JRC Scientific and Technical Reports

37th PLENARY MEETING REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-11-02)

PLENARY MEETING, 11-15 July 2011, Copenhagen

Edited by John Casey & Hendrik Doerner

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

European Commission
Joint Research Centre
Institute for the Protection and Security of the Citizen

Contact information
Address: TP 051, 21027 Ispra (VA), Italy
E-mail: stecf-secretariat@jrc.ec.europa.eu
Tel.: 0039 0332 789343
Fax: 0039 0332 789658

https://stecf.jrc.ec.europa.eu/home
http://ipsc.jrc.ec.europa.eu/
http://www.jrc.ec.europa.eu/

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PLENARY MEETING

11-15 JULY 2011, COPENHAGEN

1. INTRODUCTION

The STECF plenary took place at the Institute of Food and Resource Economics (FOI), Copenhagen University, Frederiksberg (Denmark), from 11 to 15 July 2011. The Chairman of the STECF, Dr John Casey, opened the plenary session at 14:00h. The terms of reference for the meeting were reviewed and the meeting agenda agreed. The session was managed through alternation of Plenary and working group meetings. Rapporteurs for each item on the agenda were appointed and are identified in the list of participants. The meeting closed at 16:00h on 15 July.

2. LIST OF PARTICIPANTS

The meeting was attended by 25 members of the STECF, three external experts, three DG-Maritime Affairs and Fisheries (MARE), three JRC experts, and two members from the STECF secretariat. Section 11 of this report provides a detailed participant list with contact details.

The following members of the STECF informed the chairman and secretariat that they were unable to attend the meeting:
Delaney, Alyne
Graham, Norman
Jennings, Simon
Kenny, Andrew
Kuikka, Sakari
Murua, Hilario
van Oostenbrugge, Hans

3. INFORMATION TO THE PLENARY

3.1. STECF Discussion, possible modifications and possible agreement on STECF internal rules and STECF protocols

P. Daniel (DG MARE) informed the STECF plenary that he will move to a new professional position by 18 of July 2011. From 18 July onwards and until a new focal person for the coordination of the STECF is nominated by the DG Mare, communications on the STECF work programme will have to be sent to C. López Benítez in DG Mare Unit A2.

The secretariat reiterated the information that the dates of two Expert Working Groups meetings have been changed. The STECF work-programme has been updated accordingly as follows:

EWG 11-13: Ecosystem Approach to Fisheries Management: will now be convened from 16-20 January 2012 (Rennes)

EWG 11-20: Assessment of Mediterranean Sea stocks - part 3: will now be convened from 16-20 January 2012 (venue to be decided).

Registrations and issuing of official invitations for these meeting have to be complete before 20 December 2011 as the budgets for these meetings are part of the 2011 budget.

4. STECF INITIATIVES

4.1. Slot in reserve pending possible discussion on increasing communication with stakeholders especially with respect to participation in EWGs. We will address it if we can make the time.

This item has been deferred until further notice because of a lack of opportunity for discussion during the present plenary meeting.

5. ASSESSMENT OF STECF EWG REPORTS

5.1. STECF EWG 11-04 on the economic performance of European fishing fleets

Terms of Reference

STECF is requested to review the report of the **STECF-EWG-11-04** Working Group of May 23 - 27, 2011 (JRC, Ispra, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

The draft 2011 Annual Economic Report on the Economic performance of the European fishing fleet (AER 2011) was presented to the Committee by John Anderson from the JRC. The report will

be finalised and reviewed by the STECF by written procedure and adopted no later than the first week of September.

STECF observations

STECF notes that the procedures for automatic and manual checks introduced by the JRC have improved data coverage and quality. Furthermore, technical guidelines were also introduced by the JRC on clustering to protect confidentiality of economic data. However, STECF notes that some Member States did not interpret and/or follow the guidelines correctly and as a result, the consistency of time series has been compromised in some cases.

The presentation of results of the first draft of AER 2011 raised issues in relation to the consistency of approach to capital value estimation across Member States. STECF notes that a DCF workshop was held in Naples, June 2011 with the aim to produce guidelines for the PIM application.

STECF recommendations

STECF recommends that JRC continues to further enhance the useful data checks that are routinely carried out.

STECF recommends that in future two EWG meetings are convened to produce the Annual Economic Report. An initial EWG should focus on a review of the data and a second should be solely dedicated to analysis, discussions and drafting of the report. The process should be managed so that the AER can be finalised and approved at the STECF summer plenary.

STECF recommends that EWG 11-18 on economic data quality issues review the current guidelines with respect to clustering. The guidelines should be amended where appropriate to encourage Member States to adopt a common and consistent approach. It would be extremely useful if the JRC could distribute the revised guidelines ahead of the 2012 fleet economic data call, so that Member States can seek clarification on the advised procedures before the data call is launched.

STECF also recommends that the next call for fleet economic data only includes data collected under the DCF, thus covering 2008, 2009 and 2010.

STECF strongly recommends to the Commission that the AER 2011 report should be published without delay in accordance with Article 12 (paragraph 3) stating that "*Opinion of the STECF shall be published on the Commission's website without delay subject to the need for commercially confidentiality*". This would also ensure that parts of the report's content, i.e. short-term forecasts, are not already outdated at the time of publication.

STECF also recommends that a summary document is published in line with the recommendations made by STECF in its report of the 2011 spring plenary meeting (STECF PLEN 11-01).

STECF recommends that the main conclusions and the guidelines provided by the DCF Capital workshop report are reviewed by EWG 11-18 together with the conclusions of the DCF metier workshop, Hamburg, July and the forthcoming DCF statistical workshop, Lisbon, September.

5.2. STECF- EWG 11-05 on assessment of Mediterranean stocks and fisheries – part 1

Terms of Reference

STECF is requested to review the report of the **STECF-EWG-11-05** Working Group of of May 23 - 27, 2011 (Isola di Ponza, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF observations

The report of EWG 11-05 is available here https://stecf.jrc.ec.europa.eu/reports/medbs. The EWG-11-05 has provided quantitative stock assessments for several Mediterranean stocks not previously assessed, and updated assessments for several stocks using the most recent data available. STECF notes that with the exception of two items (ToR L -influence of sea-bottom temperature on trawl swept-area estimations and ToR H – 'R'-scripts to evaluate MEDITS and other CPUE data series), all other ToRs were successfully addressed. EWG-11-05 was unable to respond to items L and H due to the non-availability of the experts that had been invited to attend the WG.

STECF notes that the assessments and management advice provided in the present report are limited to the Geographical Sub-areas (GSA) off Spain, Italy and Malta since no experts from Cyprus, France, Greece and Slovenia were able to attend the meeting. The assessments were constrained by the availability of fisheries data up to and including 2009 and survey data up to and including 2010. Data updates including years 2010 and 2011 were not available to the experts as the meeting was held quite early in 2011 before the 2011 DCF data was published.

STECF notes that the EWG 11-05 found the participation of the two observers from France (IFREMER and French Administration) extremely helpful in dealing with the evaluation of the French management plans.

STECF conclusions

STECF draws the following conclusions from the EWG-11-05 report.

Stock assessments: ToRs (A-E)

Assessment of Mediterranean exploited stocks and fisheries, were addressed by revising assessments undertaken by the expert group in 2010 and assessing the status of stocks which had not been previously assessed. A total of twelve assessments were carried out and for nine stocks. Their exploitation status was analytically assessed and evaluated against the proposed F_{MSY} reference point. If appropriate data are available, additional stock and fisheries assessments will be carried out during the next two EWG meetings scheduled for 26-30 September 2011 and 16-20 January 2012. Short and medium term predictions of stock biomass and catches will also be attempted.

Results of assessments carried out for European hake (*Merluccius merluccius*), red mullet (*Mullus barbatus*), and blue and red shrimp (*Aristeus antennatus*) in GSA 01, and for blue and red shrimp *Aristeus antennatus*, spottail mantis shrimp *Squilla mantis*, striped red mullet *Mullus surmuletus*, and blackmouth catshark *Galeus melastomus*) in GSA 9 indicate that in 2009, fishing mortality (F) on all of these stocks was above $F_{msy.}$. The status of the pink shrimp (*Parapaeneus longirostris*) stock in GSA 11 could not be assessed due to data limitations. A revised assessment for common sole (*Solea solea*) in GSA17 based on survey data only, also indicated that overfishing is occurring

on this stock ($F \geq F_{msy}$). STECF considers that this finding is provisional and the stock status will be reassessed during one of the forthcoming EWGs scheduled for late 2011 and early 2012, assuming that appropriate fishery dependent data are made available.

A summary of the stock assessment results from the STECF-EWG 11-05 report is given in Table 5.2.1.

Table 5.2.1. Summary of assessment results by stock, method used, reference points and current exploitation status (Diagnosis).

Species	GSA	Assesment	Period	Method	Management Reference points	Diagnosis
European hake (*Merluccius merluccius*)	1	Updated	(2008-2009)	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.21$ as limit reference point (F_{MSY} proxy)	overfishing
Red mullet (*Mullus barbatus*)	1	Updated	(2008-2009)	Length Cohort Analysis (VIT software); Y/R	$F_{0.1}=0.52$ as limit reference point (F_{msy} proxy)	overfishing
Red shrimp (*Aristeus antennatus*)	1	New	(2005-2009)	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.29$ limit reference point (F_{MSY} proxy)	overfishing
Red shrimp (*Aristeus antennatus*)	9	New	(2006-2009)	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.32$ limit reference point (F_{MSY} proxy)	overfishing
Spottail mantis shrimp (*Squilla mantis*)	9	New	2009	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.64$ as limit reference point (F_{MSY} proxy)	overfishing
Striped red mullet (*Mullus surmuletus*)	9	New	2010	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.31$ as limit reference point (F_{MSY} proxy)	overfishing
Blackmouth catshark (*Galeus melastomus*)	9	New	2009	Length Cohort Analysis (VIT software); Y/R	$F_{0.1} \leq 0.12$ as limit reference point (F_{MSY} proxy	overfishing
Pink shrimp (*Parapaeneus longirostris*)	11	New	(1994-2009)	SURBA (1994-2009); VIT (2009); Y/R	$F_{0.1} \leq 0.82$ as limit reference point (F_{MSY} proxy)	Not conclusive
Common sole (*Solea solea*)	17	Updated	(2005-2010)	Catch curve analyses (Z trends); SURBA ; VIT ; Y/R	$F_{0.1} \leq 0.26$ as limit management reference point (F_{MSY} proxy)	overfishing

Quality of data from 2010 DCF data call ToR F

STECF concludes that the various comments and remarks on data quality and data inconsistencies provided in the report of the EWG 11-05 should be communicated to DG Mare and MSs for consideration.

STECF notes that EWG 11-05 tested empirical biological indicators and methodologies for stock assessments lacking standard data requirements (**ToR G**). STECF concludes that the SEINE method (Gedamke & Hoenig, 2006) is an appropriate method to estimate total mortality rates (Z) when only length composition data are available, provided that the input data are representative of the full size range of the population. STECF concludes that the method can provide robust estimates of Z in cases where both adults and juveniles from a stock are effectively sampled. In cases where

juveniles or adults are not representatively sampled by the gear, which tends to be the case for species attaining a larger size, the method is less reliable.

STECF agrees that the demersal fisheries in the Mediterranean are primarily mixed-species fisheries. STECF also shares the opinion of the EWG 11-05 that fishery-specific effort ceilings in mixed demersal fisheries in the Mediterranean could substantially contribute to achieve and maintain sustainable exploitation rates. This is consistent with previous advice from STECF and is in accordance with the GFCM resolution GFCM/33/2009/1. However, STECF notes that in some circumstances, management of demersal mixed fisheries to achieve sustainable exploitation rates in line with MSY objectives through effort regulation alone may be inadequate. For example, for species that exhibit aggregating behaviour, effort limitations may be insufficient to control the exploitation rate if the fisheries are able to locate the aggregations. In such cases, alternative or complimentary measures such as technical measures to make the fishing gear more species- or size-selective may be required. STECF concludes that the management of demersal mixed fisheries in the Mediterranean to achieve simultaneous objectives is a complex issue and in order to continue to provide informed advice, the EWGs dealing with Mediterranean fisheries should continue to assess the likely outcomes of alternative management strategies.

STECF notes that EWG 11-05 also reviewed a National management plan submitted by the French Authorities for the fishing fleets operating in the French Mediterranean (**ToR L**). STECF concludes that while the French submission provides a detailed description of the different métier, the information on the conservation status and the biological characteristics of the stocks is rather limited, and the impacts of small-scale fishing gears operating in coastal waters on habitats and species remain largely unaddressed. Furthermore, measures for the protection of coastal habitats essential as nursery or spawning areas for many fish species (such as *Posidonia oceanica* beds and coralliferous assemblages) has not been sufficiently addressed in the plan. Other important shortfalls in the French submission are a lack of a clear definition of the objectives, and the justification of the time schedules proposed for the different proposals in the management plans. Given the lack of appropriate information to assess the potential impact of any future proposed measures, STECF considers that such information be collected and compiled and be submitted in support of future management plans.

STECF recommendations

The results of the EWG 11-05 assessments indicate that in order to meet MSY objectives the fishing mortality of European hake (*Merluccius merluccius*), red mullet (*Mullus barbatus*), and blue and red shrimp (*Aristeus antennatus*) in GSA 01, blue and red shrimp (*Aristeus antennatus*), spottail mantis shrimp (*Squilla mantis*), striped red mullet (*Mullus surmuletus*), and blackmouth catshark (*Galeus melastomus*) in GSA 09, pink shrimp the (*Parapaeneus longirostris*) in GSA 11 and common sole (*Solea solea*) in GSA 17 and needs to be reduced. Recalling GFCM resolution GFCM/33/2009/1, STECF recommends that this would best be achieved by means of a multi-annual management plan taking into account mixed-fisheries effects.

Quality and completeness of the official 2010 Mediterranean DCF data call

STECF recommends that the detailed comments by EWG 11-05 concerning quality and completeness of the national data submissions to the 2010 Mediterranean DCF data call should be noted by DG Mare and communicated to the national correspondents of the Member States' DCF program.

Considering the sparseness of fisheries and fisheries independent (survey) data to monitor and assess the status of exploited stocks in the coastal regions of the Mediterranean Sea, STECF recommends that a special sampling plan to survey coastal artisanal, recreational and commercial

fisheries should be drawn up and implemented. An expert working group which includes participants with specialist knowledge of Mediterranean coastal fisheries and surveys should develop an appropriate sampling protocol. In addition, the expert group should advise on a selection of appropriate indicator species for the assessment of environmental status and propose any amendments required for a future revision of the DCF revision related to monitoring and assessment of the status of coastal exploited species and ecosystems.

5.3. STECF-EWG 11-06 on evaluation of fishing effort management in EU waters – part 1

Terms of Reference

STECF is requested to review the report of the **STECF-EWG-11-06** Working Group of June 6 - 10, 2011 (Galway, Ireland) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF observations

The STECF expert working group on effort management EWG -11-06 (formerly SGMOS) met in Galway in June 2011. The TOR for the meeting included conducting effort and catch reviews for the Baltic, Annex II A, B and C stocks, Celtic Sea, Bay of Biscay and Deepwater/Western waters.

The data call for this meeting was sent out in February 2011. A number of Member States submitted material in good time, several submitted data close to the effort meeting and some elements of the material were obtained in the first day of the meeting. Only Spain failed to provide any inputs in due time.

Reviews of the data took place over the course of the meeting, concentrating on the effort and catch data. Given that most data were available at the start of the meeting the exercise was more comprehensive than in previous years. A number of inconsistencies and errors were detected and corrected and by the close of the meeting only a few issues were left outstanding as follow:

-No Spanish data
- French data, for effort only, are subject to revision – the 2002 data have not been revised, 2009 data are suspiciously similar to 2008 numbers, and there is an important, and to some extent unexpected, decline in effort in 2010 effort v similar or same as 2008, big decline in 2010
- Known error in FDF from England and Wales

Unlike previous years, there was an expectation that available material could be reviewed by the 2011 Summer STECF Plenary meeting, and used straight away to facilitate a) the review of the cod plan during STECF EWG 11-07 and b) earlier preparations for Council decisions to be taken in a revised programme of business.

Communication with Commission officials on their priority requirements indicated that the main focus should be on the provision (where possible) of rankings of cod catches by gear and of the gear specific CPUE values.

Below is a very brief provisional overview for the four areas covered by the Annex IIA cod plan: 3a Kattegat; 3b North Sea, 3c Irish Sea and 3d West of Scotland, to summarise the main trends.

Nominal effort has decreased in all areas, since the beginning of the time series. But the slopes of decrease have generally been steeper before the implementation of the cod plan in 2008.

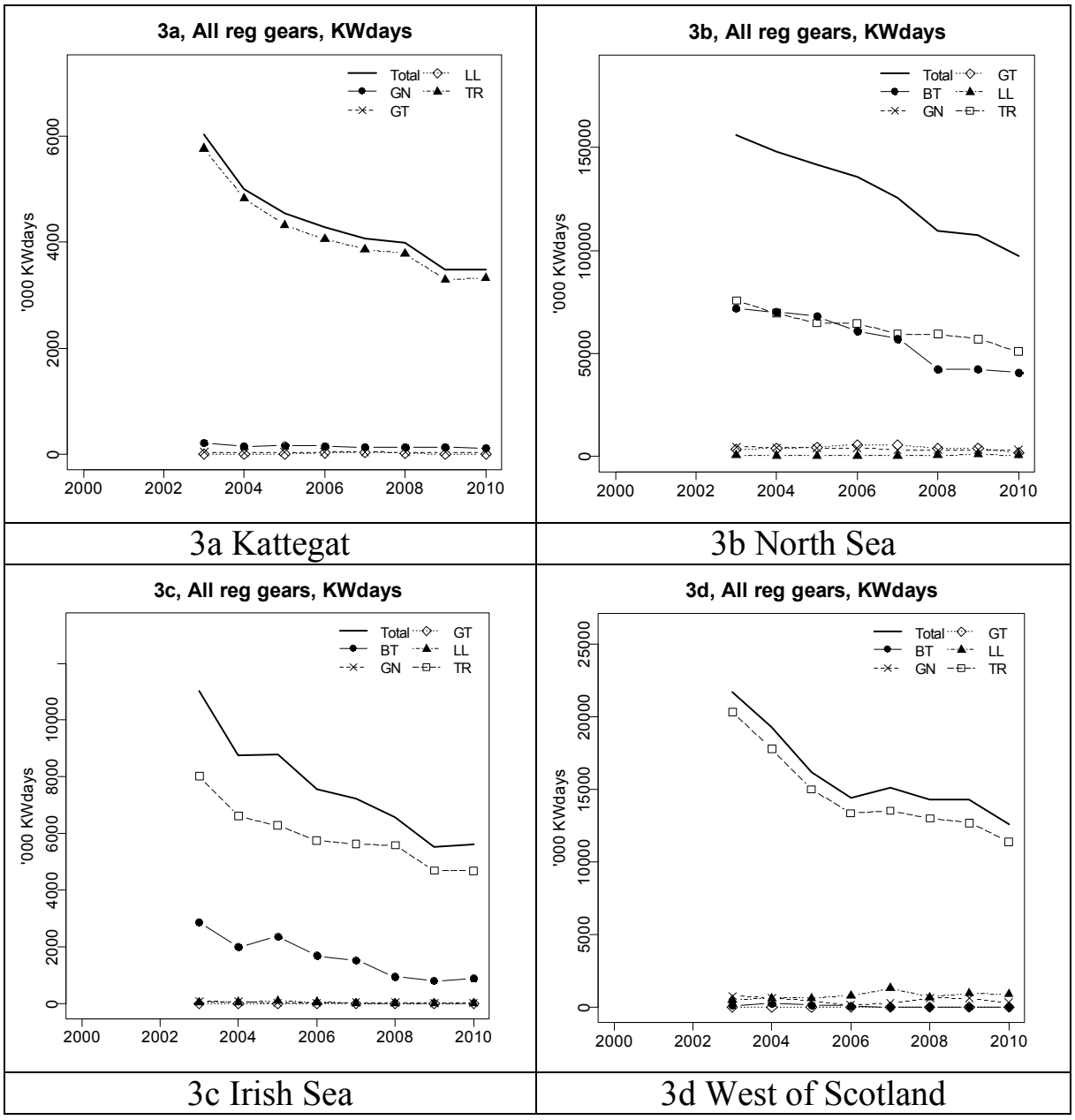

Figure 5.3.1. Trends in nominal effort for the regulated gears in the four cod areas.

