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Management plan for boat seines in
Greece & derogation for boat seines
targeting transparent goby (*Aphia
minuta*) in Murcia, Spain
(STECF-16-15)

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Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. In this report the STECF advises on a management plan for boat seines in Greece & Derogation for boat seines targeting transparent goby (*Aphia minuta*) in Murcia, Spain.

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

Management plan for boat seines in Greece & derogation for boat seines targeting transparent goby (*Aphia minuta*) in Murcia, Spain (STECF-16-15)

The STECF review was undertaken during August 2016.

1 MANAGEMENT PLAN FOR BOAT SEINES IN GREECE

1.1 Background

Under Article 19 of Council Regulation (EC) No 1967/2006¹ (hereafter referred to as "MEDREG"), Member States are expected to adopt management plans for fisheries conducted by trawl nets, boats seines, shore seines, surrounding nets and dredges within their territorial waters.

In 2013, the revised Common Fisheries Policy (CFP) introduced new elements for conservation such as the target of maximum sustainable yield (MSY) for all the stocks by 2020 at the latest, the landing obligation and the regionalisation approach.

In line with these two regulations, the plans shall be based on scientific, technical and economic advice, and shall contain conservation measures to restore and maintain fish stocks above levels capable of producing maximum sustainable yield or MSY. Where targets relating to the MSY (e.g. fishing mortality at MSY) cannot be determined, owing to insufficient data, the plans shall provide for measures based on the precautionary approach, ensuring at least a comparable degree of conservation of the relevant stocks.

The plan may contain specific conservation objectives and measures based on the ecosystem approach to achieve the objectives set. In particular, it may incorporate any measure included in the following list to limit fishing mortality and the environmental impact of fishing activities: limiting catches, fixing the number and type of fishing vessels authorized to fish, limiting fishing effort, adopting technical measures (structure of fishing gears, fishing practices, areas/period of fishing restriction, minimum size, reduction of impact of fishing activities on marine ecosystems and non-target species), establishing incentives to promote more selective fishing, conduct pilot projects on alternative types of fishing management techniques.

Moreover, with a view to exploit the target species of picarel and bogue, the boat seine fisheries concerned should be granted both derogations to the minimum mesh size of 40 mm square or 50 mm diamond and to the minimum distance from the coast of 3 nautical miles or to the depth of 50 m isobath where that depth is reached at a shorter distance from the coast.

In order to benefit of such derogations, as stipulated by Article 9(5) and Article 13(5) and (9) respectively of the MEDREG, the fisheries concerned, in addition of being managed within an adequate management plan, shall be highly selective, in order to ensure that catches of species mentioned in Annex III are minimal, have a negligible effect on the marine environment and shall

¹ Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94. [OJ L 409, 30.12.2006, p. 11-85.](#)

not be carried out above seagrass beds of *Posidonia oceanica* or other marine phanerogams. For the latter issue a derogation to operate in the water columns above seagrass beds is available (Article 4(1) second subparagraph) provided that the lead-line and/or the hauling ropes of boat seines do not touch the seagrass bed during the fishing operations. Greece was expected to provide up-to-date scientific and technical justifications for such derogations in its plan.

1.2 Request to the STECF

The STECF is requested to:

1. Advise whether the management plan contains the adequate elements in terms of:

- The biological characteristics and the state of the exploited resources with reference in particular to long-term yields and low risk of stock collapse;
- The description of the fishing pressure and the measures to accomplish a sustainable exploitation of the main target stocks;
- The data on catches, effort and catches per unit of effort (CPUE), as well as the biological reference points ensuring the conservation of the concerned stocks;
- The catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG;
- The potential impact of the fishing gear on the marine environment with particular interest on protected habitats (*i.e.* seagrass bed, coralligenous habitat and maërl bed);
- The social and economic impact of the measures proposed;
- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of Regulation (EU) No 1380/2013;
- Quantifiable targets such as fishing mortality rates and/or spawning stock biomass;
- Clear time-frames to reach the quantifiable targets;
- Conservation reference points consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013;
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches;
- Safeguards to ensure that quantifiable targets are met, as well as remedial action, where needed, including for situations where the deteriorating quality of data or non-availability put the sustainability of the main stocks of the fishery at risk;
- Other conservation measures, in particular measures to gradually eliminate discards, taking into account the best available scientific advice, or to minimise the negative impact of fishing on the ecosystem; and
- Quantifiable indicators for periodic monitoring and assessment of progress in achieving the targets of the management plan.

2. Evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10):

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex III of the MEDREG, with the exception of mollusc bivalves, are minimal; and
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

1.3 STECF response

Introduction

Documents provided for review

1. A draft Ministerial Decision establishing a Management Plan for fishing using boat seines or winch trawls (SB) targeting picarel (*Spicara smaris*) and bogue (*Boops boops*) in specific areas of Greece.
2. Supporting information entitled "Management plan for derogation to mesh size and the minimum distance from the coast and the minimum sea depth (Council Regulation (EC) 1967/2006 of articles 9 and 13) regarding the operation of traditional boat seine (SB) in Greek waters for *Spicara smaris* and *Boops boops*." with accompanying Annexes.

Annex I – A series of thematic maps outlining the location and duration of areas prohibited to fishing.

Annex II – Tables showing the average monthly catches per haul (kg) for the months of October 2008 through March 2009 separately for the Ionian and Aegean Seas.

Annex III – A description of the onboard sampling protocol

Annex IV – A description of the daily logbook (in the Greek Language) for recording catches and values for boat seine fisheries.

Annex V – A catalogue of 244 fishing vessels with boat seine as their main or secondary fishing gear.

Annex VI - A description of the boat seine experimental sampling from 294 hauls undertaken in January-February 2016 together with tables showing inter alia, for each haul sampled, vessel name, GSA, fishing position, date and time. Additional tables include the results from each sampled haul in terms of catch, discards and catch per unit effort (cpue) by species and details on maximum, minimum and mean size in the catches.

Details of average length frequency distributions of marketable fish and discards for samples taken in 2008-09 and 2016.

The above documents are accessible at: <https://stecf.jrc.ec.europa.eu/reports/management-plans>

The STECF response to the Terms of Reference were drafted under Commitment no. SI2 725 694, established under Commission Decision C(2016) 1084 of 25/02/2016. The draft response was reviewed by the STECF by written procedure during August 2016 and based on that review, the STECF draws the following observations and conclusions.

STECF observations

The STECF observations are listed below under each of the elements of the request.

1. Advise whether the plans contain the adequate elements in terms of:

- **The biological characteristics and the state of exploited resources with reference in particular to long-term yields and low risk of stock collapse;**

The supporting information (Document 2, above) provides summary information on the state of the stocks of *Spicara smaris*, *Boops boops*, *Mullus surmuletus*, *Mullus barbatus* and *Sardina pilchardus*. Such information is derived from assessments undertaken using data up to 2008 or 2009 using dynamic production models that are unable to identify and take into account annual fluctuations in recruitment or the impact of the fishery on individual cohorts in the populations. The summary information for *Spicara smaris*, *Mullus surmuletus* and *Mullus barbatus* is the same as that presented in support of the Management plan for Greek Bottom trawlers (Anonymous, 2013) which is cited in the supporting information (Document 2).

The plan contains no relevant information to assess the current status of the above stocks with reference to long-term yields (MSY) and low risk of stock collapse, and no data from recent scientific surveys are presented

- **The description of the fishing pressure and the measures to accomplish a sustainable exploitation of the main target stocks;**

Annual estimates of the capacity of the vessels engaged in boat seining are presented together with estimates for fishing effort for the period 1991 to 2013.

The fishing effort estimates are derived as

number of vessels * Maximum potential fishing days * 70%

Consequently, the fishing effort estimates expressed as fishing days, Kw days and GT days (Figure 18, Document 2) are largely uninformative. STECF understands that such an approach was used because for a number of years, the DCF was not fully implemented in Greece and as a result, fleet-specific effort data were not available. Similarly, the proportional contribution of boat seine effort to the total effort (Tables 5-8, Document 2) are also uninformative.

Regarding measures to accomplish a sustainable exploitation of the main target stocks, these are described under monitoring, below.

- **The data on catches, effort and catches per unit of effort (CPUE), as well as the biological reference points ensuring the conservation of the concerned stocks;**

Annual Landings data at the stock level are given for the years 1991-2011 (Table 9, Document 2) and effort expressed as number of vessels for the period 1991-2013 are given in section 6 of Document 2 (Figures 24-28). Biological reference points for each of the main species caught are given in section 8 of Document 2.

