



**GENERAL FISHERIES COMMISSION FOR  
THE MEDITERRANEAN**

**COMMISSION GÉNÉRALE DES PÊCHES  
POUR LA MÉDITERRANÉE**



**Scientific Advisory Committee  
13th Session - Marseille, France, 7-11 February 2011**

***Main conclusions and recommendations of the  
SCSA to the SAC***

***Fabio Fiorentino – Coordinator of SCSA***

***...the activities of the Stock Assessment working groups in 2010...***

The Demersals WG..

**33 assessments and 2 related works** were presented and discussed by the Working Group held in Istanbul, Turkey (18-23 October 2010). The assessments covered **14 Geographical Subareas (GSAs) and concerned 12 Species**. **24 of them were validated (23 in overfishing/overfished and 1 fully exploited) and 9 were considered preliminary and not presented at SC.**

The Small pelagics WG...

**11 assessments and 2 related works** were presented and discussed by the Working Group held in Campobello di Mazara, Italy (1- 6 November 2010). The assessments covered **7 Geographical Subareas (GSAs) and concerned 2 Species**. **Only 2 of them were validated as analytical assessment while 9 were considered feasible just from qualitative point of view (2 stock were considered in overfishing/overfished and 7 fully or moderately exploited).**

Table 1- Assessments for demersal species, validated by the WG.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management option	WG comments	SC comments
GSA 3 (southern Alboran sea)	<i>Pagellus bogaraveo</i>	Lfreq & catch	2003-2007 (artisanal fisheries from Morocco and Spain)	LCA – Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (0.40) higher than F0.1 (0.18) and Fmax (0.37)	Decrease the fishing effort. Adopt the same management measure in GSA 05 and GSA 01. Improve the sampling standardisation. Maintain the joint assessment.	Improve the biological sampling and estimate the importance of the catches of juveniles that occur in more shallow areas by trawlers in order to improve the assessment in the case such removal be assessed as not negligible. The WG endorses the assessment and recommendations.	No further comments. Endorsed
	<i>Parapenaeus longirostris</i>	Catch & effort	2000-2009	Schaefer Surplus production	Over-exploited; Fcurr/F0 = 392% Fcurr/Fmax = -353%	It was recommended to decrease the fishing mortality by 60-80%. The abundance indexes observed during surveys indicate a decrease of this resource	The WG recommend extending the assessment of the <i>Parapenaeus</i> stock including the data from other adjacent areas (Spanish and Algerian areas). The WG endorses the assessment and the related recommendations	No further comments. Endorsed
	<i>Boops boops</i>	Lfreq & catch	2000-2009	LCA – Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (0.90) higher than F0 (0.61) and Fmax (0.75)	Reduce the fishing mortality and control the trawling ban in coastal water	No sign of depletion is evident. The fishing mortality can be reduced limiting the moving of trawlers from the Atlantic to the Mediterranean. The WG endorses the assessment and the related recommendations	No further comments. Endorsed
	<i>Mullus barbatus</i>	Lfreq & catch	2004-09	LCA – Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (0.68) higher than F0 (0.55) and Fmax (0.56)	Reduce the fishing mortality and control the trawling ban in coastal water	No sign of depletion is evident. The fishing mortality can be reduced limiting the moving of trawlers from the Atlantic to the Mediterranean. The WG endorses the assessment and the related recommendations	No further comments. Endorsed

GSA 05 (Balearic islands)	<i>Merluccius merluccius</i>	Catch, effort, Lfreq catch, Trawl surveys	1980-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.85) higher than F0.1 (0.20) and Fmax (0.31)	Reduce fishing mortalities by 30 to 50% trough reducing the effort activity and improving the selection pattern of the fishery.	Explore the parameterisation of XSA (the contribution of each tuning fleet in the model) and run sensitivity analysis on its effects. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Mullus surmuletus</i>	Catch, effort, Lfreq catch, Trawl surveys	2000-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.60) higher than F0.1 (0.38) and lower than Fmax (0.74)	Reduce fishing mortalities by 30% to 50% trough reducing the effort activity and improving the selection pattern of the fishery.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Mullus barbatus</i>	Catch, effort, Lfreq catch, Trawl surveys	2000-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.82) higher than F0.1 (0.33) and Fmax (0.55)	Reduce fishing mortalities by 40% to 60% trough reducing the effort activity and improving the selection pattern of the fishery.	Explore the parameterisation of XSA (the contribution of each tuning fleet in the model). The WG group noticed that while SSB appears increasing, recruitment time series suggest an increasing trend. The WG suggest performing sensitivity tests for defining the influence of input biological parameters in the results. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Nephrops norvegicus</i>	Catch, effort, Lfreq catch, Trawl surveys	2002-2008	LCA – Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (0.45) higher than F0.1 (0.30) and lower than Fmax (0.63)	Decrease fishing mortality by 20-30% by: - Reducing effort both in capacity and/or activity - Improving the	Perform a sensitivity analysis. The WG endorses the assessment and the related recommendations	No further comments. Endorsed