Trends in cod catches by regulated gears are more diverging across areas. While they have dropped to very low levels in Kattegat, they have been mostly increasing in the North Sea since 2003, although they have decreased since 2008. Cod catches in the Irish Sea and West of Scotland has been more fluctuating over time.

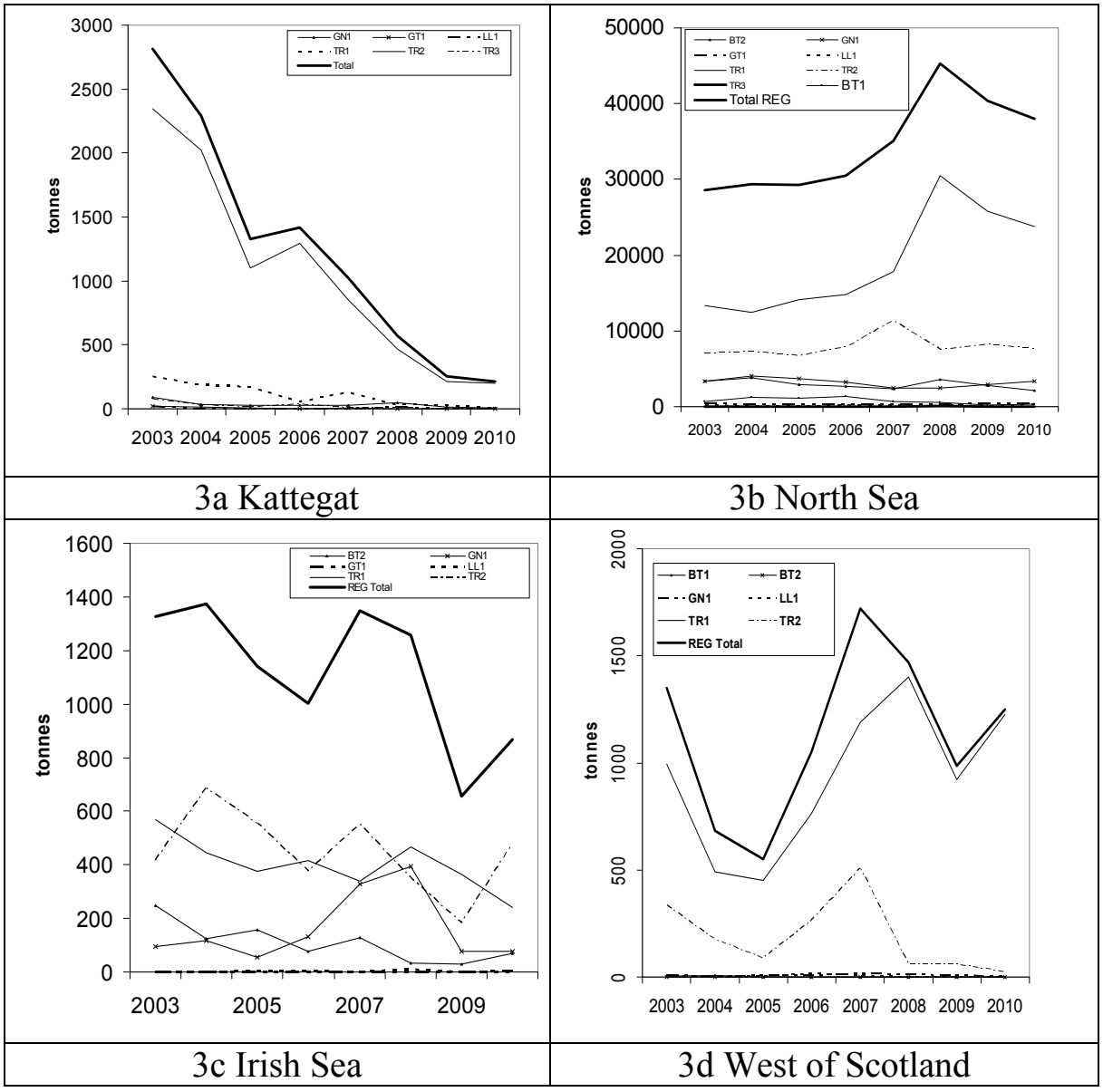

Figure 5.3.2. Trends in cod catches for the regulated gears in the four cod areas.

The current level of completion of EWG -11-06 report does not contain much narrative text yet - the full report will be completed at the September meeting. The most recent versions of output data files relating to the material available so far are stored on the STECF ftp site. The available data on catches is not expected to change significantly, however, the above-mentioned effort data issues mean that effort data should be treated cautiously. Results available so far may be used for ranking of importance of gears in terms of catches (or landings – Irish sea), see section 9.9 of this report. However, the use of the CPUE data is not advised since this will be affected by any adjustments to the effort data series. Furthermore, a fuller evaluation of the representativeness and quality of the catch data is planned for the September meeting (expanding on the exercise reported in STECF PLEN 11-01).

5.4. STECF- EWG 11-07 on Multi-Annual Management Plans – part II

Terms of Reference

STECF is requested to review the reports of the **STECF-EWG-11-07** Working Group of June 20 – 24, 2011 (Hamburg, Germany) meeting, evaluate the findings and make any appropriate comments and recommendations.

Where a formal opinion of the plenum will be requested (i.e. on results of the evaluation or of the assessment of multi-annual management plans), STECF is requested to review the reports of the STECF Expert Working Group, evaluate the findings and make any appropriate comments and recommendations.

Impact Assessment of fisheries on Southern hake, Nephrops and Anglerfish (ICES areas VIIIc and IXa)

STECF observations

STECF commends the EWG-11-07 for its excellent work with the Impact Assessment of fisheries on Southern hake, Nephrops and Anglerfish (ICES areas VIIIc and IXa) and the report provided. STECF considers that the work provides some useful outputs that can contribute to an improved plan, but is concerned that some analyses, and therefore some information that could inform policy choices, have been hampered by a lack of fleet data from some MS. STECF draws the following conclusions from the report.

Biological status by species: Based on information from various sources STECF concludes the following regarding stock status relative to Fmsy objectives.

Nephrops

Nephrops in northern FUs (FUs 25, 26, 27 and 31): In the absence of an analytical assessment, it is not possible to assess the distance from current F to a potential F_{MSY} level. Given the very low biomass level of *Nephrops*, the catch should remain as low as possible (ICES, 2010b).

Nephrops in FUs 28 and 29: Fishing mortality has decreased in the last five years, and is presently considered to be at a record low. The stocks are considered underexploited at present with respect to any F_{MSY} proxy (ICES, 2010a, 2010b).

Nephrops in FU 30: The stock appears to be low compared to historic levels. Landings and effort have decreased substantially in recent years (ICES, 2010a).

Angler Fish

L. budegassa: Fishing mortality has decreased since 1999 and is in 2010 below F_{MSY}. Biomass has increased since 2002, and is presently 91% of B_{MSY} (ICES, 2011).

L. piscatorius: The update assessment for white anglerfish has identified a large decrease of F in 2010, being below F_{MSY} in contrast to the 2010 assessment. Biomass in 2011 is estimated to be approximately at 30% of B_{MSY} (ICES, 2011).

Southern hake

M. merluccius: Fishing mortality is more than twice the F_{MSY}.

Management options: Various management options were considered by STECF

Nephrops

Management of *Nephrops* stocks by Functional Unit would better respond to the conservation measures required for each FU unit. This is justified by the fact that *Nephrops* stocks in independent FUs are often at different status requiring different management measures.

Separate hake and *Nephrops* management is feasible for FU 28 and 29 provided appropriate *Nephrops* TAC is allocated at the FU level, and the fishery is spatially regulated and enforced through monitoring using VMS. This approach requires that sufficient hake quota is allocated to this fleet to cover hake bycatch.

For all other *Nephrops* FUs Separate hake and *Nephrops* management is not feasible without solutions based on species separator gears. STECF has not been able to evaluate gear-related solutions for species separation. Grids (e.g. Swedish grid) have been used in other areas to separate gadoids and *Nephrops*, and could be investigated to see if they are applicable here. Given the low biomass of northern *Nephrops* FUs, measures taken to reduce F for hake should have the effect of also reducing fishing pressure on *Nephrops.* The same is true for FU 30, although the stock is thought to be in a better condition.

Angler Fish

Considering the present state of both anglerfish stocks and their exploitation ($F< F_{MSY}$), it will not be necessary to apply F reductions in these fisheries to achieve F_{MSY}. However, parts of the fleets catching anglerfish are already covered by the current hake management plan. Currently there is separate management for the "RASCO" fleet. This fleet does not catch sufficient quantities of hake to require regulation under a hake fishery management plan, and should continue to be managed separately.

All other fleets catching anglerfish catch sufficient hake that they must currently be managed within the regulation under the hake management plan.

The stock assessment is carried out separately for both angler species. Currently the advice is given for the combined stock and a single TAC for both species. The spatial pattern in the distribution of the two species of anglerfish in Divisions VIIIc and IXa could allow the possibility to manage each species separately, but additional research would be required before developing this further.

Southern hake

For Hake in the Gulf of Cadiz this is part of the definition of the stock area of southern hake and there is no scientific reason to exclude it from the effort regulations.
If the TAC is overshot the current plan and none of the alternative HCRs considered for exploitation of hake will achieve F2015≤ F_{MSY}.

There are recent reports of improvements in enforcement of TACs in 2010, the situation needs to improve further if the fishery is to be managed effectively.

The current EU plan for hake and *Nephrops*, (with a 10% yearly F reduction and a 15%TAC constraint), is not expected to reduce the exploitation rate on hake to F_{MSY} by 2015; the probability of achieving this objective is only 12%. With previously observed levels of recruitment and if implemented in full the current plan will achieve F_{MSY} only by 2017 with a probability of 50%.

Replacing the existing plan with an HCR "F_{MSY} in 2015" with either a ±15% or ±25% TAC constraint will achieve F_{MSY} in 2015 for the southern hake stock. The HCR with 15% TAC constraint produces faster recoveries than the HCR 25% TAC constraint. The F reduction in this plan is always higher than the 10% F reduction in the current plan.
Alternatively additional technical measures would be required to achieve F_{MSY} in 2015 with the current plan. These technical measures could result in a change in the hake exploitation pattern. The analyzed measures to reduce the exploitation pattern were 1) changes in trawl gears and (2) closed areas.

1. Mesh changes: The simulations performed show that a small change in mesh size (about 10 mm increase in mesh size for all trawlers) does not produce any substantive improvement. If mesh changes are to be used to improve the current plan, larger changes are needed. These larger changes in mesh size help by changing the F_{msy} value and thus the F_{target}, reducing the relative change in F required from current F to achieve F_{msy} in the medium term. The result in the long term of such a change would be increased landings, reduced discards and a slightly reduced SSB. In order to define the mesh changes that would be acceptable and evaluate in detail their impact on the stock, fishery and ecosystem, a definition of fleets and gears that should be changed needs to be provided by MS.

2. Closed Areas: The analysis of the Portuguese and Spanish surveys (both in October) does not provide relevant additional information to extend the current closed areas in time or space. Furthermore, the impact of extending these areas on F will not be effective in reducing the exploitation pattern if the fishing effort is transferred to other areas.

There is currently a legal obligation to record soak time, and overall length of net deployed. STECF considers that this would be an appropriate metric to determine effort for static gears.

With the available data, the group is not able to assess the impact of including or excluding the vessels under 10 m in the plan. MS are required under the DCF to provide estimates of total catch from vessels under 10m. In addition to the formal data call, EWG 11-06 MS was requested to provide data during the scoping meeting for management plans. No data were available for Spain.

With the available information, it is not possible to evaluate the impact of the introduction of real time closures.

Fishing at F_{MSY}, it is expected that hake and anglerfishes biomasses will increase towards B_{MSY}. As these species are top predators in the ecosystem, the mortality of their prey could be expected to increase. The expected change in the exploitation pattern resulting from increases in mesh size and or area/season closures may reduce unwanted bycatch and consequently result in less discards.

Economic consideration:

The economic simulations show that a policy that allows reallocation of total allowed effort to a smaller number of vessels would bring an increase in average profitability per vessel. This reduction in vessel numbers could also be expected to improve profitability and profit amount in absolute terms at the fleet level. Simulations suggest that F_{MSY} can be obtained by reducing the fleet less than proportionally to the required reduction in fishing mortality.

The introduction of ITQs in this fishery is likely to result in concentration of the total amount of fishing days in the most efficient vessels. The simulations show that at F_{MSY} the total price per kg of hake and fleet profitability will both increase. STECF is uncertain about the robustness of these results, but implementation of ITQs in fisheries have in several instances resulted in increased profitability of fleets, when comparing to the previous management system.

In terms of the trade-off between employment and profitability at fleet level, if fishing mortality is not to be reduced, then in order to generate an increase in fleet profitability employment (number of persons) must decline and vessels have to leave the fishery.

Finally, the simulations suggest that introducing ITQs will allow the possibility of reducing the current fleet size while maintaining the number of licence holders but not all of them are likely to be actively fishing. In the simulations those non-fishing licence holders are supported through leasing of quota.

Overall STECF considers more work is required before the conclusions if the simulations could be used to inform policy.

STECF conclusions

STECF endorses the findings of the STECF EWG report on the Impact Assessment Southern hake, Nephrops and Angler fish report (EWG 11-07c).

Impact Assessment of fisheries on Baltic cod

STECF observations

STECF commends the EWG-11-07 for its hard work with the Impact Assessment of fisheries on Baltic cod and the report provided. STECF understands that the Commission is currently considering combing the management of Baltic cod with that for pelagic species, to create a multispecies plan for the Baltic. In this context STECF note that this evaluation provides advice on single species exploitation for cod in the Baltic. The conclusions might be different if exploitation on cod is combined with targets for other species.

STECF conclusions

STECF draws a number of conclusions for consideration when developing plans for cod fisheries in the Baltic.

Objectives and targets:

The following considerations are based on the assumption that the objectives of a Baltic cod management plan are to ensure exploitation of the cod stocks provides sustainable economic, environmental and social conditions and the aim is to restore and maintain the stocks at or above levels which can produce maximum sustainable yields not later than 2015.

The STECF considers that within the historical stock sizes exploitation of the two cod stocks at target fishing mortalities of 0.33 is consistent with the objective of MSY. If the stock sizes increase to a state where it influences the population parameters (eg. growth or maturation change due to stock size) it may be necessary to adapt the target fishing mortalities to obtain MSY.

Discards are included in the F_{MSY} evaluations and a possible discard ban is unlikely to affect the conclusions on MSY targets unless a ban will result in a major change in the exploitation pattern.

A higher MSY could potentially be obtained for Eastern Baltic cod by changing size selection towards harvesting cod >70 to77cm.

Tactical approaches

STECF recommends that management plans should be developed with a range of potential tools available to manage the fisheries. Past experiences show that it is important that a management plan includes options for actions to be taken in case the TACs are shown to be ineffective in limiting fishing mortalities. Managers should choose a minimum set of control measures that are thought to be appropriate at the time, but should retain the ability to relax or deploy additional tactical methods (eg. TACs, Effort controls, technical measures) should the plan be failing to deliver its objectives.

Management through limitation of catches

The current enforcement of the TACs appears to be sufficient to control the total outtake. Discards have been relative limited and stable in recent years and the EWG concludes that the currently TACs have been effective in limiting fishing mortalities.

F target based harvest control rules with catch calculated using a short term forecast and a percentage constraint on inter-annual change in TAC are considered appropriate in defining the TACs for both stocks. However, the simulations presented in section 7 indicate that a 15% constraint on inter-annual variation in the TACs is not required to achieve the biological objectives. Although discards appear at present not to be a problem in relation to limiting fishing mortality, a management plan should include explicit rules for addressing discards. This could be implemented by defining the TAC as total allowable catch and by ensuring that all catches (landings as well as discards) are counted against the TAC.

Recreational catches constitute, in certain areas, a measurable and variable part of the total catches and to ensure a proper limitation of total catches, catches of cod in the recreational fisheries should be addressed in the management plan.

Limitation of fishing effort

The evaluation of the present multiannual management plan, and the simulations presented in section 7, indicate that rules for effort limitations are not currently required to meet the biological objectives, as long as the limitations in catches are effective in limiting the fishing mortality as intended.

Spawning closures

The impact on the present spawning closures on the stocks and the fisheries is unclear but the measures are unlikely to have had a limiting effect on the overall fishing mortality and EWG concludes that spawning closures are not required to meet the biological objectives as long as the TACs effective in limiting the fishing mortalities as intended.

If spawning closures are included in a future management plan it is recommended that it is ensured that the timing of the closures matches the spawning periods of the spawning components to be protected.

Other measures (gear rules, MLS, etc)

A number of technical measures including gear rules, minimum landing size and maximum by-catch percentages currently included in the technical measures regulation affect the fisheries on the cod stocks. These measures have little impact on the overall fishing mortality and are not required to meet the biological objectives as long as the limitations in catches is effective in limiting the fishing mortality as intended.

The measures may, however, have had a positive impact on the exploitation pattern on cod and as such a positive impact on the yield per recruit.

Economic impacts

The 15% rule was introduced for economic reasons. Its intention is to limit the additional supply of Baltic cod on the market to stabilize prices. However, in practice prices decreased sufficiently so that even with a higher TAC revenues declined. The decrease in price has been partly attributed to campaigns which criticised cod for being unsustainably exploited, while substitutes (e.g. pangasius) were being declared sustainable. However the main influence was made by deterioration of economic situation and general reduction of consumption affected by recent economic crisis. For 2011 the situation seems to stabilize.

The economic simulations were run by using the bio-economic model framework FLR instead of running the FishRent model as discussed at the scoping meeting. With a 10-year simulation a baseline scenario and several options for future management were assessed. The differences regarding future profits between the baseline (±15% TAC constraint) and ±30% TAC constraint, regulating only F (0.6) without effort constraints, only effort constrains without TACs and a discard ban with a 10% TAC compensation are insignificant or very small. However, as stated in the report, these results have to be treated with caution as the small differences may be due to the design of the simulation.

The conclusion in Ch. 9.3 is that it is economically viable to increase the size of cod in the catches which will lead to a faster recovery of the stock. However, the assumption that larger cod lead to

higher revenues relies only on information on a small fraction of the catch in Sweden. There are indications that processors prefer smaller cod. Moreover, the problem of such an approach is that there will always be higher losses at the beginning and higher revenues after several years compared to the actual management plan. The transition phase is, therefore, more demanding for the fishing sector and so far similar proposals (e.g. Döring & Egelkraut 2008) were never implemented as no one wanted to cover the higher transition costs.