The plan also contains details of boat seine experimental sampling from 294 hauls undertaken during January-February 2016 together with tables showing inter alia, for each haul sampled, vessel name, GSA, fishing position, date and time. Additional tables include the results from each sampled haul in terms of catch, discards and catch per unit effort (cpue) by species and details on maximum, minimum and mean size in the catches.

Tables showing the average monthly catches per haul (kg) for the months of October 2008 through March 2009 separately for the Ionian and Aegean Seas are given in Annex II. Consequently, catch and effort data for more recent years are not available.

- **The catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the Mediterranean Regulation;**

Details of average length frequency distributions of marketable fish and discards for samples taken in 2008-09 and 2016 are given in Annex VI. However, it is unclear as to the extent that such samples are representative of the commercial fishery catch compositions since i) the sampling methodology is not specified i.e. were the samples collected as part of a scientific survey or by observers on board commercial fishing trips; or ii) the sampling period was very short / irregular (249 hauls sometime between Oct 2008 & March 2009, 17 hauls in Jan 2016, 277 hauls in Feb 2016)

- **The potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);**

No detailed quantitative information on the impact of the fishing gear on the marine environment is presented although detailed thematic maps of the distribution of *Posidonia* beds are included in

Annex I. The supporting documentation argues that boat seining is a low impact activity. However, the proposed plan includes provisions for temporal and spatial fishing bans in certain sensitive habitats including *Posidonia* beds.

- **The social and economic impact of the measures proposed;**

There is no quantitative information presented on the social and economic impact of the proposed measures. Although section 9 of Document 2, presents a number of social and economic arguments in support of maintaining boat seining activity.

- **The scientific monitoring of the management plan.**

Monitoring of the proposed plan is described in Section 10 of Document 2. A description of an onboard sampling protocol (Annex III) and a daily logbook (in the Greek Language, Annex IV) for recording catches and values for boat seine fisheries are provided.

Monitoring is to be for the following species *Spicara smaris* (picarel), *Boops boops* (bogue), *Mullus barbatus* (striped red mullet), *Mullus surmuletus* (red mullet) and *Sardina pilchardus* (sardine), in the Aegean Sea (GSA 22), Cretan Sea (GSA 23) and Ionian Sea (GSA 20), covering Greece's territorial waters in their entirety.

If implemented as described, the proposed monitoring plan has the potential to provide useful data and information to adequately monitor the developments in the boat seine fishery in Greek Waters. STECF considers that such monitoring is required as a matter of urgency since basic information on the fishery is currently lacking.

- **Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of Regulation (EU) No 1380/2013;**

The reference levels proposed are consistent with the objectives of Article 2 of Regulation (EU) 1380/2013 and also appears to be consistent with the relevant provisions of Article 6.

- **Quantifiable targets such as fishing mortality rates and/or spawning stock biomass;**

F_{MSY} and B_{MSY} reference levels points given for the following species.

Aegean and Cretan Seas – Picarel, Bogue, Striped red mullet, Red mullet, Sardine

Ionian Sea – Picarel, Bogue, Striped red mullet, Red mullet, Sardine

In addition, the draft Ministerial Decision indicates that the ratios of F/F_{MSY} and B/B_{MSY} as stipulated therein (Article 4, paragraph 2), are considered to be the upper and lower limits for fishing mortality and biomass respectively.

The above reference points are consistent with the results of the latest available stock assessments from the STECF (STECF, 2012). Note however that such assessments relate to the year 2009, and because of an absence of appropriate data and updated information the current status the above stocks in relation to the proposed reference points is unknown.

It is important to note that historically, the proportion of the total catches of other species taken by the boat seine fleet has been small and the impact on species other than *S. smaris* is likely to

have been minor. However, because of the absence of more recent catch data, it is unclear whether this remains to be the case..

- **Clear time-frames to reach the quantifiable targets;**

The timescale intended to reach the quantifiable targets are not specified.

- **Conservation reference points consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013;**

The reference levels proposed for the specified species are based on F_{MSY} and B_{MSY} and are consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013.

- **Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches;**

The technical measures to be implemented are specified in Article 7 of the Draft decision. Such measures prescribe a minimum mesh opening of 16 mm, a limit on the length of tow line of 700 m on each side, a prohibition of fishing with boat seines from 1 April to 30 September each year, a ban on fishing where there are seagrass beds, a provision that any permanent, seasonal or temporal bans in force must be complied with and a provision that fishing with boat seines may not be combined with any other type of gear in the course of one day; if a vessel holding a licence to fish with boat seines is to be used in any other fishing activity, the gear in question must be removed from the vessel.

