



**GENERAL FISHERIES COMMISSION
FOR THE MEDITERRANEAN**



**COMMISSION GÉNÉRALE DES
PÊCHES POUR LA MÉDITERRANÉE**

**GENERAL FISHERIES COMMISSION FOR THE
MEDITERRANEAN**

SCIENTIFIC ADVISORY COMMITTEE

Twelfth Session

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**CONCLUSIONS AND RECOMMENDATIONS OF THE FOUR SAC
SUB-COMMITTEES**

Malaga, Spain, 30 November-3 December 2009

INTRODUCTION

1. This document summarizes the main conclusions and recommendations of the four Sub-Committees of the Scientific Advisory Committee (SAC) as reflected in their reports, respectively quoted: GFCM:SAC12/2010/Inf.5, 6, 7 and 8. It also takes into consideration selected issues raised by the Coordinating Meeting of Sub-Committees (CMSC), as provided in document GFCM:SAC12/2010/Inf.9. The Sub-Committees met simultaneously in Malaga, Spain, from 30 November to 3 December 2009 and the Coordinating Meeting met on 4 December.

SUB-COMMITTEE ON STOCK ASSESSMENT (SCSA)

2. The Working Groups on Demersal and on Small-Pelagic Species took place in Ancona, Italy, respectively from 19 to 23 October and from 26 to 30 October 2009.

- On the basis of the report of the Working Group on Demersal Species, the SCSA reviewed nine (9) documents on assessment, covering eight (8) species and nine (9) stocks (including three [3] shared stocks) in four (4) GSAs as well as four (4) “assessment-related” documents. Furthermore, on the basis of new studies performed in specific GSAs (including those carried out in the framework of regional projects and programs) the SCSA reviewed 11 assessments of demersals presented directly during the Sub-Committee, covering six (6) GSAs, 11 stocks and six (6) species as well as three (3) “assessment-related” documents.

- On the basis of the report of the Working Group on Small Pelagic Species, the SCSA reviewed six (6) documents on assessment of small pelagics, covering six (6) stocks of sardine and anchovy in three (3) GSAs as well as two (2) assessment-related documents. Furthermore, on the basis of new studies performed in specific GSAs (including those carried out in the framework of regional projects and programs) the SCSA reviewed six (6) assessments on sardine and anchovy presented directly during the Sub-Committee, covering three (3) GSAs and six (6) stocks as well as three (3) “assessment-related” documents.

3. The detailed description of the fishery, status and abundance of concerned stock, information source, exploitation rate and related analysis for each assessment document are available in the SCSA report. Management advice for those assessments which were endorsed by the Sub-Committee are summarized by GSA concerned in tables 1 and 2 below.

Table 1 Management advice for demersal species

GSA	Stock	Stock status	Working Group management advice	Working Group comments	SCSA comments
GSA 3 (southern Alboran sea)	<i>Merluccius merluccius</i>	Over-exploited	Reduce the fishing mortality by 60%.	Variable pattern in fishing mortality	Due to one year only data the assessment was considered as preliminary
	<i>Pagellus bogaraveo</i>	Moderately exploited	Maintain the fishing mortality at the current level	Due to the flat-topped Y/R curve, the Fmax is not well defined	Due to the depletion status of the species in the Spanish coast and the uncertainty of the unit stock, in the Alboran Sea, a joint assessment with GSAs 1 and 3 is recommended
	<i>Parapenaeus longirostris</i>	Over-exploited	Reduce the fishing mortality by 30-66% (depending on the model). A long term management plan is required	Many Fter values were tried. Schaefer model fitted well the data	The outcomes from one year data used in the analytical model were supplemented by the several years data used in Schaefer model
	<i>Boops boops</i>	Over-exploited	Reduce the fishing mortality by 64%. A long term management plan is required	No particular comments	Include in the assessment also the artisanal fishery data, if any
	<i>Mullus barbatus</i>	Over-exploited	Reduce the fishing mortality by 76%. A long term management plan is required	No particular comments	Include in the assessment also the artisanal fishery data, if any
GSA 5 (Balearic islands)	<i>Merluccius merluccius</i>	Over-exploited	Improve the trawl exploitation pattern and reduce the trawl effort. A long term		SCSA endorses the WG management advice