STECF recommendations

Scoping for Multispecies Plan

If MS and the Commission wish to request STECF to advise on a multispecies plan for the Baltic such a plan will require a scoping meeting. In order for scientific advice to be given, Commission and MS need to indicate in that meeting a range of aspects. STECF suggests the following aspects should be included in the Terms of Reference of the scoping meeting

An EWG to define the needs for an Impact Assessment of a multispecies plan for the Baltic is requested to organise a meeting the following tasks:

- Commission and MSs should identify which fisheries are to be included; any specific social-economic objectives for the fisheries; any specific objectives in terms of relative stock biomass between the species included in the plan, single stock size structure and general target fishing mortality objectives, with a time frame for required changes in stock size and exploitation status.
- Commission and MSs should identify where possible the priority for multiple objectives i.e. among single species and socio-economical objectives or those aspects where tradeoffs need to be illustrated.
- Commission and MSs should identify the regulatory measures (eg. catch quotas) that are most likely to be implemented to reach the objectives of the plan.
- For these regulatory measures the expected potential implementation success should be estimated.
- Scientists should identify data currently available to parameterise species interaction in the Baltic. In particular, data required to determine the dependence of recruitment, natural mortality and growth of each species on the abundance and distribution of the other species considered in the plan, including any knowledge on the temporal stability of these effects. Also, the data required to assess the existence and magnitude of any within species density dependence of recruitment, natural mortality and growth, including any knowledge on the temporal stability of these effects.
- Economists should identify socio-economic data available to evaluate the socio-economic aspects of different management strategy and objectives.
- Scientists/economists should describe modelling frameworks already developed to analyse multispecies interactions and evaluate multispecies objectives. Illustrate and review the results already obtained by multi-species modelling already in use in the Baltic. Indicate their current utility and identify any advances required.
- Identify any critical gaps in knowledge or modelling that might affect the utility of the analyses described above.
- Determine any data collection/collation required and the timescale for deliver.
- Propose the modelling framework(s) to be utilised for the evaluation and list:
    1. the basis for parameterisation

2. the run options to be evaluated
3. the metrics to be presented

Reference

Döring, R. & T. M. Egelkraut 2008. Investing in Natural Capital as Management Strategy in Fisheries – The Case of the Baltic Sea Cod Fishery. Ecological Economics 64(3): 634-642.

Evaluation of the multi-annual management plan for fisheries on cod in Kattegat, North Sea, Irish Sea and West of Scotland.

STECF Observations

STECF thanks the EWG-11-07 for its work with the Evaluation of the multi-annual management plan for fisheries on cod in Kattegat, North Sea, Irish Sea and West of Scotland. STECF would also like to thank the NSRAC and NWWRAC for their contribution to the meeting.

STECF draws the following conclusions and observations from the report.

Achievement of objectives:

Given that the plan has only been in place for two and a half years (09, 10, first half of 2011), it is premature to conclude on the medium term impacts. It is not possible to predict how the plan will develop over the next few years as F and effort constraints intensify and the number of fleets operating under derogations increases. Nevertheless the STECF has drawn the main conclusions given below. With the data available, it was not always possible to assess whether any of aspect the plan has caused observed changes which are in line with plan objectives. Instead, we can, in some cases, comment on whether the desired objectives are being achieved, but we cannot say that any observed changes are or are not a result of the plans being implemented.

Exploitation rates and State of Stocks.

North Sea: A full analytical assessment is available for this stock. Objectives of the plan have not been met in terms of F. F had declined and SSB had increased prior to introduction of plan. There have been continued but minor reductions in F and increases in SSB since the introduction of the plan. SSB has increased slowly over the last 6 years, but it is still below Blim.

Of the other stocks, there are assessments but these are only indicative of trends in mortality. For the West of Scotland and Irish Sea fishing mortality is very uncertain but total mortality remains very high and the best estimates of F indicate that it is well above target and not declining. In the Kattegat, there is a high degree of uncertainty in F. The uncertainties in mortality estimates arise from, *among other factors,* unallocated removals, and other (non-fishing) sources of mortality. For all three stocks' biomass levels are estimated to be well below Blim. For Kattegat and Irish Sea recovery is failing and biomass has not increased. For the West of Scotland SSB has increased over the last 6 years.

Medium term simulations based on the current rate of change per year in F suggest that for North Sea, Irish Sea and West of Scotland cod stocks, following the current regime is unlikely to lead to

F=Fmsy by 2015. Currently it is not possible to evaluate the likely success in terms of F by 2015 for Kattegat cod.

Additional Impacts of the multi-annual plan on the environment and the ecosystem

Reductions in discards of commercial and non-commercial species, associated with Article 11 and Article 13 (technical measures), have been significant when these measures have been applied in some areas (e.g. North Sea).

Some technical measures have significantly reduced commercial by-catch (e.g. Nephrops fisheries with grids have become single-species fisheries).

Reported landings in most areas are in line with the landings limits in the plans, but in some areas catches are well in excess of TAC, leading to quota-driven discards of fish, e.g. in West of Scotland. This is identified as a problem using scientific data, RAC statements and a Fishermen's Survey conducted on a small sample of interviewed fishers. The Fishermen's Survey reports apparently 'conflicting' notions: (i) the feeling that cod avoidance is being carried out, and (ii) that discarding is being carried out because too much cod is being caught. This suggests that while cod avoidance is occurring it is currently insufficient.

Various fleets have opted to use more selective gear (Article 11 or Article 13) or to operate real time closures (Article 13) or to fish outside the distribution area of cod (Article 11).

Mortality of some other species such as haddock and whiting may have declined to levels consistent with CFP objective in some areas, and maybe partly due to the cod plan.

Influence of external factors (global change, ecosystems effects, or other fisheries)

Increases in biomass may have been hindered by factors external to the fishery (e.g. seal predation on the West of Scotland).

Changes in fleet effort and capacity

The starting baseline used in Article 12 of the plan is derived from the average of either 2004-2006 or 2005-2007 depending on MS choices. For the North Sea this means that allowed effort in the first year of the plan (Effort 2009 = 75% of the baseline) could be higher than 75% of effort in the preceding year (2008). Because the stipulated F reductions of 25% are relative to 2008, this resulted in effort reductions not being in line with F reductions. For the other stocks and years the percentages may have been different, but for the same reason the effort reductions were not in line with the F reductions.

Differences have occurred in the respective methodologies used to calculate effort from the reference years and methods used in the reported consumption of effort within the plan. This difference in methods has resulted in higher than intended deployed effort.

There was a substantial decline in effort before the introduction of the current cod plan. Since the start of the plan, there has been a continued decline in effort although at a lower rate or in some cases a levelling out of effort. In all of the stock areas the total recorded effort by vessels using the gears for which cuts applied declined slightly, but, in 2009 and 2010, did not decline in line with the reductions required by the plans. Otter trawl gears contribute the highest effort amounts, with

the relative importance of TR1 and TR2 otter trawl gears varying between areas. Beam trawl (BT2) effort is also very significant in the North Sea.

The extent of unregulated effort varies between areas. However, in all areas this is associated with minimal cod catches.

Effort associated with Article 11 is relatively low in all areas.

Effort associated with Article 13 ranges from 25% to 75% of total deployed effort and 46% to 71% of total cod catch among areas.

There have been positive contributions under Article 13c which appears to provide benefits towards achieving the cod plan targets. Article 13 allows a flexible, locally tailored response which should provide better governance with measures based directly on catches, landings and discards. Notable effects are: redistribution of effort away from higher abundance in Kattegat; unwanted bycatch and discard reductions in the northern North Sea by TR1 vessels; the use of more selective gears, and cod avoidance through real time closures. However, the verification aspects of Article 13 are too complex.

There have been reductions in fleet capacity; however, it was not possible from the evaluations available to indicate to what extent the plan was responsible for changes in fleet capacity. The decision by an owner (or owners) to remove a vessel from a given fishery depends on several factors and most of these factors are not influenced by the long term management plans, e.g. operating costs, offers of decommissioning grants, alternative fishing opportunities and factors relating to the personal circumstances of business owners. Therefore, in any event, the effects of a single species long term management plan are not likely to be key in determining any single decision about the removal of a vessel from the fishery subject to the plan.

The Fishermen's survey reports that the effort limits resulted in more time in port, changes in patterns of fishing activity, problems due to catch composition rules and discarding, and knock-on effects making it harder to keep a crew (see below).

Economic benefit/loss during the period of implementation

It was not possible to conclude that the plan has had any impact on financial performance of the fleets involved compared to the situation likely to have prevailed in the absence of the plan. Analysis of changes in profitability at the level of fleet and vessel has not been possible due to inconsistency of cost data that were available from both DCR (in place prior to the cod plan) and DCF (which start coincided with the implementation of the cod plan). There are indications that revenue per vessel may have increased while total revenues of the whole fleet declined, but it is not possible to attribute these changes to the plan.

At a fleet and vessel level, reductions in effort may not necessarily result in the same proportion of reduction in revenue. Total Operating Costs at a fleet level have fallen in line with decline in total effort, but have increased at an individual vessel level due to increase in average effort per vessel.
A meta analysis such as this one, carried out on aggregated economic data can mask significant changes at an individual business level. Therefore, to understand the implications at an individual business level more detailed analysis would be required. But due to confidentiality issues, this type of study would have to be sponsored specifically by MS.

An Economic study based on DCF data and the Fishermen's Survey concluded that employment (number of people employed) has reduced.

Effects on the broader industry

Although we cannot conclude that the plan has had any effect on vessel numbers or fleet capacity applied to the fishery, it may be worth noting that any reductions that have occurred will have had knock-on effects upstream and downstream in the economy, that is, for businesses supplying to vessels and for those purchasing from vessels.

Economic Indicators

The economic indicators were only sufficient to describe changes over the period of analysis. It has not been possible to attribute any of those observed changes in the indicators to the multi-annual plan and hence they are not sufficient, on their own, to enable a robust evaluation.

The short run economic impacts of the multi-annual plan are not clear, in part because data at the required level of disaggregation is not available, and will depend on the balance of benefits resulting from increased cod TAC in the longer run and reduction in total (fleet level) costs resulting from reduced effort. The impact on long run economic sustainability will also depend on the stock effects of the plan (higher catch per unit of effort) which at this stage are unknown.

Specific indicators or data that would be useful for a future evaluation of multi-annual plans

- Fully documented effort allocation and deployment, landings and catch of cod for each vessel
- Economic data linked to vessels and specification of any derogation Article under which the vessel is operating.

Any future revision should consider the following:

- Several of the Articles in the plan are ambiguous or difficult to apply. As a general point, clear and unambiguous phrasing of the elements of regulations will make compliance more transparent and potentially more reliable.

TAC and Effort control

- Fishing mortality can not be expected always to follow proportionally trends in fishing effort.
- Currently the combination of TACs (enforced as landings) and effort restrictions have been found to be inadequate in controlling cod removals, e.g. because enforced landings have resulted in discarding of over-quota catch. Reliance on these control instruments is a core weakness in the plan. Consideration should be given to use of cod catches (landings plus discards), as the main metric for allocating catch opportunities.
- The HCR in the plan is overly reliant on annual estimates of F which are either absent, inaccurate or imprecise. Consideration should be given to multiannual metrics for informing decisions. The lack of analytical assessments in WoS, Irish Sea and Kattegat preclude the application of the HCR. Therefore different metrics are needed for the application of the HCR.
- Short term forecasts for North Sea show bias in estimating SSB and F; specifically, SSB is overestimated and F is underestimated; by comparison, removals estimates were less biased.

It is recommended that the current practice of assuming the plan is working for the intermediate year, should cease; currently it is preferable to assume Fstatus quo in the intermediate year. In the longer term alternative methods of setting TACs should be tested to see if they are more robust for predicting F for specified removals.

- The cod LTMPs were designed without consideration of the fishing opportunities for other species. Mixed fisheries simulations give an indication of the potential for disparity between fishing opportunities and thus implementation error in North Sea cod advice. Actual F may be higher than stipulated in the LTMP if there is continued fishing for other species with higher TACs as well as of the potential over-catch or underutilization of other TACs. The plan would benefit from linking to plans for Nephrops, haddock, whiting, saithe, sole and plaice in the North Sea.

Exemptions under the current plan

- Exemptions through Article 11 require low cod catches. These exemptions should only be approved when the fishing activity is deployed outside the distribution area of cod, or if deployed within the cod distribution area, when the used fishing gear is designed and confirmed to minimize cod catches.
- Basing monitoring on percentage of cod in the total catch (as in Articles 11 and 13.2b) is flawed, because even when percentages of cod in the catch are low, these catches can still contribute significantly to overall cod mortality if overall catch or effort is high or when abundance is low. Cod by-catch ceilings expressed as percentages of total catch also have a perverse incentive to maintain or increase catches of other species. STECF identified bycatch ceilings as a flaw in the design of the plan. A system based on proportion of total expected cod outtake from the whole fishery would be more appropriate, and likely no more difficult to monitor.
- Verification of Article 13 exemption, based on expected effects on F, cannot be carried out in most cases. By specifying Article 13 exemption on the basis of total catch (landings plus discards) of cod it is expected to be easier for fishermen to understand, implement, and verify their compliance with the conditions of the derogation.

STECF conclusions

Overall STECF concludes that the plan is not delivering reduced F and additionally in many areas does not have stakeholders' support. A plan which stakeholders support is more likely to succeed because the stakeholders' actions are needed to contribute to its success. Support of the plan also should also, in theory, lead to their acceptance of responsibility to fulfil their obligations.

STECF agrees with the findings of the STECF EWG report on the Evaluation of multi-annual plans for cod in Kattegat, North Sea, Irish Sea and West of Scotland (EWG 11-07b)

STECF recommendations

For observers, it would be desirable if the STECF secretariat could notify the DG MARE focal person for the RACs to issue a timely reminder to the RACs of those STECF meetings open to

observers, to ensure that all appropriate people are invited to register in an acceptable time frame. The DG MARE focal persons for specific EWGs should also inform the secretariat in due time if Member States representatives should be invited to a meeting.

In preparation for the Impact Assessment of a revised plan, a scoping meeting is required. In order for scientific advice to be given, Commission and MS need to indicate in that meeting a range of aspects

- The regulatory measures they might be prepared to implement, and specifically those they are not willing to consider, in order that available expertise can focus on the most productive areas.
- Specific objectives with timescales and if there are multiple objectives some idea of the tradeoffs.
- If catch quotas are to considered for some fleets, those with expertise in compliance should be requested to attend to discuss compliance for catch quotas, likely errors and uncertainties.

5.5. STECF-EWG 11-08 on the 2010 DCF annual reports

Terms of Reference

STECF is requested to review the report of the **STECF-EWG-11-08** Working Group of June 27 – July 1, 2011 (Helsinki, Finland) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF comments

STECF acknowledges the progress achieved by EWG 11-08 in making the evaluation of DCF Annual Reports more efficient, especially through the pre-screening of Annual Reports by ad-hoc contracted experts. STECF notes that overall MS compliance with the DCF and National Programmes has been good and EWG 11-08 has provided sufficient information for bilateral follow-up by MS and the Commission in cases of non-compliance.

STECF notes that the April 2011 Plenary recommendations have been duly considered by EWG 11-08 and mostly fulfilled.

Regarding the end-user feedback on data transmission, STECF welcomes the proposal by EWG 11-08 for future formal data calls and the increasing use of Regional Databases in the case of ICES, but notes that similar mechanisms would have to be implemented for other regional fisheries bodies.
STECF acknowledges that EWG 11-08 has suggested an ambitious roadmap for the revision of the DCF during 2011-2013. STECF notes, however, that the implementation of the proposed steps will depend on the framework given in the legislative acts of the CFP reform (e.g. Article 37 "Data requirements for fisheries management" of Document COM(2011) 425 final).

STECF conclusions and recommendations

As the Annual Report pre-screening was regarded as very helpful preparatory work for EWG 11-08, STECF recommends applying a similar procedure to future evaluations of Annual Reports, and in addition, expanding this procedure to the review of National Programme proposals.

STECF endorses the EWG 11-08 recommendations regarding the improvements of the pre-screening procedure (working by DCF modules instead of by MS, implementation of pre-screening guidelines, distribution of pre-screening results before EWG). To improve consistency in the review process, EWG 11-08 recommends that the pre-screening guidelines should be prepared within an ad-hoc contract during September-October 2011. STECF endorses this recommendation and recommends that this work is considered and finalised at EWG 11-19 (Nov./Dec. 2011). In addition, STECF recommends that the revision of Annual Report submission guidelines, based on the improvements recommended by SGRN 10-02 and EWG 11-08, is also included into the Terms of Reference of EWG 11-19.

With regard to the proposed formal data calls, STECF supports the proposal by EWG 11-08. STECF, however, recommends that ICES and the Commission carefully check the legal basis for such requests, in order to prevent that MS can refuse data delivery to ICES.

STECF notes that metier-based DCF data are still in many cases underutilised by ICES stock assessment working groups, as data are often provided by country only but not by metier, and in such cases the raising methodology does not make appropriate use of DCF sampling strata; furthermore, STECF notes also that there is sometimes insufficient knowledge about basic data processes within ICES assessment expert groups, as was reflected by the unequal quality of the filling of the so-called ICES "Data Tables" this year. STECF recommends therefore that the provision of metier-based data, including a description of the raising methodology used, will be prepared by the data collectors. STECF suggests that a pilot data set for the mixed demersal gadoid fisheries in the North Sea be prepared by the Regional Co-ordination Meeting (RCM) for the North Sea & Eastern Arctic in September 2011, in collaboration with relevant end-users, including scientists involved in ICES WGNSSK and ICES WGMIXFISH.

EWG 11-08 recommends that STECF compile a filtered list of recommendations by region (from the previous year). STECF regards the compilation of regional recommendations as integral part of the RCMs and will compile the STECF recommendations as laid out in the April 2011 Plenary report.

Regarding the roadmap for DCF revision proposed by EWG 11-08, STECF recommends that EWG 11-19 reconsiders the proposal in the light of the recent developments and timelines in the legislative framework of the CFP reform.

5.6. STECF- EWG 11-09 on the review of scientific advice on stocks – part 2

Terms of Reference

STECF is requested to review the report of the **STECF-EWG-11-09** Working Group of July 4 – 8, 2011 (Copenhagen, Denmark) meeting, evaluate the findings and make any appropriate comments and recommendations.

Background

The report of the **STECF-EWG-11-09** Working Group was reviewed by the STECF. The report includes the most recent assessments and advice for stocks in the North Sea Celtic and Irish Seas, West of Scotland, West of Ireland, south western waters, Icelandic and East Greenland, Barents Sea and the Norwegian Sea, Faeroe plateau ecosystem and widely distributed and migratory stocks, deep sea stocks and Elasmobranch Resources in the North East Atlantic. The EWG 11-09 Report was amended and adopted by

the STECF at its 37nd plenary meeting and will be published as the STECF review of Scientific advice for 2012 – Part 2.

The STECF review of advice for 2012 Part 1 included the latest assessments and advice for stocks in the Baltic sea and was publishes in June 2011. Part 3 will contain information of other stocks of interest to the European Community and will be published in November 2011. Parts 1 2 and 3 will also be amalgamated and published as the Consolidated STECF Review of advice for 2012 in November 2010.

Format of the STECF Review of advice

For each stock, a summary of the following information is provided:

STOCK: [Species name, scientific name], [management area]

FISHERIES: fleets prosecuting the stock, management body in charge, economic importance in relation to other fisheries, historical development of the fishery, potential of the stock in relation to reference points or historical catches, current catch (EU fleets' total), any other pertinent information.

SOURCE OF MANAGEMENT ADVICE: reference to the management advisory body.

MANAGEMENT AGREEMENT: where these exist.

REFERENCE POINTS: where these have been proposed.