It is unclear to which extent these technical measures will contribute to achieve the targets.

There are no measures indicated that are specifically identified or designed to reduce and avoid unwanted catches.

- **Safeguards to ensure that quantifiable targets are met, as well as remedial action, where needed, including for situations where the deteriorating quality of data or non-availability put the sustainability of the main stocks of the fishery at risk;**

Safeguards and an outline of remedial action to be taken when the reference level determined for a target species (Article 4, paragraph 2) is exceeded are outlined under Article 5 of the draft Ministerial Decision which makes provision to restrict or suspend fishing licences and to implement supplementary management measures, although no details of what might constitute supplementary management measures other than temporal restrictions on fishing activity to reduce fishing effort are described.

Article 5 also makes provision to set up a Committee to advise the Directorate for Fisheries Policy and Fishery Resources on the outcome of an annual monitoring programme.

The terms and conditions for fishing are set out in Article 6, which prescribes that a licence to fish using boat seines or winch shall be granted to vessels which hold a valid fishing permit that also includes the gear in question and which have installed a satellite vessel monitoring system (VMS) and keep an electronic log of their fishing activities as required by Articles 14 and 15 of Council Regulation (EC) No 1224/2009. Such licences shall be issued on an annual basis and a licence to fish using boat seines or winch trawls may be suspended by decision of the Minister for Rural Development and Food if the stock monitoring shows that the stock is in a worse condition than

the reference levels laid down. STECF notes that such a safeguard will only become operational once sufficient data are collected through the planned monitoring to allow regular stock assessment updates.

Note that impacts of the boat seine fleet on the overall exploitation rates on species other than picarel (*S. smaris*) is likely to be minor. Hence any remedial action applied to the boat seine fleet will also have only a minor impact on such species.

- **Other conservation measures, in particular measures to gradually eliminate discards, taking into account the best available scientific advice, or to minimise the negative impact of fishing on the ecosystem;**

No information on conservation measures to gradually eliminate discards, is presented.

Articles 7.4 and 7.5 of the draft ministerial decision include provisions to respect other regulations e.g. not to fish over seagrass beds and to respect any other closed areas and seasons. Such restrictions may reduce the negative impacts of fishing on the ecosystem.

- **Quantifiable indicators for periodic monitoring and assessment of progress in achieving the targets of the management plan.**

The indicators of F/F_{MSY} and B/B_{MSY} are to be used as indicators for monitoring progress to achieving the reference levels proposed in the draft regulation. Monitoring of the stock status in relation to their reference levels is proposed to be undertaken annually. STECF notes that annual status assessments will only be possible once sufficient data are collected through the planned monitoring programme.

2. Evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and

10):

- i. – There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;**

The distribution of the main species caught (*S. smaris*) which represents approximately 50% of the catch in weight by boat seines, is restricted to within 3 NM of the coast.

- ii. – The fisheries have any significant impact on the marine environment;**

Quantitative information of the impact of the boat seine fishery on the marine environment is not available. However, it is expected to be relatively low compared with the impacts of trawls or dredges for example, particularly if fishing over sensitive habitats is not carried out.

iii. – The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;

The proposed derogation appears to apply to 262 vessels that currently hold licences to operate in the boat seine fisheries in the Aegean (GSAs 22 and 23) and Ionian (GSA 20) Seas although 247 vessels are listed in Table 2 (Document 2) for 2015, whereas Annex V indicates that there were 244 vessels in 2016. There does not appear to be a specific provision in the draft Ministerial decision that would prevent future increases in the number of vessels that could obtain a licence to use a boat seine provided their fishing permit allows the use of such gears. Furthermore, consideration needs to be given to whether the numbers of vessels involved in the boat seine fishery constitutes a limited number. The management plan states that this is an important fishery.

iv. – The fisheries cannot be undertaken with another gear;

The main species caught (*S. smaris*) using boat seines can be and is caught using other gears. According to information presented in the management plan, 20% of catches are taken by nets / lines, 20% by trawlers, and 10% by purse seines. Boat seine catches are reported to account for about 50% of total catches of *S. smaris*. The environmental impact of boat seines in terms of impacts on seabed habitat and on unwanted catches is likely to be relatively low in comparison to that for bottom trawls.