GSA	Stock	Stock status	Working Group management advice	Working Group comments	SCSA comments
			management plan is required		
	<i>Mullus surmuletus</i>	Fully exploited	Not to increase the fishing effort		SCSA endorses the WG management advice
	<i>Aristeus antennatus</i>	Over-exploited	Not to increase the fishing effort		SCSA endorses the WG management advice
GSA 7 (Gulf of Lions)	<i>Merluccius merluccius</i>	Over-exploited	Improve trawl exploitation pattern, close nursery areas to fishing, implement 40mm square mesh size in trawl codened		It is a necessity to reduce the fishing effort
	<i>Mullus barbatus</i>	Fully exploited	Reduce the fishing effort		The stock status based on the examined docs was changed by the SC from fully exploited to overexploited
GSA 9 (Ligurian and north Tyrrhenian)	<i>Merluccius merluccius</i>	Over-exploited	Reduce the fishing mortality by 40%. A long-term management plan is required		SCSA endorses the WG management advice
	<i>Mullus barbatus</i>	Over-exploited	Reduce the fishing mortality by 30% (when FMSY reference point)		SCSA endorses the WG management advice
	<i>Parapenaeus longirostris</i>	Fully exploited			The stock status diagnosis is also based on the fact that fishing mortality is close to F0.1
GSA 10 (South and Central Tyrrhenian)	<i>Merluccius merluccius</i>	Over-exploited	Reduce the fishing effort until fishing mortality is below F0.1. A long term management plan is required		SCSA endorses the WG management advice
GSA 15 (Malta)	<i>Mullus barbatus</i>	Over-exploited	Reduce the fishing mortality by 30%. A long term management plan is required	SURBA outputs were uncertain, which is probably due to the short time series data	SCSA endorses the WG management advice

GSA	Stock	Stock status	Working Group management advice	Working Group comments	SCSA comments
	<i>Mullus surmuletus</i>	Fully exploited	Maintain fishing mortality at the current level	SURBA outputs were uncertain, which is probably due to the short time series data	SCSA endorses the WG management advice
GSA 15+16 (Malta + South of Sicily)	<i>Aristaeomorpha foliacea</i>	Over-exploited	Reduce the fishing mortality by 30% (when F0.1 reference point)		SCSA endorses the WG management advice
GSA 17 (Western part of northern Adriatic)	<i>Nephrops norvegicus</i>	Over-exploited	Reduce the fishing mortality on females by 64-68% and on males by 77-79% (depending on M values). A long term management plan is required	Data were available only on the western side of the Adriatic	A joint assessment with data covering the whole GSA was recommended
	<i>Solea solea</i>	Over-exploited	Reduce the fishing mortality by 82-86%. A long term management plan is required	Spatial distribution indicated sole move east across Adriatic with increasing age. Thus fishing mortality based on Italian coast data may be biased	A joint assessment with data covering the whole GSA was recommended
GSA 25 (Cyprus)	<i>Mullus barbatus</i>	Over-exploited	Reduce fishing pressure		Since fishing pressure is due more to artisanal fishery, SC recommended to monitor this fishery more closely
GSA 26 (South Levant)	<i>Merluccius merluccius</i>	Over-exploited	Reduce the fishing mortality by 51%. A long term management plan is required	Model did not fit well the 2008 data. The status reflects the study period only	improve knowledge of the stock unit in the area
	<i>Mullus barbatus</i>	Over-exploited	Reduce the fishing mortality by 61%		Due to the one year only data the assessment was considered as preliminary
	<i>Mullus surmuletus</i>	Over-exploited	Reduce the fishing mortality by 63%		Due to the one year only data the assessment was considered as preliminary