STOCK STATUS: Reference points, current stock status in relation to these. STECF has included precautionary reference point wherever these are available. The stock status is summarised in a "traffic light" table utilising four separate symbols to indicate status in relation to different reference points. The key to the symbols is as follows:

- indicates an undesirable situation e.g. F is above the relevant reference point or SSB is below the relevant reference point

- indicates a desirable situation e.g. F is below the relevant reference point or SSB is above the relevant reference point

- indicates that the status is unknown e.g the reference point is undefined or unknown, or F or SSB is unknown relative to a defined reference point

- indicates that status lies between the precautionary (pa) and limit (lim) reference points

RECENT MANAGEMENT ADVICE: summary of most recent advice.

FISHING OPPORTUNITIES FOR 2012 according to COM(2011) 298-Final. The TACs or effort limits for 2012 that should be proposed according to the rules prescribed in COM (2011) 298-Final).

STECF COMMENTS: Any comments STECF thinks worthy of mention, including errors, omissions or disagreement with assessments or advice.

In addition to summarising the ICES advice and in accordance with the Commission's request to STECF, this report also provides the TAC proposals for 2012 that result from the direct application of the rules laid down in Chapter 6 of the Communication from the Commission concerning a consultation on Fishing Opportunities COM(2011) 298-final.

STECF has been instructed by the Commission to apply the following interpretation of the rules:

Category 1 stocks – Stocks for which harvest control rules (HCRs) have been agreed among all contracting parties sharing the exploitation of a fish stock (e.g. EU and Norway) or adopted by the EU in the context of Multi-Annual Management Plans. The HCRs have to be applied when calculating the catch options which will be included in the scientific advice, taking obvisiously into account results of the stock assessment;

Category 2 stocks – Stocks for which no HCRs have been agreed and data are sufficient to carry out an analytical assessment of the fish stock. The MSY-HCR designed by ICES has to be applied when calculating the catch option.

Category 3 stocks – Stocks for which no HCRs have been agreed and data are insufficient to carry out an analytical assessment. A reduction of 25 % should be applied in the TAC.

Subsequent to the above interpretation, the Commission provided further clarification regarding its requirements for stocks for which no analytical assessment could be carried out. For such stocks the Commission requested that no catch options or fishing effort limits should be released by the STECF and in addition, no recommendation on management options should be made available. Accordingly, for those stocks that are classified as Category 3, a simple statement to that effect is included in the report.

STECF wishes to stress that unless it is explicitly stated in the STECF comments, the TAC and fishing effort proposals arising from direct application of the rules in COM(2011) 298-final should not be interpreted as STECF recommendations for fishing opportunities for 2012.

The STECF review of Scientific advice for 2012 – Part 2 can be found here https://stecf.jrc.ec.europa.eu/reports/review-advice.

6. ADDITIONAL REQUESTS SUBMITTED TO THE STECF PLENARY BY THE COMMISSION SUPPORTED BY ADHOC CONTRACTS

6.1. Request for a STECF opinion on fish stocks exploited under Fisheries Partnership Agreements (Morocco, Mauritania, Guinea-Bissau)

Background

The Fisheries Partnership Agreements (FPAs) allow the European fleet to have access to surplus resources which the third country is not able to exploit. There are presently three mixed agreements with West African countries which provide access to small pelagic and demersal stocks: Morocco, Mauritania and Guinea-Bissau.

The scientific advice on the stock status and on exploitation levels is provided by the Joint Scientific Committees (JSC) established by the mixed agreements, which include scientists from the EU and the third country. For the agreements with West African countries, the JSC base their advice on available data and information, and also on reports by the FAO Fishery Committee for the Eastern Central Atlantic (CECAF), in particular its Scientific Sub-Committee and the Working Groups.

Terms of Reference

For the FPAs with Morocco, Mauritania and Guinea-Bissau the STECF is requested to provide the following advice on the stocks listed below:

- Stock status and classification of stocks according to biological reference points,

- Whether the EU fleet is presently fishing the surplus of the exploited resources[1],
- Level of catches or fishing effort for the EU fleet, corresponding to fishing the surplus of the resources - if possible, with short and medium term projections,
- Closed seasons or closed areas which could be defined,
- Whether management of the stocks concerned is in accordance with the Marine Strategy Framework Directive (environmental pillar of the Integrated Maritime Policy) to reach Good Environmental Status by 2020[2] ,
- Assessment of present management measures against the MSY strategy[3] (catch limit, effort limit, closed seasons or areas),
- Assess the relative impact of the EU fishing fleet considering the overall fishing activity in the area of the FPA,
- Whether the analysis and methods applied to provide scientific advice are adequate to the available data/information (biological and fishery).

STECF should base its advice on the reports of the JSC, on information available from CECAF and on any other available information. In general, the biological and fishery information available to perform analysis and on which to base the scientific advice is limited both in terms of quality and quantity. As an example, fishery-independent information is scarce. Also, it is crucial that not only fishery information from the EU is available, but also from other fleets active in the same area.

Advice to be provided for the stocks listed below. Advice should be provided by management area. The management areas of the species listed below might overlap different EEZ.

Morocco

- Small pelagic:
  - *Engraulis encrasicolus*
  - *Sardina pilchardus*
  - *Sardinella aurita*
  - *Sardinella maderensis*
  - *Trachurus trecae*
  - *Trachurus trachurus*
  - *Scomber japonicus*
- Demersal species:
  - *Merluccius merluccius*
  - *Merluccius* spp. (*M. senegalensis* and *M. polli*)
  - *Raja* spp.
  - Croaker (*Sciaenidae*)

1 Surplus, as defined by UNCLOS - UN, United Nations Convention of the Law of the Sea of December 1982, Part V: Exclusive Economic Zone.

2 DIRECTIVE 2008/56/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), and COMMISSION DECISION (2010/477/EU) of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters (Descriptor 3, part B, of the Annex).

3 COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT - Implementing sustainability in EU fisheries through maximum sustainable yield -COM(2006) 360 final

    - Sea bream (*Sparidae*)
    - Scabbardfish (*Trichiuridae*)
- Sharks:
    - *Centroscymnus coelolepis*
    - *Centrophorus* spp.
    - Other shark species

Mauritania

- Small pelagic:
    - *Engraulis encrasicolus*
    - *Sardina pilchardus*
    - *Sardinella aurita*
    - *Sardinella maderensis*
    - *Trachurus trecae*
    - *Trachurus trachurus*
    - *Scomber japonicus*
    - *Caranx rhonchus*
- Cephalopods:
    - *Octopus vulgaris*
    - *Sepia* spp.
    - *Loligo vulgaris*
- Crustaceans:
    - *Parapenaeus longirostris*
    - *Farfantepenaeus notialis*
- Other demersal species:
    - *Merluccius* spp. (*M. senegalensis* and *M. polli*)

Guinea-Biseau

- Crustaceans:
    - *Parapenaeus longirostris*
    - *A. varidens*
    - *Farfantepenaeus notialis*
- Cephalopods:
    - *Octopus vulgaris*
    - *Sepia* spp.

- *Loligo vulgaris*

- Other demersal species:
  - *Solea* spp.
  - *Merluccius* spp.
  - *Pagellus* spp.

STECF observations

Three reports prepared under the STECF framework for ad hoc contracts were available to STECF:

1."Stocks of small pelagic exploited by European fleet under fisheries partnership agreements signed by Morocco and Mauritania", by Pedro J. Pascual-Alayón, June 2011, 91 pp.

2."Crustacean and cephalopod stocks exploited by the European fleet under fisheries partnership agreements signed with Mauritania and Guinea-Bissau", by Eva García-Isarch and Ignacio Sobrino, 15 June 2011, 143 pp.

3."Demersal fish (hake, other finfish and elasmobranchs) stoks by the European fleet under fisheries partnership agreement signed with Morocco, Mauritania and Guinea-Bissau", by Lourdes Fernández Peralta, Javier Rey and Miguel Ángel Puerto, 20 June 2011, 130 pp.

The reports are available at the STECF PEN-11-02 meeting's web site on https://stecf.jrc.ec.europa.eu/meetings/2011

STECF observations

STECF wishes to commend the authors for their work on the fish stocks exploited under Fisheries Partnership Agreements with Morocco, Mauritania and Guinea- Bissau. STECF would particularly like to thank the experts who carried out the work for their efforts in providing comprehensive overview of the fisheries concerned.

The methodology chosen for the assessments was necessarily limited by data availability (i.e. catch and effort were the only information common to the majority of the fisheries). A dynamic version of the Schaefer model implemented in the BIODYN software was used. This is the most frequently used methodology in CECAF. Data used for the analyses are the data available to CECAF.

STECF was requested to give an opinion on the following:

1) Stock status and classification of stocks according to biological reference points

Assessments for each stock were undertaken using the longest data series available and the calculation of the surplus available catch was based on the most recent assessment. For each of the stocks, their current status was assessed with reference to the most recent year for which appropriate data were available, 2008, 2009 or 2010. This is important and may be a cause for concern because in two or three years the status can change, especially for short living species such as shrimps, octopus and some pelagic species. For instance, the coastal shrimp stock of Mauritania (*F. notialis*) was considered as severely overexploited in 2007 and 2009, but appears to have

suddenly recovered in 2010 (see Report No 2 above). In addition the fishing effort on each stock may radically change from one year to the next, due to the arrival or departure of foreign long distance fleets**.**

A further concern relates to the quality and representativeness of the data used for the assessments. Poor or unrepresentative catch and effort data may mean that the reference point estimates and assessment of current stock status may be unreliable. There are concerns that the input catch data for some species may be underestimated because of an absence of discard estimates of estimates of IUU catches.

Furthermore, STECF notes that the unit of effort used for the assessments is number of fishing days. The catch performance of the various fleets targeting a given resource can be very different, and therefore, effort data should be standardized.

STECF notes that the assessment results presented were based on a review of all stocks recently assessed by CECAF (mainly short living species and pelagics) and give a rather more positive picture of the overall stock status within western African waters compared to the results from other studies. There exists an abundant (sometimes grey) scientific literature on demersal resources for the area, analyzing long term trends in their abundance (Christensen et al. 2004; Gascuel et al. 2007a), undertaking stock assessments (Failer et al. 2006; Gascuel et al 2003 and 2004; IMROP 2007; Ould Mahmoud 2006) and more generally analysing demersal stocks status (Chavance et al. 2004 ; Gascuel et al. 2007b; Labrosse et al. 2010). All of these studies point to the conclusion that demersal resources and especially finfish are strongly depleted in the western African area. For instance, the resolution formally adopted by the participants of the Symposium held in Dakar (Chavance et al. 2004) already highlighted: "*Current demersal biomasses occurring in countries of the sub-region are well below those that will secure high and sustainable production*". Laurance et al. (2004) also showed a significant change in the trophic structure of demersal communities over the last three decades.

In this context, STECF advises that collection of data on discards from demersal fisheries included in fisheries partnership agreement is required. The last report of the Joint UE/RIM scientific committee stresses the potential impacts of the large discards from the fisheries for shrimp in the CECAF area (Anon. 2010).

2) Whether the fleet is presently fishing the surplus of the exploited resources

The concept of surplus can be defined according to the process described by UNCLOS :

> *The coastal states shall determine their capacity to harvest the living resources of the Exclusive Economic Zone (EEZ). Where the coastal states do not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements and pursuant to certain terms, conditions, laws and regulations, give other states access to the surplus of the allowable catch (UNCLOS, 1982).*

In other words, the surplus is a fraction of an allowable catch. It cannot be determined without a preliminary estimate of the coastal states fishing capacity, and without a clear reference to a given objective or policy (defining the allowable catch). In this context, STECF assumes that capacity should be interpreted as the total fishing effort (defined by the fleet capacity and its potential activity) the coastal country is able to apply for the exploitation of its EEZ resources.

According to this definition, STECF considers the method used in the technical reports to estimate the surplus as inappropriate and the results for surplus in the contract reports should not be used as a basis for management. STECF therefore proposes an alternative more appropriate method to

estimate the surplus which could be used as a basis for management. The proposed method is based on the following two criteria:

1. The current fishing effort of the coastal states is assumed to be the total effort that it is able to deploy to exploit its EEZ, thereby determining its capacity to harvest the resources within its EEZ. Thus, the current estimate of surplus should be conditional on current capacity and does not take into account any (unknown) future development of the coastal states' fisheries. In other words, surplus is expressed in relation to the current fishing effort deployed by the coastal states and will need to be re-estimated if the coastal states further develop their own fisheries.

2. Regarding management (harvest) strategies, STECF proposes that two metrics are used. The first one refers to the MSY framework, formally adopted by the EU in accordance with the Johannesburg convention and in which case, the total allowable catch is set equal to the MSY. The second option refers to the $B_{0.1}$ target, which is considered as the management target within CECAF. In the latter case, $C_{0.1}$ (defined as the sustainable yield related to the $B_{0.1}$ biomass) should define the total allowable catch.

For each management strategy, two types of surplus can be calculated. A) The total surplus, defined as that part of the total allowable catch not harvested by the coastal state (or by all the coastal states sharing the same stock, in the case of widely distributed stocks) and B) the available surplus, defined as that part of the total allowable catch remaining after the catches by the coastal states and the non- EU states have been summed. Hence, available surplus is what remains available for EU fleets. Finally, the surplus must be calculated differently according to whether the stock is overexploited or underexploited as follows:

1. For overexploited stocks and referring to the MSY target

i) Total surplus

$$\text{Total surplus} = MSY - Cs_{CC}(B_{MSY}), \text{ where}$$

$Cs_{CC}(B_{MSY})$ is the sustainable catch of the coastal state (i.e. assuming its fishing effort is unchanged) in the context of a global fishing effort ensuring the stock to be at B_{MSY}.

Assuming the catch is proportional to the biomass (accordingly to the Schaefer model used in all CECAF stock assessments):

$$\text{Total surplus} = MSY - Cs_{CC,current} \cdot B_{MSY}/B_{current} \text{ where}$$

$Cs_{CC,current}$ is the current sustainable yield of the coastal country and $B_{current}$ the current biomass

Finally, assuming the sustainable current yield from the coastal country is proportional to the one of the whole fisheries:

$$\text{Total surplus} = MSY - C_{CC,current} \cdot Cs_{current}/C_{current} \cdot B_{MSY}/B_{current} \text{ where}$$

$C_{CC,current}$, $Cs_{current}$ and $C_{current}$ are the current yield of the coastal country, the sustainable current yied for the whole fishery and the current yield for the whole fishery respectively biomass

ii) Available surplus

$$\text{Available surplus} = MSY - C_{NEU,current} \cdot Cs_{current}/C_{current} \cdot B_{MSY}/B_{current} \text{ where}$$

NEU refers to the non-EU fisheries.

2*. For underexploited stocks and referring to the MSY target*

Assuming that the yield from the coastal country remains constant after allocation of the surplus to a foreign country.

Total surplus = MSY - $C_{CC,current}$. $Cs_{current}/C_{current}$ and

Available surplus = MSY - $C_{NEU,current}$. $Cs_{current}/C_{current}$

2*. Surplus for stocks in relation to the $B_{0.1}$ target*

The formulae above can be used by replacing MSY by $C_{0.1}$ (the sustainable yield related to $B_{0.1}$) and the ratio $B_{MSY}/B_{current}$ by $B_{0.1}/B_{current}$

Partial results for surplus using the method proposed by the STECF

Results on surplus for some of the stocks listed in the ToR to STECF are given in Table 6.1.1.

Table 6.1.1 - New surplus estimations (total surplus an available surplus for the EU) in under-or over-exploitation situation, in relation to limit reference point (MSY) or target reference point ($C_{0.1}$)

ock	MSY target		$C_{0.1}$ target		EU landings (for the last year)	Is EU catching only surplus (for the last year)?
	Total surplus	Available surplus	Total surplus	Available surplus		
***longirostris*-Mauritania**	3 281	3 179	2 958	2 857	2 855	YES
***notialis*-Mauritania**	1 617	1 141	1 427	950	1 020	YES/NO (1)
***vulgaris*-Mauritania**	1 424	0	0	0	3 760	NO
***pia spp.*-Mauritania**	2 074	1 812	1 439	1 176	880	YES
***erluccius spp.*-Mauritania**	10 681	10 646	9 609	9 570	5 870	YES
***aurita*-Morocco+ Maurit.**	68 275	0	42 366	0	85 730	NO
***pilchardus*-Mor.+ Maurit.**	415 427	336035			87 300	YES

(1) Depending on the target

Table 6.1.1. indicates that EU fleets are currently (i.e. for the last available year) catching more than the estimated surplus for several stocks of Mauritania, and especially for the overexploited *Octopus* and *Sardinella* stocks. Conversely, large surpluses seem to exist for hake and sardine which in the most recent data year, was only partly caught by EU fleets. Regarding the coastal shrimps (*F. notialis*), the current catch appears close to the surplus (depending on the target). Note that this stock seems to have suddenly recovered in 2010 from a severely overexploited stat in 2009, which means that the surplus was much lower before 2010 and probably less than the EU catch.

Although surplus of exploited resources are presented by stock, STECF notes that Partnership Agreements often refer to fleet categories, some of them jointly exploiting several species. This is

for instance the case for cephalopod fleets targeting *Octopus* with squids taken as as by-catch, or for pelagic fisheries targeting both sardine and the *Sardinella*.

If the Commission requires a time-series of estimates of surplus for all stocks, STECF suggests that these calculations be carried out under an ad hoc contract under the STECF framework and the contract report be reviewed by the STECF using the usual procedures for review.

3) **Level of catches or fishing effort for the EU fleet,** corresponding to fishing the surplus of the resources - if possible, with short and medium term projections

The level of catches for the EU fleets are compared to the surplus of the different resources and short-medium term projections have been presented in the technical report, assuming *status quo* situation with fishing effort kept at the same level as in the current (last year of the assessment) situation or with a fishing effort reduction in some cases of strong over-exploitation (i.e.. Moroccan stocks of *M. merluccius*). Nevertheless, as explained above, STECF expresses its reservations on the methodology used for the estimation of the surplus yield of the resources. STECF suggests the use of the method presented in 2) above to estimate of the surplus of the resources. STECF also suggests that a time series of surplus estimates and short- and medium term projections would be best carried out under an ad hoc contract under the STECF framework and the contract report be reviewed by the STECF using the usual procedures for review.

4) **Closed seasons or closed areas which could be defined**

For small pelagics only one closed season is implemented, i.e. for anchovy in the northern Moroccan waters in winter (January to March). This stock is shared in the southern Moroccan and Mauritanian waters. The biology of this species in these areas remains largely unknown. Therefore, for the protection of the spawning stock, studies on the species biology are needed, prior to the definition of appropriate new closures.

Report No 1 above, indicates that additional potential closed seasons or areas can be identified for other stocks, in particular *Sardinella aurita* (one of the main target species which is currently over-exploited), with the aim of protecting in-coming recruitment.

Based on the available biological information on the species and on the spatial distribution of the fleets, a number of proposals are also given for shrimp and cephalopod fisheries (section 4 of working document no. 2) and for the hake stocks in Moroccan, Mauritanian and Guinea-Bissauan waters (section 3.3 of report No. 3).

Due to a shortage of pertinent information, STECF is not in position to advice on closed seasons and closed areas at this time. Further work is required and STECF suggests that the proposals included in the contract reports should be examined in more detail to assess their potential utility.

5) **Whether management of the stocks concerned is in accordance with the Marine Strategy Framework Directive** (environmental pillar of the Integrated Maritime Policy) to reach Good Environmental Status by 2020

In the context of the MSFD, the Good environmental status (GES) is defined based on 11 descriptors. The working documents addressed the question of the Commission using Descriptor number 3: “Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock”. This descriptor is linked to fishing data and stocks status.