GSA 05								
						selection pattern of the fishery - implementing area closures for fishing		
	<i>Aristeus antennatus</i>	Catch, effort, Lfreq catch, Trawl surveys	1992-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.62) higher than F0.1 (0.33) and lower than Fmax (0.76)	Reduce fishing mortalities by 30% to 50% through reducing the effort activity and improving the selection pattern of the fishery. Implementing area closures for fishing in the nursery areas during the recruitment period	Evaluate the effect of the biological parameters running XSA with sex combined data. Explore the parameterisation of XSA (the contribution of each tuning fleet in the model). The WG endorses the assessment and the related recommendations	No further comments. Endorsed
	<i>Parapenaeus longirostris</i>	Catch, effort, Lfreq catch, Trawl surveys	2000-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited	The problems framed with the residuals and the retrospective analysis makes not possible to provide a full management advice.	The WG agrees that the stock is overfished but some uncertain do not allow to suggest an available value to reduce the actual fishing mortality. The WG endorses the assessment as a source of general information of the stock.	The assessment must be considered as a rough estimation of the stock status to be verified

GSA 06 (northern part of northern Spain)	<i>Merluccius merluccius</i>	Catch, effort, Lfreq catch, trawl survey	1995-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (1.70) higher than F0.1(0.60)	Reduce growth overfishing through: - Reduce the effort of trawl. - Improve the fishing pattern of the trawl fleets.	The stock show dangerous signals of recruitment overexploitation due to the decreasing trend in recruitment and	No further comments. Endorsed
						To avoid recruitment overfishing: - Reduce effort in trawl 70% - Especial surveillance in the use of 40 mm square mesh size in the cod-end in trawl gears. - Encourage studies to allocate area closures to fishing (Fishing Reserves).	very low levels of the spawning stock. The WG endorses the assessment and the related recommendations	
	<i>Mullus barbatus</i>	Catch, effort, Lfreq catch, trawl surveys	1998-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.76) higher than F0.1 (0.30)	Decrease the fishing effort 70%. More effective control in shelf areas above 50 m depth to reduce the catch of small individuals under the minimum legal size. The use of the 40 mm square mesh in the cod-end should improve trawl exploitation pattern and Y/R by 24%, but a close supervision of the observance of this measure is needed.	Co-occurrence of SSH increasing and recruitment decreasing. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Parapenaeus longirostris</i>	Catch, effort, Lfreq catch, trawl surveys	2001-2009	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (1.37) higher than F0.1(0.30) and lower than Fmax (2.73)	Reduce growth overfishing: - Reduce the effort of trawl by 70%. - Improve the fishing pattern of the trawl.	Since there are some evidences of synchronous oscillation of abundance of the species in the western Mediterranean, environmental factors (e.g. water	No further comments. Endorsed

GSA 07 (Gulf of Lions)	<i>Merluccius merluccius</i>	Catch, effort, Lfreq catch, trawl surveys	1998-2009 (French and Spanish data from trawlers, gillnetters and longliners)	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (0.87) higher than F0.1(0.20) and Fmax (0.29)	Reduce fishing mortality by 60% to 70% to reach the Fmsy proxy F0.1. To reduce growth overfishing: - Improve the fishing pattern of the trawl - close nursery areas at least temporarily - Reduce the effort of trawl, from reducing time at sea, number of fishing boats, engine power, bollard pull and/or trawl size To avoid recruitment overfishing: - Reduce the effort of longline and gillnets in order to increase (or at least maintain) the SSB. - Establish temporal closures for longline and gillnet during the period of maximum spawning	The trend of the SSB does not show any risk of stock depletion or collapse. The parameterization of the XSA model may have an impact on the results obtained. To identify the extension of such decisions, further work must be done to explore different parameterizations of the model and run sensitivity analysis on its effects. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Mullus barbatus</i>	Catch & Lfreq of catch	2004-2009	Pseudocohort (LCA, VIT), Y/R	Slightly over exploited	Current F has to be reduced by 30-40% to reach F0.1.	The WG endorsed the assessment and recommendations	Since the current F (0.7) is higher than F0.1 (0.4) and Fmax (0.5), the Sub-Committee recommends to not use the attribute "slightly" in identifying the stock status. Endorsed