v. – The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;

The proposed derogation to fish within 3 NM, or at depths less than 50 m, form part of the proposed management plan.

vi. – The vessels concerned have a track record of more than 5 years;

The covering letter accompanying the draft Ministerial Decision (Document 1) asserts that the fishing vessels have been licensed to operate the fishing gear in question for more than five years (36 years in fact, as no new licences have been issued since 1980).. However, STECF notes that there does not appear to be a specific provision in the draft Ministerial decision that would prevent future increases in the number of vessels (see point iii above).

vii. – The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;

Section 10.3 of the supporting documentation (Document 2) alleges that boat seine activities do not interfere with the activities of vessels using other fishing gears, such as trawls or purse seines. However, appropriate data and information to back up this allegation is not presented.

- viii. - The fisheries are regulated in order to ensure that catches of species mentioned in Annex III of the MEDREG, with the exception of mollusc bivalves, are minimal;**

The proposed management plan does not appear to make any specific provision to ensure that the catches of any species listed in ANNEX III of 1967/2006 are minimal. Catches of those species or size groups that are not normally distributed within the 50 m isobaths will be minimal.

- ix. - The fisheries do not target cephalopods.**

Based on the information presented on catch composition and landings in Document 2 and Annexes II and VI, it appears that cephalopods comprise about 5% of the catch by weight. The corresponding tonnage are not given in the documents.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- i. - The fisheries are highly selective and have a negligible effect on the marine environment;**

The boat seine fishery traditionally operates with a minimum mesh size of 16 mm. As such in terms of size selectivity, it is highly un-selective. In terms of species selectivity, the information presented in document 2 indicates that historically, a large number of species are caught but that more than 50% of the catch in weight is composed of *Spicara smaris* and *Boops boops*.

- ii. - The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.**

Article 7.4 of the draft ministerial decision states "In areas where there are seagrass beds (in particular *Posidonia oceanica*) fishing shall be banned pursuant to Decisions 167378 of 14 May 2007 and 2442/51879 of 28 April 2016 of the Ministry for Rural Development and Food and as provided for in Article 4(1) and (2) of Regulation (EC) No 1967/2006.

In addition, Article 7.5 of the draft ministerial decision states "Any additional permanent, seasonal, local or temporal bans in force under the national legislation must be complied with."

STECF conclusions

The proposed management plan essentially comprises the following elements:

- A request for a derogation to operate boat seines within 3 NM of the coast or within the 50 m isobaths.
- A request for a derogation to fish with a minimum mesh size of 16 mm.
- A proposal to implement various spatio-temporal closures
- A proposal to implement a monitoring programme.
- A proposal to take certain actions if required.

The provisions of the draft Ministerial Decision appear to be consistent with the proposals made in the supporting documentation. However, the information presented in support of the proposed plan is not sufficiently detailed to permit an informative response to many of the elements outlined in the request from DG MARE. Importantly, the information regarding biological reference points and exploitation status is based on data up to and including the years 2009 only and hence may not reflect the current exploitation status. Furthermore, basic information such as recent catch and effort data for the boat seine fishery is not currently available and implementation of the planned monitoring programme should be a priority to ensure such data are available in future.

In addition the assertions relating to environmental and socio-economic impacts, while intuitive, are not supported by quantitative information.

Finally, the information presented is insufficient to determine whether the provisions in the draft Ministerial decision are likely to achieve the objectives of the CFP basic regulation (1380/2013).

References

Anonymous, 2013. Management plan for Greek Bottom Trawlers. Ares(2013)548016 - 05/04/2013

2 DEROGATION FOR BOAT SEINES TARGETING TRANSPARENT GOBY (*APHIA MINUTA*) IN MURCIA, SPAIN

2.1 Background

The Council Regulation (EC) No 1967/2006² (hereafter referred to as "MEDREG") establishes minimum distances and depths, as well as minimum mesh sizes for the use of boat seines (Articles 9 and 13).

With a view to exploit the target species of transparent goby (*Aphia minuta*), the boat seine fisheries concerned should be granted both derogations to the minimum mesh size of 40 mm square or 50 mm diamond and to the minimum distance from the coast of 3 nautical miles or to the depth of 50 m isobath where that depth is reached at a shorter distance from the coast.