Given that the stock assessments available from CECAF are uncertain and only take into account a few of the stocks that are exploited off West Africa. STECF does not agree that GES has already been achieved in West African waters, even considering only descriptor 3. In addition there is no evidence to support the conclusion that current management measures will ensure GES descriptor 3 will be achieved before 2020.

More generally, STECF notes that additional GES descriptors could be significantly impacted by fisheries and thus by fishery management. This is especially the case for descriptors 1 (biodiversity), 4 (trophic networks) and 6 (seabed integrity). Therefore, any evaluation of fisheries management with respect to GES should include an evaluation in relation to all of these descriptors and not only descriptor 3.

6) **Assessment of present management measures against the MSY strategy** (catch limit, effort limit, closed seasons or areas)

The management recommendations by the CECAF Working Group regarding demersal and small pelagics resources are discussed and summarized in section 6 of working documents no. 1, 2 and 3. Some of them are considered to be in accordance with the MSY strategy. Due to time constraints it was not possible to adequately assess the management measures implemented for the different fisheries during the present plenary meeting.

7) **Assess the relative impact of the EU fishing fleet** considering the overall fishing activity in the area of the FPA

It is unclear what it is meant by "impact". The approach used in the working documents has been to consider the EU catch as a proportion (%) of the total catch, by stock. Based on these percentages, the impact of the EU fleet is considered to be moderate or low. No other information has been taken into account. Furthermore, STECF notes that these percentages are likely to be different if the surplus is calculated using the methodology proposed under heading 2 above.

STECF also note that the assessment of the EU fleets' impact should take into account the potential interactions between fleets, especially when they are targeting the same stocks. In such a case, each fleet may have significant economic impacts on others, and this should be evaluated. More generally, all fisheries may have an impact on the ecosystems functioning, with potential consequences for other fisheries that remain largely unknown. This is also true for intensively studied European ecosystems.

8) **Whether the analysis and methods applied to provide scientific advice are adequate** to the available data/information (biological and fishery)

The problems associated to the assessment process are explained in a detailed form in the working documents. These are related to data gathering (lack of appropriate network or infrastructure, updating of the time series), estimation of population biological parameters (lack of long term sampling programmes for each of the countries), surveys to obtain fishery independent abundance indices (when available, stock oriented, paying limited attention to other species in the ecosystem) and stock assessments (boundaries of the stocks, methods to be used limited by data availability). Furthermore, Illegal, unreported and unregulated (IUU) fisheries are another serious source of uncertainty when estimating actual effort and catches in the CECAF region. STECF stresses the need for sampling programmes to be implemented by the coastal countries to gather the data necessary for the performance of joint assessments and the evaluation of the impact of the fleets.

It is acknowledged in the working documents that both the available data on catches and effort are incomplete. Therefore, a major limitation of the assessments refers to quality of the data that were used, especially when considering that production model used as assessment tool are heavily dependent on catch and effort information. In addition, the methodology used (BIODYN) is not adapted to the life cycle or behavior of many of the species.

As a general conclusion, STECF has four major comments:

1. All surplus estimates presented above were calculated based on the last available stock assessments from CECAF. Due to the stock assessment method used and to the high uncertainty of the catch and effort data (see above), surplus estimates are also highly uncertain. Thus, for almost all stocks, STECF is not in position to certify that EU fleets are currently fishing only surplus. In Mauritania, this seems to be clearly not the case for some major species. For others, more work, more data and more expertise is required to respond to the question with a reasonable confidence.

2. It has to be noticed that even if non coastal states only catch surplus, this does not mean that they have no impact on the local fisheries. Strong interactions may exist between fleets targeting the same stocks. In such cases, selling surplus to foreign countries may have consequences on stock abundance and thus on local fisheries profitability and on opportunities for their development. These potential impacts and fisheries interactions require careful analysis.

3. STECF considers that in relation to an EAFM, the concept of surplus alone is not sufficient to determine whether a fishing partnership between countries will be sustainable. In order to assess sustainability, factors other than surplus of single resources must be taken into account. Harvesting of resources can trigger feedback mechanisms which might threaten the sustainability of the ecosystem. Hence in an attempt to adequately assess sustainability in an EAFM, an assessment of the impacts of fishing on the ecosystem as a whole should be undertaken.

4. In addition, STECF proposes that a group of experts should re-calculate the surplus for each year and for all the different stocks presented in the working documents, using the proposed method. Also, the impact of the EU fleet should be assessed taking into account other information than that used in the working documents (among others, species composition of the catches, impact on the fishing grounds, discards, interactions between fleets).

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7. STRATEGIC ISSUES

7.1. STECF opinion on the delivery of scientific advice on stocks and fisheries

Background

During the 2010 scientific advisory process, problems were faced by scientific advisory bodies when interpreting the Commission Communication on fishing opportunities for 2011 (COM(2010)241-Final). In particular, the classification of stocks into the appropriate category according to stock status was not always straightforward with the result that the TACs derived from the prescribed harvest rules and reported to the Commission by different scientific advisory committees were not consistent.

In 2011 difficulties were also encountered in relation to the interpretation of the Communication on Fishing Opportunities for 2012 (COM(2011)298-Final) in particular for those stock for which the available data were insufficient to perform an analytical assessment.

Terms of Reference

The STECF is requested to discuss

- What could be done to avoid such difficulties faced when interpreting policy statements?
- Within the current process leading to the delivery of advice on fish stock status and of catch or effort limits deriving from Harvest Control Rules, what are the tasks and steps which would clearly need scientific expertise? Due to different assessment procedures, a distinction may have to be made between the following:
    - fish stocks where data are sufficient to run analytical models and where input from scientific experts is needed to undertake short terms catch projections according to prescribed HCRs , and
    - fish stocks where data are insufficient to undertake analytical modelling.

STECF response

STECF had an initial discussion on this item but due to lack of time during the meeting was unable to formulate a comprehensive set of proposals. STECF will continue its discussions by correspondence with the aim of providing a considered response ahead of or during its PLEN 11-03 meeting scheduled for November 2011.

8. GENERAL ISSUES

8.1. Request for an STECF opinion on a possible division of the whole EU area into regions having coherence as an ecosystem to make EAFM operable

Background

Conclusions of the SG-MOS 10-03 working group on the development of the Ecosystem Approach to Fisheries Management (EAFM) in European waters and of the last STECF plenary meeting on the associated report have highlighted the priority need for defining a reference list of European Marine Ecosystems, which would be considered as functional units for an EAFM.

As underlined by the STECF plenary, such lists of ecosystems have already been established, sometimes for very specific purposes. ICES adopted the concept of eco-regions and the Marine Strategy Framework Directive also describes marine regions and subdivisions.

Terms of Reference

By taking into account the existing lists and following both previous conclusions of discussions held by the STECF expert working groups and plenary, the STECF plenary is asked

- to open a first discussion on what could be considered as relevant European Marine Ecosystems
- to establish a first list of such EAFM functional units, with the specific purpose of making operational and operable the EAFM.

STECF comments

STECF notes that "The purpose of an Ecosystem approach to fisheries is to plan, develop and manage fisheries in a manner that addresses the multiplicity of societal needs and desires, without jeopardizing the options for future generations to benefit from a full range of goods and services provided by marine ecosystems" (FAO, 2003; Garcia et al., 2003). Thus STECF considers that the ecosystem approach to fisheries management (EAFM) should be interpreted as the application of the sustainable development principle to the fishery sector. Such an approach aims not only at assessing and reducing the fishing impact on the whole ecosystem, but more generally to ensure that the three pillars of sustainable development are meet: ecological sustainability, economic viability and social fairness for fisheries.

On the utility of defining European Marine Ecosystems

In its 2009 report (STECF PLEN2009_1), STECF already noted that: "a first step for improving EAFM and bio-economic modelling is to define an agreed list of reference ecosystems". These ecosystems would be considered as the functional and assessment units used in EAFM, contributing to making the approach operational and operable.

Such reference ecosystems could especially form the basis for:

- Calculating and monitoring ecosystem indicators in relation to the list defined by the Data Collection Framework (DCF) and by the Marine Strategy Framework Directive (MSFD) (see below);
- conducting "stocks syntheses" in the line with the analysis suggested in the SGMOS 10-03 working group report, providing a global overview of the status of all assessed resources in the various European seas. Such a synthesis will be particularly useful to assess the progress made towards F_{MSY} targets;
- developing fleet-based analyses, to assess the ecological impacts and the economical or social performances of the various fleet segments operating in each European Marine Ecosystem;
- implementing advice-oriented ecosystem and bio-economic models, providing tools to update on a regular basis, an assessment of ecosystem health, to simulate various options for fisheries management, and to investigate compromises between simultaneous and often incompatible biological objectives (such as the objective to reach the Fmsy for all stocks simultaneously) and between ecological, economical and social objectives.

More generally, the purpose of an EAFM is not only to ensure the Good Environmental Status (GES) of ecosystems (in respect to and in close collaboration with the MSFD; see below) it also aims to take into account ecological sustainability, economic profitability and social fairness. Its major objective (its specific value-added) is to analyse tradeoffs between ecology, economy and social aspects, the three pillars of the sustainable development of fisheries.

In other words, ecosystems are the appropriate basic units to develop advice-oriented indicators or models and to make the link between bio-ecological and socio-economical approaches operational, thereby contributing to an integrated approach to the management of fisheries.

Such approaches support a move toward fleet-based management within the ecosystem. It could clearly be part of a framework used to determine which fleet segments would have to be reduced and which ones could be developed. Environmental assessments may for instance be used to guide management plans for fishing effort, or to introduce positive or negative economic incentives in order to favour or reduce some fleet segments, or to encourage fleets to improve their fishing practices. The SGMOS 10-03 working group concluded that the challenge is not to replace the stock by stock regulations which noticeably remain a necessity, but to develop an additional overarching layer of fleet-based management.

Finally, the ecosystem also appears to be the right entity to improve the dialogue and involve stakeholders (e.g. with regards to RACs) and to build integrated long term management plans. Using ecosystems as maritime territories is a way to implement participative management and build negotiated and socially or politically acceptable compromises between various objectives and various stakeholders.

European Marine Ecosystems and MSFD

An objective of the Marine Strategy Framework Directive (MSFD) is to achieve Good Environmental Status (GES) for descriptors that are impacted by human activities. The role of the CFP in contributing to the achievement of GES is clear in the text of the MSFD. The CFP should take into account the environmental impacts of fishing and the objectives of the MSFD. The CFP is required to be used to manage the environmental impacts of fishing to the extent necessary to achieve GES.

Four of the eleven descriptors of GES, as defined by the MSFD, can be directly impacted by fisheries: biodiversity (descriptor 1), stocks status of commercial exploited fish and shellfish (3), food webs integrity (4), and seabed integrity (6). Therefore, managing fisheries to ensure that GES is achieved will require defining appropriate management plan at the level of ecosystems, which is the purpose of EAFM. In other words, implementing EAFM is the way the CFP should manage fisheries accordingly to MSFD objectives.

In this context, STECF strongly advises that European Marine Ecosystems used for EAFM implementation be fully compatible with marine regions and subdivisions defined by the MSFD. Nevertheless, marine regions and subdivisions were defined by the MSFD according to national EEZs (Fig. 8.1.1) and therefore do not match with the boundaries of ICES subdivisions or fisheries regulation divisions (e.g. a large part of the North Sea is part of the Norwegian EEZ and thus is not included in the MSFD region of the North Sea). As a consequence, some adaptation is required. European Marine Ecosystems have to be defined as close as possible to MSFD regions, in order to set up an operational zoning for the CFP and an EAFM, ensuring that fisheries might be managed to achieve the GES of MSFD.

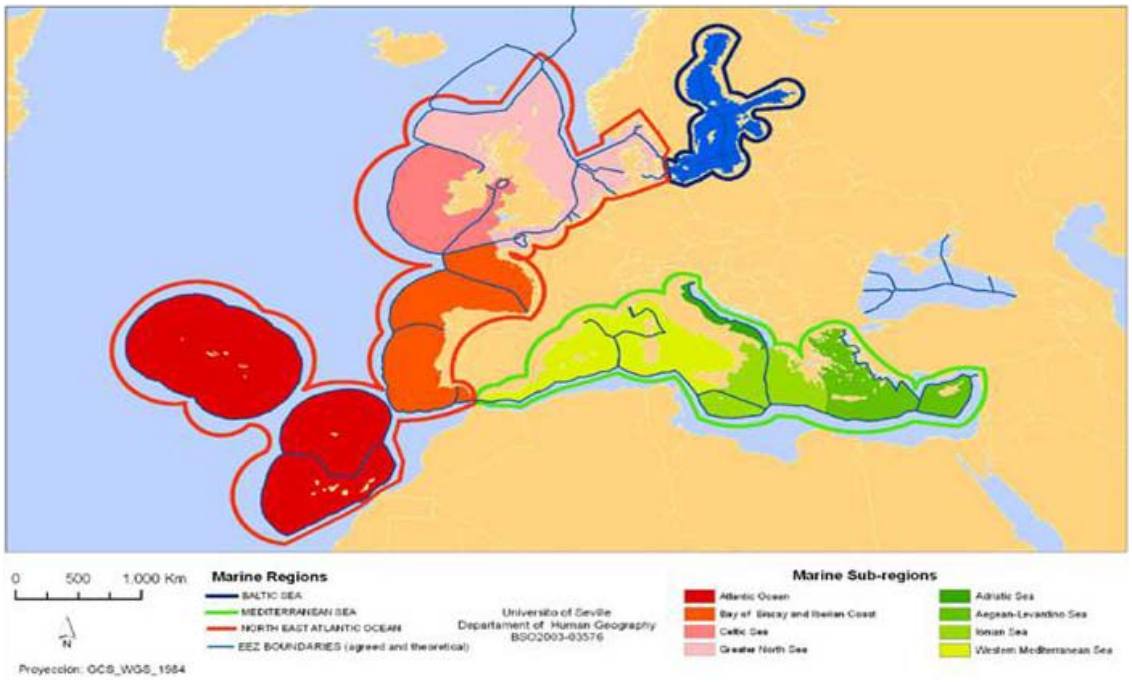

Figure 8.1.1. Marine Regions and subdivisions defined by the Marine Strategy Framework Directive (MSFD)

STECF also notes that a lot of research has been carried out in an attempt to develop methods for assessing the global impact of fishing on marine ecosystems. In coordination with ICES and supported by expert consultations, this resulted in a specific in a list of nine ecosystem indicators that were agreed by STECF in 2007 (PLEN-07-03) and whose related data requirements are included in the DCF. In particular, indicators 1 to 4 (conservation status of fish species, proportion of large fish, mean maximum length of fishes, and size at maturation of exploited fish species) aim at assessing the global fishing impact on ecosystems and on their functional biodiversity. In the context of the MSFD, STECF considers that these ecosystem indicators can be calculated and should be monitored on the basis of European Marine Ecosystems, thereby contributing to an evaluation of GES.

Defining a reference list of European Marine Ecosystems

STECF considers that two types of existing areas, which are largely coincidental, should be used as a basis to define the reference European marine ecosystems:

- the Eco-regions adopted by ICES (Fig. 8.1.2) can be considered as an adaptation to the fisheries management needs of the marine regions defined under the MSFD; in European waters, the defined areas are almost the same except that boundaries are fixed by ICES for Eco-regions accordingly with its own divisions or subdivisions limits;
- the RACs subdivision (Fig. 8.1.3). However some RACs refer to a very large and heterogeneous regions that would best be divided into smaller regions to delineate ecosystem limits.

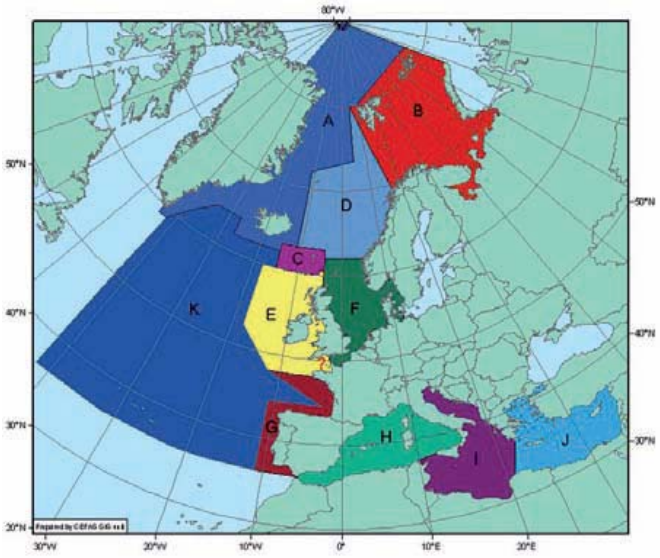

Figure 8.1.2. Eco-regions proposed by ICES for the implementation of the ecosystem approach in European waters.
The eco-regions are Greenland and Iceland Seas (A), Barents Sea (B), Faroes (C), Norwegian Sea (D), Celtic Seas (E), North Sea (F), South European Atlantic Shelf (G), Western Mediterranean Sea (H), Adriatic-Ionian Seas (I), Aegean-Levantine Seas (J) and Oceanic northeast Atlantic (K) (From ICES 2004).

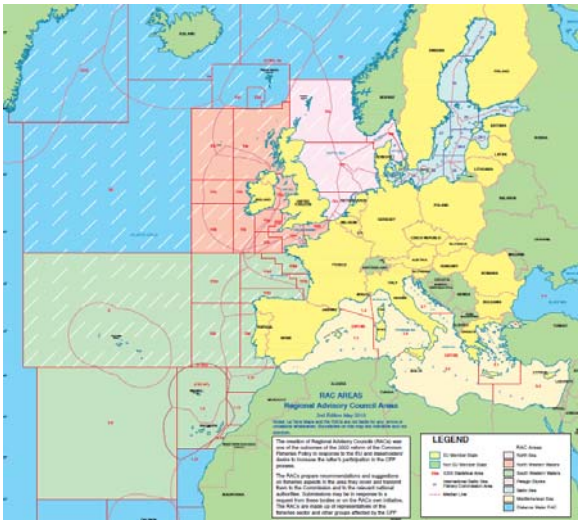

Figure 8.1.3. RACs limits

RACs are : Baltic Rac, North Sea RAc, North western waters Rac, South western waters Rac, Pelagics stocks, Distance waters Rac.

STECF therefore considers that the candidate list suggested in the SGMOS 10-03 working group report (Fig. 8.1.4) meets three important requirements: it is very close and fully compatible with the ICES Eco-regions (and therefore very closely matches the MSFD marine regions), it also matches the RACs areas, and it relates, at least for a large majority of suggested ecosystems, to entities commonly used in many research programs, management rules or committees (Baltic sea, North Sea, ….).

Comparing this candidate list to ICES Eco-region, some questions remain to be resolved:

1. Where to place the English Channel?

According to MSFD, the entire Channel is part of the North Sea marine region, while it is under the jurisdiction of the North Western Waters RAC, and thus linked to the Celtic Sea from this point of view. By contrast, the ICES Eco-region combines the Eastern Channel to the North Sea and the

Western Channel to Celtic Sea. STECF agrees that the ICES limit between VIId and VIIe is based upon ecological considerations, corresponding to the limits of several important fish stocks and of several fisheries. Thus STECF suggests that the boundary between ICES Divisions VIId and VIIe be taken to be the limit between the Celtic Sea and the North Sea Marine Ecosystems, even if not fully in accordance with the marine regions defined by the MSFD.