GSA 09 (Ligurian and north Tirrenian)	<i>Merluccius merluccius</i>	Lfreq Catch Surveys data	1994-2009	LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	Over-exploited; current F (1.40) higher than F0.1 (0.22) and Fmax (0.35)	The stock appears to be highly overexploited with a need of F reduction of about 40-80%.The current SSB is estimated as 5% and 10% of the virgin SSB, nevertheless, the stock productivity does not appear to be impaired and able to still produce relatively large year classes.	The group noticed a decreasing trend of the SSB for both assessments performed with SURBA on 2 different surveys (MEDITS and GRUND). The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Mullus barbatus</i>	Catch, effort & trawl surveys	1995-2009	Non-equilibrium production model	Over-exploited; current F (0.73) higher than FMSY (0.64)	A reduction of about 10% is considered necessary in order to reach the Fmsy level.	The WG endorsed the assessment and recommendations	No further comments. Endorsed
	<i>Parapenaeus longirostris</i>	Catch, effort, Lfreq Catch & trawl surveys	1990-2008	LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	Fully -exploited	Not increase the fishing mortality	This stock could be strongly driven by environmental and ecological factors (e.g. water temperature, predatory release effect) that can make difficult to evaluate the effect of fishing on the stock. The WG endorses the assessment and the related recommendations but notes that only the reference points computed by VIT should be considered for management.	No further comments. Endorsed

GSA12,13,14,15&16 (Strait of Sicily)	<i>Parapenaeus longirostris</i>	LFD of catch	2007-2009	LCA – Pseudocohort analysis (VIT & ANALEN) Y/R ;	Over-exploited; current F (1.13) higher than F0.1 (0.90) and lower than Fmax (1.25)	A reduction of about 20% is considered necessary in order to reach the F0.1 level. In addition the exploitation pattern of the fishery should be improved. A protection of the stable nurseries on the Adventure and Malta Banks in the Strait of Sicily is advised	A change in M and k has pronounced effect on Y/R when the variation was applied in opposite directions. On the other hand B/R and SSB/R are not strongly affected when the change is in the same direction. Alternative methods such as global production methods and trawl survey based approach should be used in the future to make the assessment more robust. The WG endorses the assessment and the related recommendations	No further comments. Endorsed
CSA 17	<i>Solea solea</i>	Catch, effort, LFD, rapido surveys	2005-2009	Extended Survivor Analysis (XSA), LCA – Pseudocohort analysis (VIT) & Y/R ; SURBA	Over-exploited; current F (0.61) higher than F0.1 (0.29) and Fmax (0.42)	A reduction of F of 50-80%, especially by rapido trawling, would be recommended. A two-months closure for rapido trawling inside 11 km off-shore along the Italian coast after the biological fishing ban (August), would be advisable to reduce the portion of juvenile in the catches. The safeguard of spawning area is also advised	include in the future assessments biological samples data from the eastern fishery as well as to extend the rapido trawl survey inside the 12 nm from the Croatian coast, as was performed in 2005 and 2006. Such requirements could be attained in the framework of ADRIAMED regional project.	No further comments. Endorsed

GSA	Species	Data type	Years	Methodology used	Stock status	Management options	WG comments	SC comments
GSA18 (Southern Adriatic)	Hake	Trawl surveys and commercial catch	LDF and abundance from Medits (from 1996 to 2009 for Italian and Albanian coasts and 2008 only for Montenegro). LFD of catch only for the west side in 2009	SURBA, ALADYM and VIT	Over-exploited Fcurrent(year) = 0.57-0.58 F0.1=0.2 Fmax=0.3	-reduce the fishing mortality .  -improve the exploitation pattern	The WG discuss the use of the slow or fast growth parameters to assess the hake stock and of the sensitivity analyses. The WG highlight that for this assessment, the outputs of SURBA are better than those coming from VIT (only one year data). The results from VIT are used as indicative.	No further comments. Endorsed.