In order to benefit of such derogations, as stipulated by Article 9(5) and Article 13(5) and (9) respectively of the MEDREG, the fisheries concerned, in addition of being managed within an adequate management plan, shall be highly selective, in order to ensure that catches of species mentioned in Annex III are minimal, have a negligible effect on the marine environment and shall not be carried out above seagrass beds of *Posidonia oceanica* or other marine phanerogams. For the latter issue a derogation to operate in the water columns above seagrass beds is available (Article 4(1) second subparagraph) provided that the lead-line and/or the hauling ropes of boat seines do not touch the seagrass bed during the fishing operations. Greece was expected to provide up-to-date scientific and technical justifications for such derogations in its plan.

2.2 Request to the STECF

The STECF is requested to evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10):

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;

² Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94. [OJ L 409, 30.12.2006, p. 11-85.](#)

- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex III of the MEDREG, with the exception of mollusc bivalves, are minimal;
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7):

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

Finally, advice whether the changes to the current management plan (*i.e.* fishing period, limitation of the fishing effort, and modification of the minimum threshold for the fishing effort) would ensure a sustainable exploitation of transparent goby without jeopardising the socio-economic sustainability of the fishing fleets involved.

Supporting documents

- Management plan for boat seines targeting transparent goby (*Aphia minuta*) in Murcia, Spain.
- Report of the scientific monitoring of the plan: fishing season 2013-2014.
- Report of the scientific monitoring of the plan: fishing season 2014-2015.

Supporting documents are accessible at: <https://stecf.jrc.ec.europa.eu/reports/management-plans>

2.3 STECF response

The STECF response to the Terms of Reference were drafted under Commitment no. SI2 725 694, established under Commission Decision C(2016) 1084 of 25/02/2016. The draft response was reviewed by the STECF by written procedure during August 2016 and based on that review, the STECF draws the following observations and conclusions.

STECF observations

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10):

- **There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;**

Schools of transparent goby (*Aphia minuta*) as detected by acoustic methods are generally located in areas at 5-40 m depth during winter-spring (which corresponds, according to the Murcia Management Plan (MP), to the fishing season (*i.e.* December to

February)) and principally inside bays. The species is located mainly in deeper areas outside bays (i.e. 40-90 m) during the rest of the year (summer and autumn) where it is less targeted by the fishery (Iglesias and Morales-Nin, 2001).

According to the Murcia MP, 83.7 % of the total hauls during a fishing season take place between 10 and 20m deep, with 29% of hauls in the strata 16-18m alone. The winter fishery with boat seines in Murcia region is thus geographically limited in shallow waters located along the coast and especially inside bays, although it is unclear what prevents the fishery to develop deeper or in other seasons. The life history of transparent goby is uncertain regarding stock definition and cohorts. In the Western Mediterranean there were reported two main peaks of recruitment occurring in summer and winter that according to some scientific literature could be interpreted as deriving from two separate annual cohorts that spawn respectively in spring and autumn. In other western Mediterranean areas, such peaks have been also recorded, but less regularly distributed along the year and are assumed to derive from a single stock with a long spawning season over more than 6 months. It is therefore unclear to which extent the fact that the fishing is limited to winter contributes to limiting the fishing mortality on the stock.

- **The fisheries have any significant impact on the marine environment;**

Inspections carried out by the Fisheries and Aquaculture Department in the season 2011-2012 and 2014-2015 analysed the catches immediately after the cod-end was hauled in. The inspections showed the absence of benthic and sessile organisms or inert elements from the bottom in the cod end, as for example part of the protected *Posidonia oceanica*. The transparent goby fishery with boat seines in Murcia region does not drag on the seabed, the net is not trawled and there are almost no contact with the bottom. This suggests that this fishery has a low impact on the marine environment in terms of bottom habitat. Therefore, it can be concluded that the winter fishery with boat seines in Murcia region has a minimum impact on the marine environment, and especially on the protected *Posidonia oceanica* sea meadows.