Table 2 Management advice for small pelagic species

GSA	Species	Stock status	Working Group management advice	Working Group comments	SCSA comments
GSA 1 (Northern Alboran Sea)	<i>Engraulis encrasicolus</i>	Over-exploited With moderate fishing mortality and low abundance	No reference points were given	Presented inside the SC	The use of BRP is also recommended to be used. However based to the examined data, the moderate fishing mortality should change to high fishing mortality
	<i>Sardina pilchardus</i>	Over-exploited with moderate fishing mortality and low abundance	No reference points were given	Presented inside the SC	The use of BRP is also recommended to be used. However based to the examined data, sardine was considered as fully exploited with risk to overexploitation
GSA 6 (Northern Spain)	<i>Engraulis encrasicolus</i>	Over-exploited with high fishing mortality and low abundance	No reference points were given	Presented inside the SC	The use of BRP is also recommended
	<i>Sardina pilchardus</i>	Over-exploited with moderate fishing mortality and low abundance	No reference points were given	Presented inside the SC	The use of BRP is also recommended
GSA 7 (Gulf of Lions)	<i>Sardina pilchardus</i>	Moderately exploited but intermediate biomass abundance	As biomass estimation for 2006-2008 remain lower than 2005 estimate, it is recommended not to increase the fishing effort	Mixed fishery. Advice coherent with that for anchovy. Assessment rely on the assumption of unbiased estimate of biomass by acoustics	SCSA endorses the WG management advice The use of BRP is also recommended
	<i>Engraulis encrasicolus</i>	Moderately exploited but biomass at low stock abundance	Given the low levels of biomass for the last 4 yrs in comparison with the series of acoustic biomass available, it is recommended not to increase the fishing effort	Mixed pelagic fishery. Assessment relies on the assumption of unbiased estimate of biomass by acoustics (which is consistent with a DEPM estimate). Decreasing tendency in GSAs 06, 07	Endorsed. The use of BRP is also recommended
GSA 16 (South of Sicily)	<i>Sardina pilchardus</i>	Moderately exploited but biomass at intermediate	Medium biomass levels in 2006-2008 at moderate fishing levels. In coherence	Mixed fishery. Advice coherent with that for anchovy.	Endorsed. The use of BRP is also recommended

GSA	Species	Stock status	Working Group management advice	Working Group comments	SCSA comments
		abundance	with anchovy, is recommended not to increase the fishing effort with anchovy	Assessment rely on the assumption of unbiased estimate of biomass by acoustics	
	<i>Engraulis encrasicolus</i>	High fishing mortality at low stock abundance	Given that biomass was very low for 3 consecutive yrs (2006, 2007 2008) and the increasing trend in exploitation rate, fishing effort should not allowed to increase	Mixed fishery with sardine. Assessment relies on the assumption of unbiased estimate of biomass by acoustics (which is consistent with a DEPM estimate). Harvest rates average the last 3 yrs	Endorsed. The use of BRP is also recommended
GSA 17 (Northern Adriatic)	<i>Engraulis encrasicolus</i>	Moderately exploited	Not to increase the fishing effort		Endorsed The use of BRP is also recommended to be used The substantial differences between the new assessments and those of previous years were explained by the improvement of the assessments due to the incorporation of data covering the whole GSA
	<i>Sardina pilchardus</i>	Fully exploited	Not to increase the fishing effort		Endorsed The use of BRP is also recommended to be used The substantial differences between the new assessments and those of previous years were explained by the improvement of the assessments due to the incorporation of data covering the whole GSA
GSA 22 (Aegean Sea, Greek part)	<i>Sardina pilchardus</i>	Fully exploited	Harvested sustainably, operating above but close to an optimal yield level, with no expected room for further expansion	Mixed fishery. ICA assessment should be taken with caution given the short time series available. Increasing trend in the estimates	Endorsed

GSA	Species	Stock status	Working Group management advice	Working Group comments	SCSA comments
				of SSB since 2004. Fishing mortality high but at a lower stage since 2004	
	<i>Engraulis encrasicolus</i>	Fully exploited	Harvested sustainably, operating above but close to an optimal yield level, with no expected room for further expansion	Mixed fishery. ICA assessment should be taken with caution given the short time series available. Increasing trend in the estimates of SSB since 2004. Average exploitation rate (last 5 yrs) =0.35, just < the empirical level for stock decline (E<0.4, Patterson , 1992)	Endorsed