GSA 26 (South Levant)	<i>Solea solea</i>	LFD of catch	2006-2007	LCA - Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (0.66) higher than F0.1(0.41) and lower than Fmax (0.81)	Reduce fishing mortality by about 40- 50% to achieve F0.1. Improve the trawl selectivity. Identify and protect the nursery grounds. Improve the fishery data collection system.	As the assessment was done at first using three years 2006-2008 and it was found that the length composition of year 2008 is greatly different from the two others, the assessment was redone using the mean number of years 2006-2007. The WG endorses the assessment and the related recommendations	No further comments. Endorsed
	<i>Boops boops</i>	LFD of catch	2007-2008	LCA - Pseudocohort analysis (VIT) Y/R	Over-exploited; current F (1.09) higher than F0.1 (0.59) and Fmax (0.94)	Reduce the fishing mortality by 40-60%	The WG endorses the assessment and the related recommendations	No further comments. Endorsed
	<i>Pagellus erythrinus</i>	LFD of catch	2007-2008	LCA - Pseudocohort analysis (VIT) & Y/R	Over-exploited; current F (0.65) higher than F0.1 (0.34) and Fmax (0.57)	Reduce the fishing mortality by 40-60%. Identify and protect nurseries	The WG endorsed the assessment and recommendations.	No further comments. Endorsed

Table 2 – Assessments for small pelagic species validated by WG

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 01 (Alboran Sea)	<i>Engraulis encrasicolus</i>	Lfdq & catch	2002-2006	Extended Survivor Analysis (XSA), Y/R analysis & Annual exploitation rate	Moderately exploited Sustainable fisheries	Not increase the fishing effort. The management of anchovy fisheries needs to account the multi- species effects, mainly the interaction with sardine.	The WG considers the analytical assessment as provisional. The WG endorsed the assessment and recommendations.	No further comments. Endorsed
	<i>Sardinia pilchardus</i>	Lfdq & catch	2002-2006	Extended Survivor Analysis (XSA), Y/R analysis & Annual exploitation rate	Fully exploited Sustainable	Not increase the fishing effort. The management of sardine fisheries needs to account the multi-species effects, mainly the interaction with anchovy.	The WG considers the analytical assessment as provisional. The WG endorsed the assessment and recommendations.	No further comments. Endorsed
GSA 3 (southern Alboran sea)	<i>Sardinia pilchardus</i>	Catch, effort, Lfdq catch,	2000-2009	Pseudocohort (LCA, VIT), Y/R	full exploitation; current F (0.6) higher than F0.1/Fc=0.62 and lower than Fmax/Fc=1.86  Uncertain biomass	- Maintain the current fishing effort; - Reduce the mortality of fishing on the spawning fish - Introduce seasonal closure during January which coincides with the peak of the spawning; - Prohibit fishing during May near Short-nap close Kebdana to preserve the young fish.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

CSA 05 (northern part of northern Spain)	<i>Engraulis encrasicolus</i>	Catch, effort, L.freq catch,	2002-2009	Extended Survivor Analysis (XSA), Y/R analysis & Annual exploitation rate	The stock abundance is considered as low, while the exploitation rate is uncertain.	Avoid further reduction in SSB	The WG considers the analytical assessment as provisional. The WG endorsed the assessment and recommendations	No further comments. Endorsed
	<i>Sardina pilchardus</i>	Catch, effort, L.freq catch,	2002-2009	Extended Survivor Analysis (XSA), Y/R analysis & Annual exploitation rate	Overexploited  The stock has declined over many years, partly due to reduced recruitment and partly to poor survival of the recruits. Most likely, the stock has been increasingly overexploited in recent years	A substantial reduction in exploitation is advised.	The WG considers the analytical assessment as provisional. The WG endorsed the assessment and recommendations the related recommendations.	No further comments. Endorsed