- **The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;**

The number of boat seines targeting transparent goby in the Murcia region during winter and included in the MP in 2016 is 27 and this number is not allowed to increase. Also, each vessel cannot exceed a length of 12 metres and a maximum engine power of 116 horse power. For the fishing of transparent goby only a kind of net called "lowered dragnet" can be used. The gear characteristics and use are well specified in the Murcia MP. The period of catching of transparent goby in the internal waters of the Region of Murcia is fixed between the first working day of the month of December and the last working day of the month of February. What "limited number of boats" means is not defined in the MEDREG so STECF cannot assess this condition quantitatively, but STECF notes that provisions are made in the MP to restrict the fishing season and to prevent any increase in fishing effort.

- **The fisheries cannot be undertaken with another gear;**

Because of the biological characteristics of transparent goby, with the largest individuals measuring around 45 mm and the species being mainly concentrated in shallow coastal waters (i.e. 10-20 m) within bays during winter, the fisheries targeting the transparent goby in winter cannot be easily undertaken with any alternative gear. It is possible to catch *Aphia* with bottom trawl nets using a very small mesh at the cod end but the use of trawled gears would have more impact on the bottom, on the benthic community, would catch more bycatch and would damage the quality of fish

- **The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;**

The winter fishery targeting transparent goby carried out with boat seines in the Murcia region is regulated by the "Management Plan for the traditional fishing for transparent goby (*Aphia minuta*) in the waters of the Region of Murcia, Spain", which was submitted for the first time on 17 March, 2012, on the basis of the exceptions provided for in Articles 4, 9 and 13 of Regulation No 1967/2006. The MP was assessed by the Secretariat General for Fisheries of the Ministry of Agriculture, Food and Environment, and then sent to the EU Commission.

The winter fishery targeting transparent goby and carried out with boat seines in the Murcia region is subject to inspections to verify compliance with the requirements set in the MP (i.e. Annex IV of the MP). The fishery is also subject to scientific monitoring for at least two journeys during the fishing season, which are carried out in order to monitor fishing operations, sample the catches and assess by-catch and the impact on marine environment (Annex IV of the MP). According to Article 7 of the MP, all catches of transparent goby are required to auction of first sale, irrespective to the amount. Moreover, catches of transparent goby can be landed only in authorised ports as specified in the MP, which is also in line with Article 23 of the MEDREG.

- **The vessels concerned have a track record of more than 5 years;**

The Management Plan for the transparent goby requires the development of a single list of vessels authorised for the fishing of this species. The authorization to engage in fishing for transparent goby in the inland waters of the Region of Murcia includes the vessels registered for the purpose of fishing minor species in of the National Census of the Spanish Operational Fishing Fleet and which comply with the following requirements: 1) not to exceed a length of 12 metres long and to have a maximum power of 116 HP and 2) having spent 30 days on fishing transparent goby during the period 2001-2011, distributed among at least 5 different years, and at least one of which was carried out in the period 2007-2011. STECF considers thus that this condition is fulfilled.

- **The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;**

There are no indications in the reports submitted by the Directorate General for Livestock and Fisheries of the Autonomous Community of the Region of Murcia of conflicts between boat seines authorised to conduct a winter fishery targeting transparent goby in the Murcia region and other fishing vessels using gears other than

trawls, seines or similar towed nets in the same region and during the same period of the year.

- **The fisheries are regulated in order to ensure that catches of species mentioned in Annex III of the MEDREG, with the exception of mollusc bivalves, are minimal;**

Inspections were carried out on boat seines targeting transparent goby in the Murcia region between 2012 and 2016, for a total of 96 hauls observed. The inspectors were present at the time of the hauling of the fishing gear, so that the total catches, including non-target species, could be analysed. The proportion of by-catch species was small (0.08-0.09% in numbers and 3.4-6.2% in weight) and most of the individuals (87.7-99.4%) are released still alive. No information is nevertheless provided on the post-release survival rates. The frequency of occurrence of the by-catch species in the catches was reported at the species level. However, the catch in weight for the bycatch species was not reported at the level of species but aggregated for all by-catch species, which prevents estimating exactly the caught tonnage of species mentioned in Annex III of the MEDREG. Nevertheless, considering the small quantity of by-catch obtained by the fishery with boat seines targeting transparent goby in the Murcia region during winter, it can be assumed that catches of the species mentioned in Annex III of the MEDREG, with the exception of mollusc bivalves, are kept to a minimum. However, to facilitate the analysis of the amount of by-catch by species, it would be necessary to report also the total weight of each species caught by boat seines targeting transparent goby and not only its frequency of occurrence.