General statements on demersal and small pelagic species

4. The Sub-Committee further expressed the following general statements on demersal and small pelagic species, for consideration by SAC:

- Concerning the use of absolute or relative fishing mortalities, the Sub-Committee recommended to use both values, because the absolute F is important for managers to compare different areas, while relative value is easier to understand the variations of current fishing mortalities versus the optimal ones. Nevertheless, the Sub-Committee **stresses again the need to provide to the scientists data on fishing effort** and data from the vessel monitoring system (VMS) as appropriate. This information is essential to improve the knowledge on dynamics of fishing fleets, distribution of fishing grounds and to translate the fishing mortality advices into effective fishing effort values to be recommended to the decision makers in order to reach the management objectives.
- The range of ages or lengths over which the average fishing mortality is estimated needs to be clearly stated. Furthermore, when estimated through length-based methodologies, this range should encompass only those lengths that are fully selected by the gear, to avoid under-estimation of fishing mortality.
- The increasing use of survey-based assessment approaches may require modification of the GFCM stock assessment forms in Excel to develop specific sheets for these methodologies to the demersals and small pelagics stocks (in particular to allow properly inputting the results concerning the direct acoustic or DEPM surveys).
- Several of the stocks assessed may be dynamically related with the populations found in adjacent areas and further research is required in order to verify the existence of those

connections which might affect the stock unit definitions and the assessments performed on the current GSA area basis.

- As for particular cases, SCSA recommended the following actions:
 - ✓ finalize the construction of the common database for the sardine and anchovy fisheries and direct monitoring in the Adriatic at sub-regional level;
 - ✓ realize an acoustic survey of pelagic resources off the Egyptian coasts;
 - ✓ re-enforce of the cooperation between France and Spain to actualize biological and catch and effort data collection of the two countries catching sardine in the Gulf of Lions;
 - ✓ monitor the fry fishery in the south of Sicily as the impact on the sardine fishery is unknown; and
 - ✓ consider the inclusion of *Pecten jacobaeus* from the Adriatic on the priority species table and GFCM shared stocks list.

SUB-COMMITTEE ON STATISTICS AND INFORMATION (SCSI)

5. The SCSI drew up and agreed on the following recommendations:

- Proposal to adopt the format of the logbook as finalised by the SCSI and considering the comments expressed by the participants. The draft format including the suggestions made by the CMSC is contained in Annex I to this document.
- Proposal that the first submission of data on Task 1.1, 1.2 and 1.4 by February 2010 following recommendation GFCM/33/2009/3 should concern the 2008 data.
- Proposal to define a specific data policy for the use and access of Task 1 datasets, within the framework of Recommendation GFCM/30/2006/7.
- Proposal that the GFCM Secretariat prepares during the intersessional period, information outputs and data accessibility functions to be discussed during the 2010 SCSI meeting.
- Suggestion to remove the fields regarding sex and maturity scales in the Task 1.5 variables and keep only the fields related to the size of the fish (min, max and mean of the length measures).
- Request for the translation into French of the fields description in the Task 1 data entry software before February 2010 by the GFCM Secretariat, and for the full translation into French of the software at a later stage.

SUB-COMMITTEE ON ECONOMICS AND SOCIAL SCIENCES (SCESS)

6. Following its discussions and analyses of the different contributions and information delivered, the SCESS concluded that:

- The increase in fuel prices as well as the added pressure on the fishing industry to decrease CO₂ emissions affects in a relevant way the fishing activities and the related future trends, implying a difficult scenario for the industry. This underlines the necessity that more focus should be given to this reality and highlights the need to accelerate the data collection of economic information in order to allow for reliable predictions and adaptation in the economic and social dimensions.

- Economic and social analyses of the impact of the new gear selectivity regulations can contribute to facilitate their acceptance and support, but the main effort in this area should first be developed from the biological and technological perspective. The SCESS recommended the undertaking of multidisciplinary work in this regard and is available to provide its contribution to this matter.