2. Azores and Canarias/Madeira

The Azores and the Canarias/Madeira Marine Ecosystems suggested in the SGMOS 10-03 WG report are not defined as ICES Eco-Regions and were not explicitly considered in the 2004 ICES consultation (the second one being outside of the ICES jurisdiction area). Nevertheless, they clearly have to be considered in the MSFD, where they are defined as the Atlantic Ocean marine sub-regions.

3. The Mediterranean Sea

The 2004 ICES consultation suggested splitting the Mediterranean Sea in three parts, but also mentioned that each area could be sub-divided in 2 zones. Thus, considering four marine Ecosystems, as suggested in the SGMOS 10-03 report is still in the line with this consultation and appears in accordance with MSFD, where the Ionian and the Adriatic Seas are defined as two distinct marine sub-regions.

4. Splitting the "Celtic Sea and West of Scotland" and the "Bay of Biscay and Iberian Coast"

The SGMOS 10-03 report suggested dividing the "Celtic Sea and West of Scotland" Ecoregion of ICES in three marine ecosystems (the West of Scotland, the Irish Sea and the Celtic Sea restricted to divisions VIIe-k), and dividing the "Bay of Biscay and Iberian Coast" Ecoregion in two ecosystems (the Bay of Biscay including VIIIabd, and the Iberian coast). STECF notes that these subdivisions are consistent with fisheries units and are commonly used in many studies performed by ICES and STECF. They are also compatible with a more aggregated approach if/when needed.

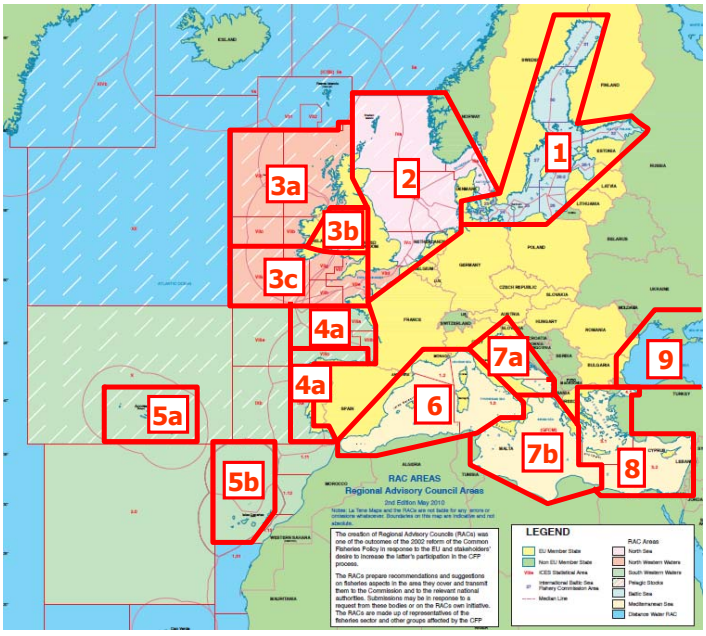

Figure 8.1.4. *European Marine Ecosystems suggested by STECF*

STECF recommendation

STECF therefore recommends that the candidate list of marine ecosystems defined in Table 1 be considered as the basis for an EAFM. STECF also suggests that the candidate list be considered in consultation with RACs and stakeholders and National Administrations, before being formally adopted.

Table 5.1. Reference list of European marine ecosystems suggested by STECF

	Ecosystem	FAO subdivisions	RAC	ICES Eco-regions
1	Baltic sea	ICES IIIb, 22-32	Baltic sea	Baltic sea
2	North sea	ICES IVa-c, IIIa, VIId	North sea (except VIId)	North sea
3a	West Scotland/Ireland	ICES VIa-b, VIIb-c	North western waters	Celtic Sea and West of Scotland
3b	Irish sea	ICES VIIa	North western waters	Celtic Sea and West of Scotland
3c	Celtic sea	ICES VIIe-k	North western waters	Celtic Sea and West of Scotland
4a	Bay of Biscay	ICES VIIIabd	South western waters	Bay of Biscay and Iberian Seas
4b	Iberian coast	ICES VIIIc, IXa	South western waters	Bay of Biscay and Iberian Seas
5a	Acores	ICES X	South western waters	Atlantic ocean
5b	Canarias, Madeira	CECAF 1.2	South western waters	Atlantic ocean
6	Western Medit. Sea	GFCM 1.1, 1.2 & 1.3 (GSA 1-12)	Mediterranean Sea	Western Medit. Sea
7a	Adriatic Sea	GFCM 2.1 (GSA 17-18)	Mediterranean Sea	Adriatic-Ionian Sea
7b	Central Medit. Sea	GFCM 2.2 (GSA 13-16, 19-21)	Mediterranean Sea	Adriatic-Ionian sea
8	Eastern Medit. Sea	GFCM 3.1, 3.2 & 4.1 (GSA 22-28)	Mediterranean Sea	Aegean-Levantin sea
9	Black sea	GFCM 4.2 (GSA 29)	- none -	- none -

9. WESTERN WATERS AND THE NORTH SEA

9.1. Request for a STECF opinion on a possible closure for Cod in ICES subdivisions IIIa and VIa

Background

Cod is known to be a hyper-aggregating species, meaning that even at low abundance levels it is possible to find areas of high cod density. This can lead to substantial catches in localised areas, at low fishing effort levels, causing high mortality on the stock. In order to protect cod in certain aggregating areas and seasons, over the years a number of spatial and temporal restrictions on fishing for cod in ICES Division VIa have been implemented. The cod plan itself (Council Regulation (EC) No 1342/2008) allows the allocation of additional effort to vessels avoiding certain biologically more vulnerable areas.

Given that the cod stock in ICES Division VIa is suffering from impaired recruitment and SSB is very low, it is necessary to reduce all sources of fishing mortality to recover the stock above Bpa as quickly as possible.

In the context above, in addition to the existing technical measures (see Council Regulation (EC) No 1288/2009) it may be appropriate to consider another spatial and temporal restriction in ICES Division VIa.

In addition, The Commission recognises that further conservation measures are needed to protect the stock of cod in the Kattegat.

Terms of References

In this context, STECF is requested

1. To advise on the expected reduction of fishing mortality and SSB increase for cod in ICES Division VIa following the closure of the cod fishery from 1 February to 31 March in an area within ICES Division VIa defined by the rhumb lines which sequentially join the following coordinates:

7°00W, 55°00N

6°00W, 55°00N

6°00W, 55°30N

7°00W, 55°30N

As cod is taken in a mixed demersal fishery, the STECF is also requested to advise on possible adverse effects resulting from the displacement of effort to other areas as well on the economic consequences for the fleets concerned as a result of implementing the aforementioned restriction.

2. To identify possible areas in the Kattegat for a seasonal closure of all trawl-related fisheries, other than those identified as catching negligible quantities of cod, from 1 January to 30 April. STECF should evaluate the effectiveness of such seasonal closures in respect of their conservation effects and, in particular, the protection afforded to the spawning stock.

Terms of Reference 1. Effects of the proposed closure on F, SSB and effort displacement

STECF response

STECF notes that no background documents were provided in relation to this item.

The STECF reviewed the cod recovery plans (EWG 11-07) including the effect of the plan in ICES subdivision VIa, and the report of EWG 11-07 contains material relating to the possible closed area under consideration. The proposed area is shown in Figure 9.1.1 and Section 5.2 of the EWG 11-07 report indicates there have been unilateral closures, by Ireland, of a traditional fishery for juvenile cod off Greencastle. This voluntary closure was in force for variable periods of time between 2003 and 2006. Section 7,2.2. of the EWG 11-07 report also describes a seasonal closure (to all fishing gears) in ICES division Via introduced by the Irish Authorities. The area bound by ICES statistical rectangle 39E3 (Figure 7.2.6) is closed from 1 October to 31 March to all Irish vessels, irrespective of fishing method. This period coincides with peak cod catches (Irish Statutory Instrument [Fisheries Management Notice No. 07 of 2011]).

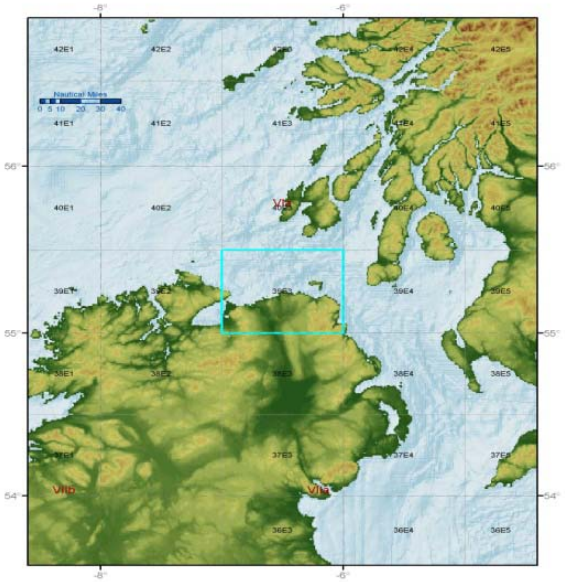

Figure 9.1.1 Location of the Irish seasonal closure

Expected reductions in fishing mortality arising from the proposed temporary closure.

STECF is asked to advise on expected reductions of fishing mortality and increase in SSB for cod in ICES Division VIa following a temporary closure in a defined part of Div VIa. However,

STECF notes that area VIa does not have an accepted assessment, citing problems of survey redesign and unallocated removals. In the absence of an accepted analytical assessment of the cod stock, the absolute overall changes in fishing mortality arising from the proposed closure cannot be estimated.

STECF notes that the Irish national closure, introduced in 2009 and coinciding exactly with the area of the proposed closure under consideration here, was considered by STECF in April 2011. That evaluation was focused principally on estimating whether reduced Irish landings between 2008 and 2009 (assumed to arise from the closure) contributed the forecast 17% reduction in Irish fishing mortality on cod predicted for the closure. STECF concluded that the reduction was *at least* 17%. Estimates of partial mortality derived from updated catch information from the ICES advice are given in Table 9.1.1. The partial mortality on VIa cod exerted by the Irish fleet is only about 0.5% of the overall mortality. Hence, the impact of the closure on the overall F of VIa cod will be negligible because the vast majority of cod catches from VIa are currently taken in the northern part of the division. The effect of the closure on SSB of VIa cod is expected to be small.

Table 9.1.1 Estimates of partial mortality derived from upodates catch information from the ICES advice

Year	ICES Estimated Total Removals (less assumed M) (t)	ICES reported catches	STECF EWG 1106 est catch	Irish Catch (t)	Irish Quota uptake (%)	Mortality due to estimated removals	Partial Mortality due to Irish catch
2008	4718	1360	1469	58	66%	0.91	0.0112
2009	4555	1623	987	24	37%	0.89	0.0047
2010	5761	1422	1252	35	67%	0.82	0.0050

Effects of effort displacement arising from the proposed temporary closure

Based on the results given in the EWG 11-07 report, STECF noted that effort displacement resulting from the plans was not assessed and may have had a negative impact on achieving the objectives of the plans. Therefore, STECF has no information available on which to base quantitative advice about effects of effort displacement during the proposed closure.

Furthermore, STECF had no access, during its plenary meeting, to data or models to make a quantitative assessment of economic consequences of the proposed closure although a qualitative statement in respect of this is given in the conclusions below.

STECF conclusions

STECF **concludes** that the closure will have negligible impact on the overall fishing mortality on cod in VIa and hence will have a limited effect on the SSB.

STECF **concludes** that the proposed temporary closure of the cod fishery in Via is likely, in the short term, to have negative financial and economic consequences for vessels displaced to other areas. In the longer term, any improvement in SSB resulting from the temporary closure could possibly be reflected in larger harvest opportunities and could possibly improve economic outcomes. Given the low proportion of total fleet catch that comes from the area in question however, effects on the overall harvest opportunity are likely to be small. It is not possible to conduct detailed quantitative assessments during plenary meetings.

STECF recommendations

STECF has no recommendations in relation to this question.

Terms of Reference 2: Effect of seasonal closures in the Kattegat

STECF observations

There are already some permanent and seasonal closed areas in the Kattegat whose purpose is to protect spawning cod and juveniles. According to section 7.2.2 of the report of EWG 11-07, all Danish vessels fishing in Kattegat with TR2 gear are subject to the joint Danish and Swedish seasonal and permanent area closures in Kattegat and the Northern part of the Sound.

Figure 9.1.2 depicts the following:

Area 1 (outlined in black) which is closed 1 January-31 March (spawning season), except for fishery with selective gears with a very low catch of cod; The area outlined in black in the Northern Sound (”Kilen” or the triangle) is closed 1 February-31 March, except for fishery with selective gears;

Area 2 (outlined in orange) is closed for all fisheries except fisheries with selective gears.

Area 3 (outline in red) is closed for all fisheries, including recreational fisheries.

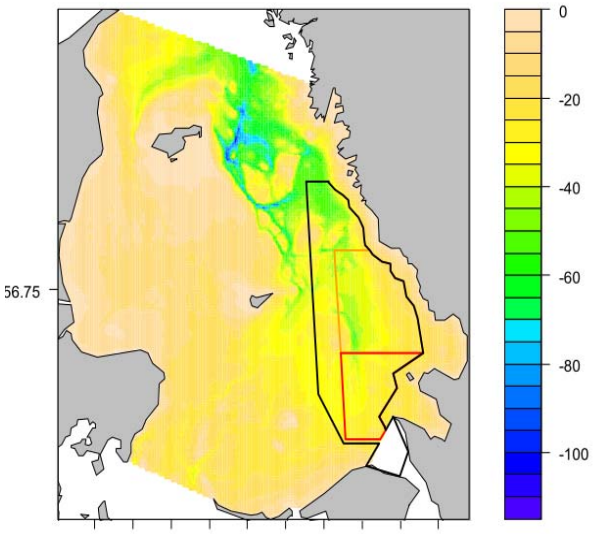

Figure 9.1.2 . Location of Danish and Swedish spatial closures in the Kattegat.

It is not possible to reliably estimate the impact of existing closed areas in terms of reductions in fishing mortality because it is not possible to estimate what would have been caught by affected vessels in the absence of the area closure. Estimates of impacts associated with effort displacement are also not possible with available data.

The Danish authorities adopted a modelling approach, through the definition of CPUE contours based on fishery independent survey data across the entire area and overlaying the effort data based on VMS 'pings'. This is not predictive but estimates a relative change in cod catches from a situation if the closure had not been in place. The analysis shows that that fishing effort has been redistributed into areas of lower CPUE (based on modelled survey data).

STECF (2011) concluded that the closures are likely to have resulted in redeployment of effort from areas with relatively high catch rates to areas with relatively lower catch rates. STECF (2011) also concludes that such redeployment of effort is likely to have resulted in a lower fishing mortality on cod in the Kattegat than would otherwise have occurred. STECF considers that the estimated reductions in fishing pressure of 24%, defined as the product of cod density and effort, provide the best proxy estimate for the expected local removals of vessels monitored with VMS.

STECF conclusions

At the present time, STECF has no proposals for further seasonal closures to protect cod stocks in the Kattegat.

STECF recommendations

STECF has no recommendations in respect of this question.

9.2. Request for a STECF opinion on possible by-catch conditions in cod fisheries of ICES subdivision VIa

Background

Cod in ICES Division VIa (West of Scotland) is taken in mixed demersal fisheries. Otter trawl gear vessels (TR1, mesh sizes ≥ 100 mm) targeting finfish take roughly 80% of cod catches and the 70-99 mm Nephrops fllet (TR2, 70 ≤ mesh sizes < 110 mm) take 15-20% of the catch. A TAC for cod in ICES Division VIa is set annually (see Council Regulation (EU) No 57/2011 and previous Regulations) in accordance with the rules laid down in the cod plan (Council Regulation (EC) No 1342/2008).

The cod stock in ICES Division VIa (West of Scotland) is suffering from impaired recruitment and the SSB is very low. It is therefore necessary to reduce all sources of fishing mortality to recover the stock above Bpa as quickly as possible.

As cod in ICES Division VIa is taken as a by-catch in a mixed fishery, it may be appropriate to set annual catch limits on a by-catch basis under TACs for the other species caught in the same fishery. This would eliminate fisheries targeting cod, increase selectivity and allow other fisheries not targeting cod to continue operating..

Terms of References

The STECF is requested to advise on the likely effects, on the cod stock as well as on the fleets concerned, of regulating the permitted landings of cod from ICES Division VIa as a proportion of the landings of other species (by-catch limit) as a stand-alone restriction (option 1) and in combination with a TAC restriction (option 2). Options 1 and 2 should be compared between themselves and with the current situation (i.e. TAC restriction alone). The STECF is requested to advise on appropriate cod by-catch percentages for each of the species concerned.

STECF response

In the West of Scotland, cod is caught by two fleets, a demersal otter trawl fleet (TR1), and a Nephrops fleet (TR2) which fish in different areas. Catches have fluctuated without any trend over the time period and remain high despite progressive reduction in TAC. The predominant cod catching gear is TR1catching 94% and 98% of the cod catch in 2009 and 2010 respectively. For the TR1 the discard rate for cod for this has risen steadily to over 80% in 2010.

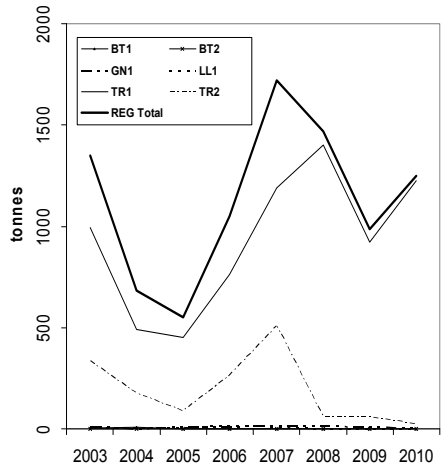

Fig 9.2.1 Catch (landings +discards - tonnes) for the main regulated gear types operating under the cod plan in in the West of Scotland. Data presented for 2003-2010, showing that most of the catch comes from the TR1 (demeral otter trawl fleet) with small proportion of total catch in TR2(the Nephrops fleets)

Considering by-catch limits as proportions of landings: STECF notes that fleets may comply with landings composition regulations simply by discarding components of the catch (TR1). Such regulations will thus not be effective towards controlling fishing mortality on cod. STECF does not recommend this approach.

Considering by-catch limits as proportions of total catch (landings plus discards): In its recent review of the cod plan (STECF EWG 11-07), STECF identified the use of by-catch limits as specified in Articles 11 and 13 as a flaw in the design of the plan. This is because there is no *a priori* clear relation between the percentage of cod in the catch and the fishing mortality rate of cod: (i) A low cod percentage may be achieved when (local) abundance of cod is low but in such a case it would represent a high F; (ii) A lower cod percentage may also be achieved by increasing the catches of other species (while keeping cod catches at similar levels) and a perverse incentive may arise in favor of using smaller mesh gears to achieve a 'high' overall catch; (iii) Catch compositions also depend on the relative abundances of the various other stocks in the mixed catch assemblage; (iv) Furthermore, if many vessels have a small percentage of cod in their catch, the total amount of cod caught may still be high.

The EWG suggested that a system based on proportion of total expected cod outtake from the whole fishery would be more appropriate.