- **The fisheries do not target cephalopods.**

Catches of cephalopods are limited to *Loligo* spp and *Sepia officinalis*. The frequency of occurrence of these species where observers were present on board ranged between 1.04-14.58% of the 96 analysed hauls. Considering the limited frequency of occurrence of cephalopods species and the general small quantity of by-catch caught by the winter fishery with boat seines targeting transparent goby in the Murcia region, it can be concluded that this fishery do not target cephalopods. However, to facilitate the analysis of the by-catch, it would be necessary to report also the total weight of each species of cephalopods caught and not only its frequency of occurrence.

2.3 **Advice whether the changes to the current management plan (i.e. fishing period, limitation of the fishing effort, and modification of the minimum threshold for the fishing effort) would ensure a sustainable exploitation of transparent goby without jeopardising the socio-economic sustainability of the fishing fleets involved.**

It is not possible to determine whether modifications of the Murcia MP would ensure a sustainable exploitation of transparent goby (interpreted here as in accordance with the MSY objective of the EU Common Fishery Policy) without jeopardising the socio-economic sustainability of the fishing fleets involved as no assessment of the stock of transparent goby has ever been conducted. Information showed in Table 28 of the "Report of the scientific monitoring of the plan: fishing season 2012-2016" indicates that total catches and effort have oscillated without clear trend between 2002 and 2016

(except in 2015 when the fishery was closed), CPUEs have declined from around 45 kg/h in 2002 to 20 kg/h in 2016 (i.e. average of December- February in Table 28).

The MP contains a maximum yearly catch threshold of 20000 kg. Once the 20000 kg has been reached the fishery is closed. The MP also contains a minimum average CPUE threshold per month per vessel per fishing day (December 23.3 kg, January 22.8 kg and February 26.6 kg; i.e. Article 2.5 and 2.6 of the MP). Such threshold, (the lowest quartile of the time series of CPUEs), represents a reference value for the minimum biomass level, assuming that CPUE is a proxy for an index of biomass..

According to the MP, whenever the minimum monthly average CPUE is not reached the fishery is reduced by one day a week in the following month. If in that month the minimum average monthly CPUE is not reached, the fishery will be closed, which happened in February 2015. However, it is not clear from Table 28 why the fishery was not closed in February 2016 following two consecutive minimum averages monthly CPUE below the minimum value.

It is not clear from the MP on which kind of biological grounds both the maximum annual catch threshold and the minimum average CPUE thresholds has been established. It is important to remark that minimum average CPUE thresholds should be based on biological evidences and not on socioeconomic ones. In this context, historical information on monthly average CPUE in a period of low exploitation of transparent goby in Murcia region would be helpful to define minimum average monthly CPUE thresholds. STECF notes that the limits to gear design, gear size and vessel size included in the MP may limit technical creeping, but STECF stresses out that if technical developments occur over time then CPUE thresholds must be revised downwards accordingly.

It is also recognised that the definition of stock unit for transparent goby is complicated as well as its stock assessment. Therefore, Harvest Control Rules (HCRs) cannot be based on quantitative Management Strategies Evaluation (MSE). An empirical CPUE thresholds as currently used in the Murcia MP is useful, but should be used in the context of an adaptative management plan. As such, if there are signs of degradation of the state of the stock (e.g. negative trends in CPUE), it might be necessary to decrease the threshold in a precautionary approach. In the absence of stock assessment, establishing an independent survey would be useful to monitor the trends in biomass.

It is also noted that, if the stock spawns over a long period and the fishery targets only the transparent goby in winter in the Murcia region, while the rest of the population is less exploited over the year, this aspect may contribute to limit the fishing mortality for the putative stock of transparent goby in the Murcia region, although this effect cannot be quantified.

STECF conclusions

Although it is not possible to determine whether the current MP strictly ensures the sustainable exploitation of transparent goby in accordance with the MSY objective of the EU Common Fishery Policy, it can be concluded that the Murcia MP contains the elements necessary for limiting the level of exploitation of transparent goby in the Murcia region, including, a limited fishing period, limitation of the fishing effort, maximum yearly catches, HCRs and monthly CPUE thresholds below which the fishery should be limited or closed.

STECF notes nevertheless that since the MP is not based on an analytical assessment, an adaptative approach to the management plan should be adopted, and the CPUE threshold should be decreased if there are signs of degradation of the stock of transparent goby. An independent survey index should be established to monitor the trends in biomass.

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