SUB-COMMITTEE ON MARINE ENVIRONMENT AND ECOSYSTEMS (SCMEE)

7. The SCMEE drew up and agreed on the following recommendations:

- It is proposed that the SAC be invited to ask relevant member states to provide information, including from VMS on the number of vessels fishing, and their respective number of fishing days, in 2008 in the zone delineated by the FRA in the Gulf of Lions. This information on fishing activity is very important to map the spatial distribution of the fishing effort within the FRA - to formulate further management advices.
- To investigate whether it may be better to reverse the trawling management approach, by creating in trawling grounds specific delimited areas for trawling, and have areas closed to trawlers. This approach would allow concentrating the effect of trawling on areas of the marine environment with more resilience capacity.
- To give further consideration to the list of criteria for selecting sensitive habitats, especially through the identification for each GFCM priority species the corresponding sensitive habitats as a first step. A new version of the document will be submitted to the next SCMEE meeting.
- To identify a clear procedure for collaboration between GFCM and RAC-SPA, with regards to SPAMIs that could also have potential implications for fisheries management.
- To prepare in 2010 a detailed form for data collection on endangered species bycatch to add to the Task 1 system.

SUGGESTED ACTION BY THE COMMITTEE

8. The Committee is invited to review the findings and recommendations of its Sub-Committees, ad hoc Working groups and Workshops.

9. The Committee is also invited to translate the advice provided by the Sub-Committees into multidisciplinary management measures, particularly for multispecies shared fisheries, as well as to draw up consolidated future workplan as appropriate in conjunction with agenda item 9 (document GFCM:SAC12/2010/4).

December 2009

ANNEX I

LOG SHEET No

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Country 3-alpha code

7 digit number (unique reference to the logsheet)



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▶ VESSEL(S) DETAILS⁽¹⁾

	NAME ⁽¹⁾	RADIO CALL SIGN (if any) ⁽¹⁾	EXTERNAL IDENT. ⁽¹⁾	GFCM UNIQUE IDENT. ⁽¹⁾	No CREW ⁽¹⁾	FUEL CONS. ⁽¹⁾
1						
2						

▶ MASTER(S) DETAILS⁽²⁾

	NAME ⁽²⁾	ADDRESS ⁽²⁾
1		
2		

▶ TRIP AND LANDING DATES⁽³⁾

Year⁽³⁾:

2	0		
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	DAY	MONTH	HOUR	LOCATION
Departure ⁽³⁾				From:
Return ⁽³⁾				To:
Landing ⁽³⁾				At:

▶ GEAR USED⁽⁴⁾

	GEAR CODE ⁽⁴⁾	DIMENSION 1 ⁽⁴⁾	DIMENSION 2 ⁽⁴⁾	MESH/HOOK SIZE ⁽⁴⁾	CHARACTERISTICS ⁽⁴⁾
1					
2					
3					

▶ TRANSHIPMENT⁽⁵⁾
Details of recipient vessel

NAME ⁽⁵⁾	RADIO CALL SIGN (if any) ⁽⁵⁾	EXTERNAL IDENTIFICATION ⁽⁵⁾	NATIONALITY ⁽⁵⁾	DATE OF TRANSHIPMENT ⁽⁵⁾
				day <input type="text"/> month <input type="text"/>

▶ FISHING ACTIVITY⁽⁶⁾

FISHING DATE ⁽⁶⁾	GEAR				Area	
	GEAR CODE ⁽⁶⁾	GEAR UNITS ⁽⁶⁾	Number of fishing operations ⁽⁶⁾	Fishing duration ⁽⁶⁾	GSA ⁽⁶⁾	GFCM Statistical Grid ⁽⁶⁾

▶ CATCH INFORMATION⁽⁷⁾ Mark the box inside the cell if target species

T C O A T T A C H L I S	Species name														C O T T O S A L R D S	
	(7a)	(7b)	(7c)	(7d)	(7e)	(7f)	(7g)	(7h)	(7i)	(7j)	(7k)	(7l)	(7m)	(7n)		
	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code		

⁽⁶⁾optional

▶ COMMENTS⁽¹⁾

▶ LANDING DECLARATION⁽⁸⁾

	WHL	G	GG	FIL	HD											

Transhipment⁽⁵⁾ ▶

AGENT⁽⁹⁾

Name and address ⁽⁹⁾	
Signature ⁽⁹⁾	