania (120 cm TL), Bulgaria (90 cm TL)

5. Decision rules

Management plans will include decision rules with pre-agreed measures to be adopted under different conditions of the stock in relation to agreed biological reference points. The specific technical measures to be adopted under each stock status scenarios are to be defined in appropriate national and sub-regional working groups, taking into account the socioeconomic impacts of the proposed measures.

6. Scientific monitoring

The Scientific Advisory Committee (SAC) of the GFCM should be responsible for advice on status of stocks and economic indicators of fisheries, taking into account the work performed by its subsidiary bodies. The Working Group of the Black Sea should oversee the implementation of the management plan.

Adequate and periodic scientific monitoring of fisheries (including socioeconomic indicators) and exploited stocks at national level should be ensured so that SAC is in a position to provide scientific advice.

In line with the roadmap for fighting IUU fishing, the management plan should develop and agree on standard methodologies to evaluate illegal, unreported and unregulated catches in support of stock assessments.

7. Research priorities to improve the assessment and management of fisheries

- Stock identification
- Improving data collection, especially for small scale fisheries
- Estimation of bycatch, discard and IUU catches
- Improvement of the selectivity of the fishery, including more ecosystem friendly fishing gears
- Cooperation among countries and Black Sea Commission
- Assessment of the socioeconomic importance of the fisheries and the socioeconomic impacts of the proposed measures in the management plan both at national and regional level

8. Fisheries Monitoring, Control and Surveillance

To ensure compliance with the measures to be adopted in the management plan, the following actions are to be implemented:

- Concerned Parties should make efforts to implement GFCM recommendations related to MCS, including those listed below:
 - Vessel information submitted to GFCM Regional Fleet Register.
 - Record of fishing vessels larger than 15 metres authorized to fish in the GFCM Area.
 - Satellite-based VMS required for vessels >15 meters authorized to fish in the GFCM area.
 - Required submission of data on vessels engaged in IUU fishing (IUU Vessel List).
 - Required logbook for vessels exceeding 15 meters authorized to fish in GFCM area. Logbook shall register quantities of each species caught and kept on board, above 50 kg in live weight.
 - Adoption of Port State measures to prevent, deter and eliminate IUU fishing.

These obligations are already in place for the GFCM members but the possibility that some of them are used in the management plan for turbot by members and non-members of GFCM should be explored.

Additional actions to combat IUU fishing should be considered. The proposed actions should build on the elements of the roadmap elaborated in the “Joint GFCM-BSC Workshop on IUU Fishing in the Black Sea”, Istanbul, Turkey, 25-27 February 2013. Specific reference to the following action in the roadmap should be made:

- Improve market control and traceability mechanisms and take measures to minimize the trade of IUU products.
- Joint adaptive inspection schemes and national observer programmes have to be envisaged.
- Carry out joint training of fisheries inspectors and other enforcement authorities
- Awareness campaigns for the protection of Black Sea fisheries against IUU fishing should be launched

9. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes (past and foreseen) in the fisheries system. The review should be carried out as follows:

To be done by SAC:

- Status of stocks assessed yearly.
- Status of the fishery (e.g. economic indicators)
- Reference points should be proposed by the SAC once indicators are available.
- Once reference points are established, the SAC should propose a review term for them.

To be done by Concerned Parties:

Management action taken based on stock status and fishery conditions (socioeconomic indicators) and according to the decision rules and management tools described.

10. Compliance with the plan

Management actions, modifications of the plan and compliance with the plan should be reported to the GFCM within the National Report submitted yearly to the GFCM (the use of the common format decided for the GFCM and Black Sea Commission is recommended). The Compliance Committee of the GFCM shall review this report and take necessary actions.