GSA 07 (Gulf of Lions)	<i>Engraulis encrasicolus</i>	Echosurveys and catch	1998-2009	Biomass at sea and harvest ratio (Catch/Biomass)	Fully exploited - moderate harvest ratio.  Low biomass	- Reduce fishing effort on anchovy in the Gulf of Lion - Respect the European regulation on minimum length size of catch (>9 cm, UE 1976/2006) - Consider interactions with sardine fisheries.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Sardina pilchardus</i>	Echosurveys and catch	1998-2009	Biomass at sea and harvest ratio (Catch/Biomass)	Moderately exploited  Severely reduced production capacity	- Strongly reduce fishing effort on sardine in the Gulf of Lion; - Formalize and establish a protocol of "sentinel" activity for fishermen, and produce monthly spatial and temporal observations to describe the evolution of the system, - Respect the European regulation on minimum length size of catch (11 cm, UE 1976/2006. - Consider interactions with anchovy fisheries.	The WG endorsed the assessment and recommendations	No further comments. Endorsed

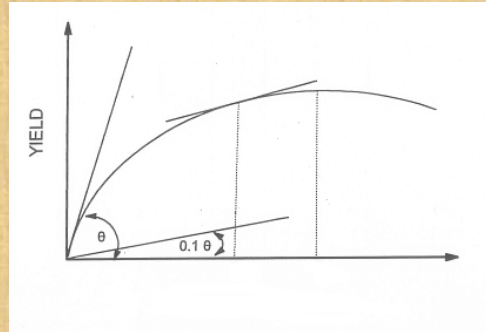
GSA 16 (Strait of Sicily)	<i>Engraulis encrasicolus</i>	Echosurveys and catch	1998-2009	Biomass at sea and harvest ratio (Catch/Biomass)	Exploitation rate (ratio between total landings and biomass estimates): high fishing mortality.  Stock abundance (acoustic biomass estimate): very low abundance.	- Not increase the fishing effort;  - Assess the impact of fry fishery may have.  - Not extend fry sardine fishery after March to avoid additional mortality on juvenile anchovy.	Negative effects on these populations could result from pressure of other fishing gears on pre-juvenile stages (locally known as "bianchetto" or "aconata"). The WG endorses the assessment and the related recommendations	Since the stock is characterised by both high exploitation rate and low biomass the SC recommends to change "not increase the fishing effort" into "decrease the fishing effort". Endorsed with this modification
	<i>Sardina pilchardus</i>	Echosurveys and catch	1998-2009	Biomass at sea and harvest ratio (Catch/Biomass)	Exploitation rate (ratio between total landings and biomass estimates): moderate fishing mortality  Stock abundance (acoustic biomass estimate): low/intermediate abundance.	- Not increase the fishing effort;  - Assess the impact of fry fishery. As the impact of fry fishery on this population is not known, a proper quantification of the catches in the fry fishery is mandatory.	Over the last four years the population appears to be stable though at a relatively low level. However, taking into account the moderate exploitation rates experienced, results would suggest the stock being able to tolerate the current level of exploitation.	No further comments. Endorsed

GSA 17	<i>Engraulis encrasicolus</i>	Catch, effort, LFD, rapido surveys	1975-2009	VPA with Laurec-Shepperd tuning	The stock at the present level of biomass can be considered as moderately exploited	- Not increase the fishing effort.  - Consider the interactions with sardine fisheries.	In the present assessment, important improvements were made regarding the echo-survey data used as tuning index for VPA: in particular, for the first time, biological data from the western Adriatic were used to split into age classes only the abundance estimated by the western echo-survey, while biological data from the eastern Adriatic were applied to the eastern echo-survey abundance.	No further comments. Endorsed
	<i>Sardina pilchardus</i>	Catch, effort, LFD, rapido surveys	1975-2009	VPA with Laurec-Shepperd tuning	The stock at the present level of biomass can be considered as moderately exploited	- Not increase the fishing effort.  - Consider the interactions with anchovy fisheries.	In the present assessment, important improvements were made regarding the echo-survey data used as tuning index for VPA: in particular, for the first time, biological data from the western Adriatic were used to split into age classes only the abundance estimated by the western echo survey, while biological data from the eastern Adriatic were applied to the eastern echo-survey abundance.	No further comments. Endorsed



**... recommendations on the use of biological indicators, development of reference points and stock assessment...**

- Considering that MSY has been adopted in many international as an agreed reference point for sustainable fisheries, the SC adopted FMSY or its proxy  $F_{0.1}$ , the fishing mortality corresponding to the 10% of the slope at Y/R curve when  $F=0$ , as **provisional Target Reference Point** and  $F_{max}$ , the fishing mortality corresponding to the maximum in a Y/R curve, as **provisional Limit Reference Point** to compare with the current fishing mortality and evaluate the exploitation status of the stock.