STECF considers that if a by-catch measure for cod is to be implemented, (e.g. for fleets for which managers request to catch cod as a by-catch because of low cod catch) it could be allocated through a total allowable catch (landings and discards) of cod, as a portion of the total MS's cod quota, and managers would be required to demonstrate that these cod catches are not exceeded. This might be appropriate for TR1 and would provide fishermen with a target that is directly measurable by them and relates well to fishing mortality on cod. However, the detailed monitoring required could be costly, particularly if a small part of the total national catch of cod is taken in a small bycatch fishery that is expensive to monitor (TR2 Nephrops fishery). Managers could then be given the option to either allocate a very small but sufficient portion of the national quota to these vessels and take on the burden of detailed monitoring, or alternatively allocate a larger portion of the national quota to these vessels using a less precise monitoring method. It would then be cheaper to demonstrate that the larger portion quota was not exceeded. In some areas technical solutions such as grids have been used successfully to remove catches of fin fish from Nephrops fisheries. STECF considers that this approach is likely to be applicable in this area, but would need to be verified.

In the context of the West of Scotland, STECF recommends that the allowable catch be set as catch based on landings and discards and that high-coverage of monitoring of the catches (and compliance with the catch quota) is put in place (e.g. fully documented fishing through cameras on board). An alternative option is the introduction of a discard ban for cod, in that case the allowable catch of cod should be allocated to vessels that undertake to land all cod caught and provide fully documented fishery data including systems to show that no cod has been discarded.

9.3. Request for a STECF on the possible setting up of additional management units for Norway Lobster in ICES sub-division VII

Background

Nephrops are limited to muddy habitats and require suitable sediments that define the species distribution. This species is therefore distributed in a patchwork configuration, defined by scientists as Functional Units (FUs). As adult Nephrops only undertake very small scale movements (a few 100 m) and larval transfers do not always occur between mud patches, these independent FUs are often at different biological status requiring distinct management measures. Despite the Nephrops biology and related environmental considerations, the exploitation of Nephrops by the various fleets across ICES Subarea VII (around Ireland) does not distinguish TACs and quotas per FU, except for a restrictive quota (see Council Regulation (EU) No 57/2011) that may be taken from the Porcupine Bank (FU16) due to the depleted state of this stock. This makes some stocks, particularly those with lower average density, vulnerable to localised depletion.

ICES advised in 2010 that management of Nephrops stocks should be at FU level rather than across ICES Subarea VII as a whole. The current management of Nephrops allows catches to be taken anywhere in the TAC area, except in the Porcupine Bank where specific quotas were introduced in 2011, potentially resulting in inappropriate harvest rates for some FUs. Nephrops fisheries in the Porcupine Bank clearly illustrate this situation, where a large increase in effort from 2002 to 2007 resulted in substantial stock decline.

Despite the desirability to manage all Nephrops stocks per FU in ICES Subarea VII, alternative management measures could be explored.

Terms of References

The STECF is requested to advise on the impact, both on the stock and on the fishery, of the introduction of restrictive quotas for Nephrops taken in the Porcupine Bank. It is expected not only a description, and possibly quantification, of the impact of this measure for FU16 but also an analysis of possible collateral adverse effects (e.g. displacement of effort to other areas) and advice on the corresponding economic consequences for the fleets involved.

On the basis of the status of each FU, the STECF is requested to advise whether any other FU require conservation measures similar to those introduced in the Porcupine Bank in 2011.

STECF response

STECF first notes that restrictive quotas for *Nephrops* taken in the Porcupine Bank have only been introduced in 2011. As the 2011 fishing season is still ongoing, STECF considers that it is too premature to give advice on the impact such measures may have on the status of the *Nephrops* stock and fishery in FU16 and on other FUs in ICES Subarea VII. STECF considers that the impacts are unlikely to be detectable until at least 2012 and possibly not before 2014 depending on availability of appropriate data and information. STECF notes that the ICES advice for this Functional Unit in 2011 (based on trawl survey results) points to low recruitments and low levels of abundance from 2004 to 2008, and improved recruitment in the 2009 which has resulted in increased abundance and biomass in 2010.

STECF notes that information on fishing effort distribution collected through the framework of the EU Data Collection Programs is not available at an adequate spatio-temporal scale to analyse any potential effort displacements as a consequence of the measures mentioned above. STECF recommends that an analysis of VMS effort data for all fleets participating in the *Nephrops* fishery in FU16 be carried out in order to assess effort re-distribution over other FUs in Subarea VII or indeed other ICES Subareas. STECF has no economic information which would allow a quantification of the economic consequences for the fleets involved in the fishery. If this task is to be carried out, STECF suggests that thus should be addressed by means of a specific data call and a dedicated contract under the STECF framework.

STECF notes that a seasonal closed area was introduced in 2010 and is also in place in 2011. An analysis of the spatial dynamics of the fleet during the closure in 2010 shows that the closure was respected and is expected to have resulted in a reduction in fishing mortality because the closed area covered 75% of the distributional area of the stock where Nephrops densities are highest. However, some fishing effort was displaced to the remaining 25% of the stock area not covered by the closure in 2010 and may have inadvertently increased fishing mortality on that component of the stock. STECF considers that given the sedentary nature of *Nephrops* populations the closed area could be an appropriate management tool to substantially reduce catches and fishing mortality to allow for stock recovery, on the condition that any redeployed effort does not negate the reductions in F realized by the closure.

STECF notes that over recent years, landings have oscillated between 70% and 80% of agreed TAC meaning that the TACs for ICES Subarea VII may not be restrictive and as a consequence may not be an adequate measure to control fishing pressure.

STECF notes that, for all FUs in ICES subarea VII, none is currently in a situation that would require conservation measures similar to those introduced in the Porcupine Bank in 2011. A summary of stock status and ICES advice by FU is given in the table below:

Functional Units	**Summary of stock status**	**ICES advice**
FU14	Current harvest rate is below the FMSY proxy.	<960t
FU15	Stock abundance at high levels and above MSY Btrigger. Recent harvest rates have fluctuated around FMSY.	<9800t
FU16	The average recruitment observed in the 2009 survey has resulted in increased abundance and biomass in 2010.	Do not increase catches
FU17	Density is considered high, recent harvest rates have been low and the stock size has been fluctuating	<1100t

FU19	The state of the stock is unknown	Reduce catches
FU22	Stock size stable. Indications of strong recruitment in recent years (e.g. 2006)	<2300t
FU20-21	The state of the stock is unknown	Reduce landings

STECF notes however that current management of *Nephrops* in Subarea VII (both in terms of TACs and effort) does not provide adequate safeguards to ensure that local effort is sufficiently limited to avoid depletion of resources in separate Functional Units. The current situation allows for catches to be taken anywhere in the TAC area and this could imply inappropriate harvest rates in some FUs. STECF thus reiterates its recommendation that management should be at the FU level. This should provide the controls to ensure that catch opportunities and effort are compatible and in line with the scale of the resources in each of the stocks defined by the Functional Units in ICES Subarea VII.

STECF notes that Porcupine Banks *Nephrops* stock is not the only one managed within the European framework that has shown sharp decline in population status. For example, there has been advice for management action in FUs 26, 27, 28 and 29 off the Iberian Peninsula and FU6 (Farn Deeps) in the North Sea. In these cases, management at a Functional Unit level may have helped to avoid the deterioration of stock state in the first place. Furthermore, where a stock is in a poor state, management at a Functional unit could facilitate the development of localized management measures designed to improve the situation.

9.4. Request for a STECF opinion on results of the fully documented fisheries on Sole in the Western Channel

Background

During the 2010 December Council, The Commission and Council agreed on the need to closely monitor and evaluate the initiative on fully documented fisheries for the sole fishery in the Western Channel and in particular to assess the effect of these measures on the reduction of sole discards in this area on the basis of data to be provided by the Member States concerned.

Terms of References

STECF is requested to deliver an opinion on the effectiveness of this initiative, particularly with regards the evolution fishing mortality rates and discards.

STECF response

In the 2010 Spring Plenary, STECF concluded that the extension of the project 50% trial in the Western Channel sole fishery to include fully documented fisheries would require an evaluation of its effectiveness (2010 Spring Plenary Report, point 6.9).

According to background information made available to STECF, no such trial to assess the scheme's effectiveness on discard reduction (gear modification + CCTV on board + catch quota implementation)took place in 2010.The 2011 trial, which is currently running, involves three vessels and will conclude at the end of the year. No information is yet available in order to assess the effectiveness of this trial.

9.5. Request for a STECF opinion on the fishing effort ceilings allocated in Sole and Plaice fisheries of the North Sea

Background

In accordance with Article 9 of the Council Regulation (EC) No 676/2007 establishing a multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea the maximum level of fishing effort available for fleets where either or both plaice and sole comprise and important part of the landings or where substantial discards are made should be adjusted to avoid that planned fishing mortalities rates are exceeded.

The Commission has to request STECF advice on the maximum level of fishing effort necessary to take catches of the plaice and sole. When preparing the advice STECF should take into consideration TAC advice, the Consultation on Fishing Opportunities for 2011 and follow the regulation [R (EC) No 676/2007]. Similar advice was requested from STECF in the previous years.

Terms of References

STECF is requested:

1. to advice on the maximum level of fishing effort necessary to take catches of the plaice and sole equal to the EU share of the TACs adopted according to the multiannual plan for plaice and sole in the North Sea [R (EC) No 676/2007];

2. to report on the annual level of fishing effort deployed by vessels catching plaice and sole, and to report on the types of fishing gear used in such fisheries;

3. to provide the ranking of the gear groupings as provided in Annex IIa of the FO regulation according to contributions of those gears to plaice and sole (separately) catches and landings in 2009.

STECF response

STECF observes that similar advice has been requested in 2007, 2008, 2009 and for 2010 (see reports STECF winter plenaries 2007, 2008, 2009 and 2010 (see https://stecf.jrc.ec.europa.eu/reports/plenary and end of section 9.5 of this report); report 2007, 2008, 2009 and 2010 STECF review of scientific advice (see https://stecf.jrc.ec.europa.eu/reports/review-advice and end of section 9.5 of this report). STECF follows the same approach for the current request. STECF notes that the TAC advice (following the

regulation [R (EC) No 676/2007]) given for North Sea sole and plaice respectively implies a reduction of F in 2012 relative to F in 2011 of 10% for sole but an increase of 21% for plaice. Assuming (as before [STECF review of scientific advice 2007, 2008, 2009 and 2010]) a proportional relationship between fishing mortality and effort in kW*days, and a constant EU share of the TAC for plaice, STECF considers that the best estimate of the maximum level of fishing effort necessary to take catches equal to the EU shares of the TACs, would be equivalent to a reduction in effort in 2012 relative to 2011 of 10% when considering sole in isolation and a 21% increase when considering plaice in isolation.

Plaice is mainly caught together with sole in a mixed beam trawl fishery. Therefore, the maximum level of fishing effort necessary to take catches of both species equal to the respective EU shares of their TACs, would be equivalent to an increase in effort in 2012 relative to 2011 of 21%. STECF notes that this amount of effort would likely lead to a mismatch between effort and the sole TAC adopted according to the flatfish plan [R (EC) No 676/2007], potentially leading to overquota sole catches (under the assumptions of the calculations above the sole TAC would be overshot by around 4,300 t, or around 27%).

STECF notes, however, that in order to deal with the imbalance in effort, there is a potential for spatial management to balance the mixed fishery TACs of both species under some circumstances. There are more northerly areas of the North Sea where concentrations of plaice are much higher than sole. North of 56°N (Council Reg. 2056/2001) the mandatory 120mm codend mesh nets will catch plaice with negligible sole catches. A fishery to take plaice independently of sole is therefore possible in these more northerly areas of the North Sea. If there is surplus effort available in addition to that required to take the sole TAC, it would be possible to redeploy that effort within a spatial management regime (subject to any constraint resulting from the NS cod plan).

Such a spatial approach would give a mechanism for balancing the respective quota, such that any remaining plaice quota can be fished without any undesirable sole bycatch, when the sole quota has been exhausted. However, it would require spatial effort regulation, restricting the transfer of existing and potential additional effort from the more northerly North Sea (plaice fishery) to the mixed sole and plaice fishery in the southern part of the North Sea (see also SGMOS-10-06b, impact assessment of North Sea sole and plaice multi-annual plan).

The main regulated gear catching sole and plaice are the beam trawls with mesh size equal to or larger than 80 mm and less than 120 mm (BT2); bottom trawl with mesh size equal to or larger than 100 mm (TR1); bottom trawls with mesh size equal to or larger than 70 mm and less than 100 mm (TR2); and to a lesser extent gill nets (GN1); beam trawls with mesh size equal to or larger than 120 mm (BT1); bottom trawls with mesh size equal to or larger than 160 mm and less than 32 mm (TR3); trammel nets (GT1) and longlines (LL1). The deployed level of effort (kW*days) in the North Sea for these gears over the period 2000-2010 is presented below.

ANNEX	REG AREA	REG GEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
IIa	IV	BT2	81454512	77585759	66598651	60347021	59374478	58960080	50359617	48377347	36065424	36872572	36203784
IIa	IV	TR1	55949932	51538752	55884044	31790919	25421124	24741705	24777389	21408891	24059117	23912701	19618345
IIa	IV	TR2	8172106	10976862	21837265	19369052	18604904	17248758	16123695	16229836	16416392	14823033	13456055
IIa	IV	GN1	4897946	4499989	4297404	3392804	3447820	3323114	3252787	2271150	2413722	2439004	2572262
IIa	IV	BT1	2781127	2675692	7238757	5675042	4967390	4613201	5347147	3253567	2039300	1677805	1586691
IIa	IV	TR3	5132676	3516779	3691963	3110526	3076432	2407530	1779807	842489	933455	622117	1139222
IIa	IV	GT1	809347	899300	4011118	969896	1039412	1056798	1973787	1820771	1142813	1230115	579149
IIa	IV	LL1	685063	540285	662902	264989	168268	189027	119561	44523	420653	765666	421776

The ranking of the gear groupings according to Annex IIa of the TAC and quota regulation in the North Sea, catching plaice in 2010 is BT2, TR1, TR2, BT1, GT1 and GN1 with 64%, 19%, 9%, 3%, 3% and 2% respectively according to catches. The ranking according to the landings is BT2, TR1, TR2, BT1, GN1, and GT1 with 54%, 27%, 10%, 5%, 3% and 1% respectively.

The ranking according to sole catches in 2010 is BT2, GT1, GN1 and TR2 with 86%, 5%, 5% and 4% respectively. The ranking according to sole landings in 2010 is BT2, GT1, GN1 and TR2 with 85%, 6%, 5% and 4% respectively.

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9.6. Request for a STECF opinion on the implementation of cod avoidance measures in accordance with article 13.2(c) of the cod plan

Background

Under article 13.2(c) of Council Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks, the Member States may allocate additional fishing effort to those effort groups subject to effort adjustments in which the fishing activity of one or more vessel(s) is conducted in accordance with a cod avoidance or discard reduction plan. The STECF should be requested to compare the reduction in cod mortality which would result from the application of cod avoidance or discard reduction plan (art. 13.2(c)) with the reduction it would have expected to occur as a result of the effort adjustment referred to in Article 12(4) of the cod plan.

In April 2010 the United Kingdom notified the Commission of fishing effort increases in 2010 as a result of expected low cod catches in accordance with article 13.2 (cod avoidance measures) of the cod plan, in particular in relation to point c) on cod avoidance or discard reduction plan. In April 2011 the United Kingdom reported to the Commission the amounts of additional effort used in 2010 within the foreseen cod avoidance measures undertaken that year.

In May 2011 the United Kingdom and Ireland notified the Commission of fishing effort increases in 2011 as a result of expected low cod catches in accordance with article 13.2 (cod avoidance measures) of the cod plan, in particular in relation to point c) on cod avoidance or discard reduction plan.

Terms of References

Based on the information provided by the United Kingdom justifying fishing effort increases for 2010 and 2011 and by Ireland substantiating effort increases foreseen in 2011 under the conditions laid down in article 13.2 of the cod plan (Council Regulation (EC) No 1342/2008), the STECF is requested to assess the effectiveness of the relevant cod avoidance measures undertaken. In carrying out its assessment, the STECF is requested to compare the reduction in cod mortality which results from the application of point c) of paragraph 2 (cod avoidance or discard reduction plan) of article 13.2 with the reduction it would have expected to occur as a result of the fishing effort adjustment referred to in article 12.4 of the cod plan. It is expected that the STECF advises the Commission on appropriate adjustments in effort that may be applied for the relevant areas and gear groupings as laid down in article 13.7 of the cod plan.

STECF comments

United Kingdom

UK has submitted two reports to the Commission on the effort increase under the conditions laid down in article 13.2 of the cod management plan. One reporting on the effort adjustments in the

period 1 February 2010 to 31 January 2011 (the period is referred to as 2010 in the following) and one notifying the Commissions on intended effort adjustments in the period 1 February 2011 to 31 January 2012 (the period is referred to as 2011 in the following). The reports provided by UK are broken down into Scotland, England and Wales, and Northern Ireland).

The effort adjustments are summarized in table 9.6.1.

Area	Gear	Maximum effort				Additional effort		Effort relative to baseline	
		Baseline	2009	2010	2011	2010	2011	2010	2011
North Sea	TR1	13,475,732	10,295,134	8,938,164	7,561,687	3,456,000	4,572,756	92%	90%
	TR2	11,395,568	8,165,956	7,409,969	6,268,834	3,285,841	4,112,783	94%	91%
West of Scotland	TR1	3,265,651	2,398,481	1,836,929	1,377,697	631,520	1,411,530	76%	85%
	TR2	5,218,696	3,899,614	2,972,845	2,972,845	951,125	990,948	75%	76%
Irish Sea	TR1	1,073,278	805,253	603,719	452,789	164,467	198,402	72%	61%
	TR2	3,439,370	2,602,936	1,934,646	1,450,985	989,360	1,988,385	85%	100%

Table 9.6.1. Annual maximum effort in kW days allocated to UK by gear category and management area as laid down in the annual TAC and quota regulation. The additional effort in 2010 and the intended additional effort in 2011. The total UK effort in 2010 and 2011 relative to the UK baseline.

The additional fishing effort by action and management area is shown in tables 2a,b and c.

North Sea	**TR1**		**TR2**		**TR1**		**TR2**	
Action	**Additional effort** **2010**	**Requested additional effort** **2011**	**Additional effort** **2010**	**Requested additional effort** **2011**	**Additional effort relative to baseline** **2010**	**Requested additional effort relative to baseline** **2011**	**Additional effort relative to baseline** **2010**	**Requested additional effort relative to baseline** **2011**
Article 13(2)(b) – under 5 per cent cod catch	286,292	567,510	1,116,554	2,031,334	2%	4%	10%	18%
Article 13(2)(c) – Real Time and seasonal closures	2,603,328	2,571,807	2,095,300	2,042,737	19%	19%	18%	18%
Article 13(2)(c) – Selective gears	471,372	355,023	73,987	38,712	3%	3%	1%	0%
Article 13(2) (c) – Catch Quota Management Scheme	24,095	998,416	0	0	0%	7%	0%	0%
Article 13(2)(c) – Deep Water	76,913	80,000	0	0	1%	1%	0%	0%
Total	**3,456,000**	**4,572,756**	**3,285,841**	**4,112,783**	**26%**	**34%**	**29%**	**36%**

Table 9.6.2a. Additional effort in the North Sea in kW days and relative to baseline by action, gear group and year.

West of Scotland	**TR1**	**TR2**	**TR1**	**TR2**

Year	Additional effort 2010	Requested additional effort 2011	Additional effort 2010	Requested additional effort 2011	Additional effort relative to baseline 2010	Requested additional effort relative to baseline 2011	Additional effort relative to baseline 2010	Requested additional effort relative to baseline 2011
Article 13(2)(b) – under 5 per cent cod catch	7,097	0	245,352	307,995	0%	0%	5%	6%
Article 13(2)(c) – Real Time and seasonal closures	621,873	611,530	699,432	682,953	19%	19%	13%	13%
Article 13(2)(c) – Selective gears	2,550	0	6,341	0	0%	0%	0%	0%
Article 13(2)(d) – West of French line	0	800,000	0	0	0%	24%	0%	0%
UK requested additional effort	**631,520**	**1,411,530**	**951,125**	**990,948**	19%	43%	18%	19%

Table 9.6.2b. Additional effort West of Scotland in kW days and relative to baseline by action, gear group and year.