.... An analytic approach to BRP for assess stock status

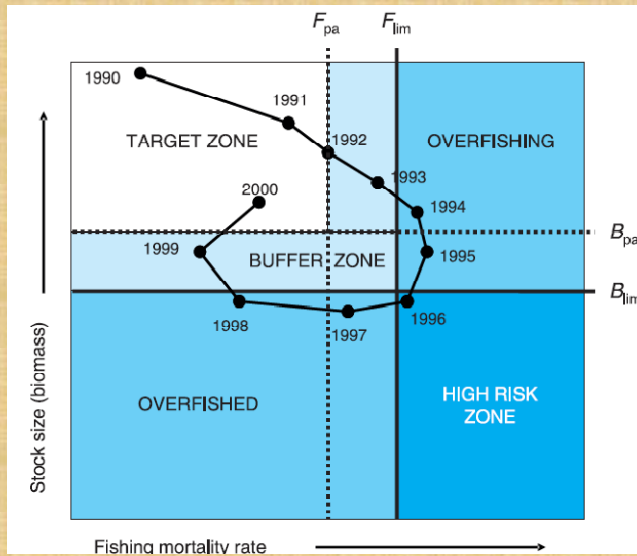
**An empirical multi-criteria approach to assess the stock status in small pelagics**

INDICATORS OF ENVIRONMENT AND ECOSYSTEM	STOCK CONDITION (based on annual surveys)		
	HEALTHY STOCK CONDITION	BIOMASS BELOW $B_{pr}$	BIOMASS BELOW $B_{lim}$
habitat/environmental conditions satisfactory	May increase capacity	maintain capacity constant	Close the fishery in this subarea
Evidence of deteriorating productivity	maintain capacity constant	Seek to reduce capacity or days fished	Close the fishery in this subarea
Habitat/ environmental conditions unsatisfactory	Seek to reduce capacity or days fished	Close the fishery in this subarea	Close the fishery in this subarea

In absence of formal BRP, an empirical approach combining stock status (Biomass from surveys) and pressure indicators (harvest ratio and/or an adequate proxy of environmental stress), in a Traffic Light scheme, is recommended as a proper assessment framework.

In order to identify Biological Reference Points these indicators could be preliminary scaled according to a quartile approach.

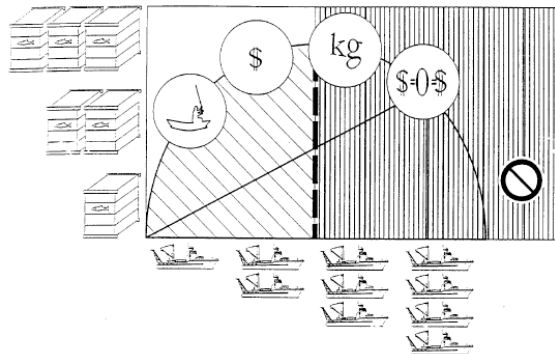
- The Sub-Committee recommended to use in next assessments the word "Overfished" when dealing with Biomass and "Overfishing" when dealing with to fishing mortalities and to modify in this sense the Glossary.



The history of a hypothetical fishery monitored over time for both biomass-related and fishing-related indicators..

### Different goals in fishery management

- Yield
- Income
- Labour
- Biodiversity
- .....



...an effective management strategy should be assign priority to goals or combination of goals (multi-objective management)... people involved in assessment should to know clearly the objectives for different fisheries.

*..main general recommendations and scientific advice for next assessments..*

- The Sub-Committee recommended to improve **information on selectivity curves** and include **model relating cod-end mesh size to retention at fish size** in future assessment in order **to simulate variation in the exploitation pattern**.
- The SC recommended **the usage of several models** applied to the same stock as an approach to support the analyses and evaluate the **robustness of the advice** being given. In general it was always recommended to support the advice with all the information available, **including scientific survey information** as source of external information of the **biomass trends**, in particular to check for possible downwards trends on recent years.
- The SC advised to improve the correct identification of the **stocks boundaries and units**.

*..progress on the revision of the stock assessment forms..*

The SC reviewed and validated the proposal for **8 new sheets of the Surveys at sea data**, presented and discussed at WG.

- 1) SAF Sheet TS1 Direct methods: **trawl based abundance indices**
- 2) SAF Sheet TS 2 Direct methods: **trawl based length/age structure of population**
- 3) SAF Sheet TS 3 Direct methods: **trawl based mortality rates**
- 4) SAF Sheet TS 4 Direct methods: **trawl based recruitment analysis**
- 5) SAF Sheet TS 5 Direct methods: **trawl based spawner analysis**
- 6) SAF Sheet DEPM Direct methods: **Daily Egg Production Model**
- 7) SAF Sheet AS1 Direct methods: **Acoustic based biomass and number of population**
- 8) SAF Sheet AS 2 Direct methods: **Acoustic based length/age structure of population**

Detail on Appendix III of the SCSA Report (GFCM:SAC13/2011/Inf.8).

***...review of the conclusions and recommendations of the transversal workshop on European eel...***

The SC agreed that it is not the proper time to form a Permanent Working Group on European Eel given the shortage of scientific information available at present. Instead **a network of experts should be established and a tight collaboration with the working group on Eel management of EIFAC/ICES** is advised.

To complete the data gathering and to assemble the scattered information in the countries, the SC suggested the following actions to be undertaken :

- 1) **Gather and synthesize information** on the **regulations** (Fisheries and Habitat conservation) **by countries** and on the biological parameters by **habitat** in coordination with the LAMED project (executed by GFCM Secretariat and funded by Italy)
- 2) **Collate and analyze main information useful for the Eel MPs** as described in the GFCM draft publication on European eel as presented to the sub committee meeting. The raw data shall be transmitted to the GFCM secretariat.
- 3) Initiate **the setting up of a network of Mediterranean experts on eel fisheries** in collaboration with the working group on Eel management of EIFAC/ICES

***...review of the conclusions and recommendations of the transversal workshop on the Elasmobranches...***

- the SCSA encourages to progress on the evaluation of elasmobranches stock by using the **less data demanding approaches**.
- **Productivity and Susceptibility Analysis (PSA)**, at communities level, as well as **Yield and biomass per recruit Beverton & Holt type model and Composite Surplus Production model**, at single species level, have been suggested.
- The availability of **trawl surveys data** for wide areas of the Mediterranean, allow **assessing** some species of demersal elasmobranches by simple global or B&H type models.

- The SCSA agreed with the SCMEP proposal to carry out assessments on selected Mediterranean and Black Sea **elasmobranchs stocks in an ad hoc WG.**
- The SC propose that inside the activity of the **next WG on demersal species** for which information to assess stock status are already available, such as ***Raja clavata*, *Raja miraletus*, *Raja asterias* and *Scyliorhinus canicula***, could be assessed in 2011.

- the SCSA retains that, since elasmobranchs are mainly by-catch of fisheries targeted to other species or caught in multispecies fisheries, a **management strategy to mitigate the effect of fisheries to elasmobranchs** should be pursued.
- To reach the objectives of this strategy, the **adoption of circular hook for pelagics, the grid and separator for demersals (selectivities and by catch WG) and the protection of nurseries as general tool**, are recommended as main measures.

*...review of the conclusions and recommendations of the transversal workshop on selectivities and by catch...*

- The SCSA recommends to perform the experiments not only for comparing square/diamond mesh selectivity, but also a wider range of square meshes sizes in order to obtain **models relating mesh size to retention at size**.
- The SCSA suggests to consider in the experiments also the effect of **separator panels in reducing the occurrence of debris and litters** in the trawl net.

*...some proposals for new transversal activities...*

- Due to the increasing use of fishery restricted areas (FRA) in management and conservation framework, the SCSA recommended to investigate the role of **spatial based approach to fishery management**. The SCSA suggests strong link with **SCMEE** and **SCESS** in pursue this activity
- Concerning the development of the task 1.5, the SCSA deemed **the creation of a specific task 2, containing data on biological characteristic (length, age, sex, maturity) of catch, both in terms of landing and discard**, should be more effective than the inclusion of this information in task 1. This new task 2 should have the possibility to exchange data and information with the **task1**, the data base on **biological parameters** and information and the **Stock Assessment Forms**. This activity should be integrated with the **SCSI**.

*Thank you for the attention*