Irish Sea	TR1		TR2		TR1		TR2	
Year	Additional effort 2010	Requested additional effort 2011	Additional effort 2010	Requested additional effort 2011	Additional effort relative to baseline 2010	Requested additional effort relative to baseline 2011	Additional effort relative to baseline 2010	Requested additional effort relative to baseline 2011
Article 13(2)(b) – under 5 per cent cod catch	22,054	51,316	624,446	1,653,350	2%	5%	18%	48%
Article 13(2)(c) – Real Time and seasonal closures	108,607	126,711	313,271	318,523	10%	12%	9%	9%
Article 13(2)(c) – Selective gears	35,806	20,375	51,643	16,512	3%	2%	2%	0%
UK requested additional effort	**164,467**	**198,402**	**989,360**	**1,988,385**	**15%**	**18%**	**29%**	**58%**

Table9.6.2c. Additional effort in Irish Sea in kW days and relative to baseline by action, gear group and year.

Evaluation of measures taken by UK:

Submission of additional material relevant for attempting to evaluate the performance of the actions was only made by Scotland. The material consisted of a summary of the measures in 2010 and an evaluation of the outcomes in 2010.

Noting that there is no requirement for National administrations to provide information in support an evaluation of the effects of Article 13(b) of the cod plan, there is a needfor such data in order to conduct an evaluation. In this regard STECF acknowledges the efforts of the Scottish

administration in providing such data. No information on catches by vessels operation under the two other Administrations was available to STECF[4].

a) Article 13(2)(b) – under 5% cod catch.

The conditions for being granted additional effort under Article 13(2)(b) differs between the three UK Administrations as shown in table 3.

	Condition
Scottish Government	Less than 2.5% cod in landings
Department of Agriculture and Rural Development NI	Less than 5% cod in landings
UK Government (England and Wales)	Less than 5% cod in landings

Table 9.6.3. Conditions under Article 13(2)(b) as implemented by UK Administrations

STECF notes that the maximum fishing effort may with reference to Article 13(2)(b) be increased if the catch composites of less than 5%. The conditions adopted by all three Administrations make reference to landings and not catches.

According to the additional observer –based material submitted by Scotland, 2 out of the 14 Article 13(2)(b) vessels sampled in 2009 had cod catches higher than 5% and an average catch of cod of 67kg per trip. In 2010, 4 out of 15 vessels exceeded the 5% limit and had an average catch of 301kg per trip.

STECF notes that the information available to STECF indicates that significant catches of cod may be taken by the vessels operating under Article 13(2)(b) questioning the effectiveness of this measure in limiting catches of cod.

b) Article 13(2)(c) – real time and seasonal closures

Two analyses of the effects of the real time closures were included in the additional material provided by Scotland. The results of the analyses indicate that the real time closures have been effective in the North Sea and catches of cod has been reduced compared to a status quo situation with no closures.

Analysis of landings before, during and after closures indicates that overall catches of cod in the North Sea by Scottish vessels were reduced in 2009 and 2010 by 707t and 1177t respectively due to the real time closures. The reductions in catches required to meet the anticipated effect of the closures were 1,318t in 2009 and 2400t in 2010. This indicates that the real time closures directly have delivered about half of the anticipated effect in the notification provided to the Commission by UK.

The analysis does not take into account of any intentional change in fishing behavior in an attempt to avoid fishing in relation to the recent distribution of real-time closures and hence, STECF was not able to quantify any such effects.

For West of Scotland, the results indicate that the real time closures have had a limited effect on the catches of cod.

4 Supporting documentation was received from UK (E+W) on the final day of the plenary meeting but arrived too late to be reviewed and included as part of the response to this item.

The information provided to STECF did not allow the committee to evaluate the possible effect of real time closures in the Irish Sea.

The Irish Sea cod closure was evaluated by STECF in 2007 as part of the Committees evaluation of the closed area schemes in place at that time. STECF was unable to determine the extent to which the Irish Sea cod closure since 2000 had reduced fishing mortality to a lower value than would otherwise have occurred, through protection of adult cod during spawning or influencing changes in fishing effort in the different fleets.

c) Article 13(2)(c) – selective gears

The measures introduce include a number of selective gears:

Scotland. North Sea and west of Scotland

TR1 gears:

- The 'Orkney Cod Avoidance trawl'
- Cod end of mesh size 130mm or greater.

TR2 gear:

- *Nephrops* Square Mesh Panel.

England and Wales. North Sea, West of Scotland and Irish Sea

TR1 gears:

- Eliminator trawl

TR2 gear:

- *Nephrops* Square Mesh Panel.

Northern Ireland

TR1 gears:

- Eliminator trawl
- Cod end of mesh size 130mm or greater.

TR2 gear:

- *Nephrops* Square Mesh Panel.

Limited information from Scotland indicates that between 2008 and 2010, cod catch rates have been reduced by between 25% and 40% for vessels fishing with the "130mm cod end mesh size cod end".

The observer data available to STECF indicates that between 2008 and 2010, the catch rates for cod have increased for vessels fishing with the "*Nephrops* square mesh panel" or the "Orkney cod avoidance" trawl.

Trials with the Eliminator trawl[5] have shown large reductions in cod catches compared to fishing with a standard demersal 80mm cod end trawl. However, no information was available on the catches of cod by vessels being using the Eliminator trawl.

d) *Article 13(2)(c) - Fishing exclusively beyond a specified 'deep water line' in Areas IIa and IVa*

5 Reville, A. (2007). First results from a pilot study 'North Sea fishing trials using the Eliminator trawl'. Cefas Technical report. www.cefas.co.uk

This measure involves that Scottish vessels fishing beyond a specified line in Areas IIa and IVa, which Marine Scotland Science judged to include areas of low cod abundance, have no reductions in the allocations of days at sea. STECF has no information to evaluate the catch of cod by vessels operating under this measure. STECF notes that the effort deployed under this measure is very limited.

STECF Conclusions

- The information made available to STECF was insufficient to conduct a full evaluation of the effects of the different measures implemented by UK.
- Article 13(2)(b) – under 5% cod catch. STECF considers it unlikely that the measure has resulted in significant reductions in catches of cod.
- Article 13(2)(c) – real time and seasonal closures. The information available to STECF indicates that the real time closures in the North Sea have delivered about half the anticipated reduction in catches of cod in 2009 and 2010. The real time closures west of Scotland are unlikely to have reduced cod catches significantly. No information was available on the possible effect in the Irish Sea.
- Article 13(2)(c) – selective gears. STECF considers it unlikely that the use of the Orkney Cod Avoidance trawl and the Nephrops square mesh panel have resulted in significant reductions in the catch of cod. Fishing with the 130mm cod end trawl and the eliminator trawl is likely to have resulted in a reduction in cod catches.
- The effects of the above measures are not additive and the cumulative effect of all of the above measures cannot be evaluated with the information available. However STECF notes that in the evaluation provided by Scotland, information on the cumulative catch was provided indicating that the total catches in 2009 and 2010 by Scottish vessels in the North Sea was in line with the predicted catches provided by ICES.

Ireland

The measures introduced by Ireland in 2011 and their justification can be summarised as follows:

Area Via

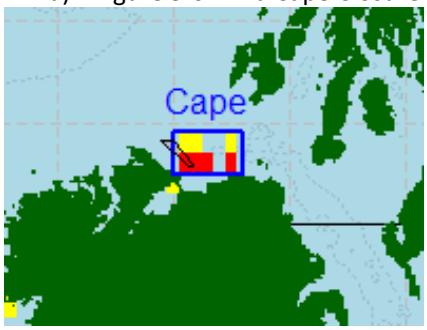
- Expansion of the existing Cape closure from 1 October 2011 to Jan 31 2012 and in area should result in a reduction in catches in the order of 24%. This will be a substantial contribution to the LTP objective of reducing fishing mortality by 25%.
- An analysis of fishing activity by vessels in the TR1 effort categories indicates that over 50% of the effort is west of the line in VIa. Almost all of the TR2 effort will be transferred to TR1 in 2011.
- The combined benefits of the above allow Ireland to recoup all of the 25% effort reduction in both TR1 and TR2 applied in 2011.

Area VIIa

- For VIIa to recoup kw.days the most technically tractable option is to introduce species selective gears in the *Nephrops* fisheries
- Use of either a Swedish grid or an inclined separator panel for 2011, on average, should result in a reduction in cod catches and fishing mortality to recoup 15% effort reduction in TR2 applied in 2011.

Assessment of the proposed measures.

a) Figure 9.6.1 VIa Cape Closure



The proposed closure (blue rectangle) is shown above and covers the periods 1 Feb 2011 to 31 Mar 2011 and 1 Oct 2011 to 31 Jan 2012. Red shading represents the areas where 25% of the cumulative cod catches for the rectangle were taken for the period 2003 to 2008. Combined yellow and red shading represents the areas where 50% of the cumulative cod catches for the rectangle were taken for the period 2003 to 2008.

The Irish authorities have estimated based on landings data from 2002 to 2008 that on average, 24% of the Irish cod landings from VIa have been taken in ICES rectangle 39E3 in the months that are now closed. They further state that this means that 17% of the fishing effort can be claimed back if the closure is implemented.

The Irish national closure was considered by STECF in April 2011. That evaluation focused on estimating whether reduced Irish landings between 2008 and 2009 (assumed to arise from the closure) contributed the forecast 17% reduction in Irish fishing mortality on cod predicted for the closure. STECF concluded that the reduction was *at least* 17%.

Further comments on the effect of the closure are provided in section 9.1.

b) Effort West of the line in VIa

VMS and landings data indicate that 53% of the Irish kWdays effort of TR1 takes place to the west of the western boundary of the cod plan area. The proportion in TR2 is less ~4% but this gear is no longer permitted in VIa to target finfish and it is expected that the majority of effort in TR2 was transferred into TR1 in 2010. It is assumed that the additional effort in the TR1 fleet arising from this change will be distributed in the same way as the existing TR1 fleet.

c) VIIa selective gears

The Irish authorities expect that two selective gears, the 'Swedish Grid' and the 'Inclined Separator Panel'.will be applied by a number of Nephrops vessels (TR2). If 16 vessels apply either of the gears in 2011 it is estimated that the reduction in the cod mortality is about 15%.

The description of the estimation method applied is unclear and STECF is not in the position to comment on the estimated reduction in cod mortality.

STECF comments on the information required to conduct an evaluation of cod avoidance measures

The above analyses illustrate the importance of detailed information being provided to allow STECF to evaluate cod avoidance measures in operation or proposed. STECF therefore reiterates its recommendation from 2010 that the following information should be considered as reporting requirements from MS to allow for future evaluations:

i. Spatial measures:
    a. Detailed information on spatial measures implemented (i.e. closed areas);
    b. Detailed VMS vessel tracks (particularly in relation to closures);
    c. Analysis of landings (or preferably catches) made by vessels affected by closures.

ii. Technical measures:
    a. Numbers of vessels utilizing different technical solutions;
    b. Detailed information on gear characteristics of these vessels (i.e. trawl design, swept area,
    c. sweeps size, selectivity, etc.);
    d. Estimates of catch and discards from vessels opting for gear measures before and after implementation;
    e. Estimates of catch and discards representative of groups of vessels (using more selective gears
    f. and not using these gears).

iii. Information on derogations:
    a. Numbers of vessels qualifying for derogations;
    b. Catch rates of cod by derogated vessels;
    c. Overall cod catch by derogated vessels.

iv. Overall fishery metrics:
    a. Raised estimates of discards for groups of vessels and the overall fleet – carefully describing the
    b. raising procedure used;
    c. Estimates of partial F (could be by specific vessels, groups of vessels or gear types employing certain measures).

9.7. Request for a STECF opinion on the fulfilment of the conditions for exclusion of fishing vessels flying the flag of United Kingdom and Spain, in accordance with Article 11(2) of the cod plan

Background

Article 11(2) of Council Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks (the cod plan) lays down the conditions under which the Council, acting on a Commission proposal and on the basis of the information provided by Member States and the STECF advice, may exclude certain groups of vessels from the effort regime.

In 2010 two groups of vessels from the United Kingdom were excluded from the cod plan fishing effort regime through Council Regulation (EC) No 754/2009 as amended by Council Regulation (EU) 53/2010.

In 2009 a group of vessels from Spain was excluded from the cod plan fishing effort regime (see Council Regulation (EC) No 754/2009). The STECF 36th plenary meeting (11-15 April 2011) concluded that the information provided by Spain, in relation to the activity in 2010 of the vessels excluded, indicates that this group of vessels generally fish outside the cod distribution area and have <1.5% cod in their catches. This conclusion seems to be mainly based on documented evidence such as logbooks. Despite the STECF favourable opinion on the exclusion of these vessels, the STECF also considers that the sampling intensity by on-board observers is rather low (one vessel, one month). In the context above it is appropriate to clarify whether the data presented by Spain is sufficiently representative of the catches of the group of vessels concerned to conclude that they caught less than 1.5% cod.

In accordance with Article 11(3) of the cod plan, Member States should submit an annual report showing that the conditions for exclusion remain fulfilled. This report should be drafted in accordance with the cod plan implementing rules (Commission Regulation (EU) No 237/2010).

Terms of References

1) Groups of vessels from the United Kingdom

Based on the information provided by the United Kingdom on the activity of the groups of vessels excluded from the cod plan in 2010, the STECF is requested to assess whether the conditions for exclusion remain fulfilled. In carrying out its assessment, the STECF is requested to:

a) advise whether the data on catches and landings submitted by the United Kingdom support the conclusion that during the 2010 fishing season the groups of vessels concerned have on average caught less than or equal to 1.5% of cod compared to the total catches;

b) if applicable, specify the reasons for non-fulfilment of the conditions for exclusion.

In carrying out its assessment, the STECF should consider the rules on vessel group reporting established in Article 4 of Commission Regulation (EU) No 237/2010 laying down detailed rules for the application of Council Regulation (EC) No 1342/2008. Data from samples should be statistically representative of the activity of the groups of vessels concerned in accordance with the requirements prescribed by table 3 of annex I of Commission Regulation (EU) No 237/2010. The STECF advice should be consistent with comparable advices.

2) Group of vessels from Spain

While the data submitted by Spain indicated cod catches of <1.5%, it is not clear from the April 2011 report whether the STECF considers that the data presented by the Member State is sufficiently representative of the catches of the group of vessels concerned to conclude that they caught <1.5% cod. The STECF is therefore requested to:

a) Clarify whether the data presented by Spain is sufficiently representative of the catches of the group of vessels concerned to conclude that they caught <1.5% cod in 2010.

b) Clarify whether the data presented by Spain combined with other relevant information (to be specified) on the activity of the group of vessels concerned supports the conclusion that these vessels caught <1.5% cod in 2010.

STECF response

1) Groups of vessels from the United Kingdom

STECF observations

STECF points out that in 2009, when the UK requested exemption for these two groups of vessels, PLEN-09-03 (https://stecf.jrc.ec.europa.eu/reports/plenary) advised that both groups of vessels had <1.5% of cod in their catches as judged from the observer data provided and that these low cod catches were a result of depletion decoupling.

In 2010, the two groups of vessels were excluded from the cod plan fishing effort regime through Council Regulation (EC) No 754/2009 as amended by Council Regulation (EU) 53/2010. Specifically, the excluded vessels belonged to the TR2 group and were exempted when fishing in the West of Scotland in the Minch and the Firth of Clyde (defined by ICES statistical rectangles 42E3, 42E4, 43E3, 43E4, 44E3, 44E4, 45E3 for the Minch, and 39E5 and 40E5 for the Firth of Clyde).

The Table 1 provided by the UK contains records for 52 vessels. For 10 of these, some records were given of fishing activity in areas c (Irish Sea) and bii (North Sea etc.), while STECF notes that exemption was not given for effort in areas other than the Minch and the Firth of Clyde, which are both in area d (West of Scotland). For those records that referred to fishing activity in area d (West of Scotland) the column specified in annex I of Commission Regulation (EU) No 237/2010 to contain information on Subarea were empty; therefore, STECF cannot judge which of the records pertain to fishing activities conducted in the Minch and the Firth of Clyde.

Nevertheless, of the 476 records (vessel-month combinations) in Table 1 pertaining to West of Scotland, only 3 reported cod landings; one vessel landed cod only in one month, contributing 0.7% of the total landings of that month, and another vessel landed cod in two different months, respectively contributing 1.4% and 1.3% of the total landings of that month; in Table 1 no discards are recorded.

The Table 3 provided by the UK contains observer information for 19 trips for 15 vessels which fished exclusively in the West of Scotland area. All 15 vessels were included Table 1 with fishing activity only in area d. One of them was the vessel that had cod landings in one month. According to Table 3, these trips represented between 0.5% and 3.5% of the total effort of each vessel (of the vessels of which 2 trips were sampled, the sampling covered up to 3.9% of the total vessel's effort). Among these 19 trips, cod catches ranged from 0 to 20 kg (all discarded), representing 0%-2% of the catches; on average, over these trips, cod catches represented 0.40% (sd = 0.59%).

STECF conclusions

STECF notes that the vessels for which information was provided seem to have had on average <1.5% of cod in their 2010 catches. However, it is not possible to deduce from the information provided which of the vessels belong to the group to which exemption was granted through Council

Regulation (EC) No 754/2009 as amended by Council Regulation (EU) 53/2010 when fishing in the Minch or the Firth of Clyde. It is also not possible to deduce which records pertain to fishing activity in the Minch and the Firth of Clyde. Finally, it is not possible to judge whether the observed trips took place in the Minch or the Firth of Clyde nor to what extent they were representative for the fishing activity in the Minch and the Firth of Clyde.

Therefore, STECF is not in the position to answer question a), i.e. to advise whether the data on catches and landings submitted by the UK support the conclusion that during the 2010 fishing season the groups of vessels concerned have on average caught less than or equal to 1.5% of cod compared to the total catches. This is because it is not clear which vessels belong to the group concerned. Moreover, it is not clear which of the reported fishing activity belongs to the exempted activity (in the Minch and the Firth of Clyde) and therefore it is also not clear whether the observed effort is representative. Question b) is not applicable.

To provide an informed response to the request the Member State shouldo re-submit Table 1, clarifying which fishing activity pertains to the exempted subareas the Minch and the Firth of Clyde (column 10 of Table 1 should contain this information), and Table 3, clarifying whether and to what extent the observed trips represent fishing activity in the Minch and the Firth of Clyde.

When re-submitting the Tables, the MS should realize that the fishing season concerned runs from 1 February 2010 to 31 January 2011.

2) Group of vessels from Spain

STECF notes that in the report of STECF PLEN 11-01 it is stated that 'the sampling was … narrow' and confirms that 'narrow' should be taken to mean 'not representative' (https://stecf.jrc.ec.europa.eu/reports/plenary).

However, the VMS data and depth information presented indicated that the vessels operated outside the normal distributional area of cod. Hence, whether the catch data presented are representative of the catches of the group of vessels concerned is irrelevant because the VMS and depth information provided are sufficient to demonstrate spatial decoupling from cod. This is entirely consistent with earlier STECF advice (PLEN 10-01, e.g. Table 6.10.2): namely that only if STECF is required to judge a case of depletion decoupling the MS needs to show that the catch of cod is <1.5% based on a statistical significance, while, on the other hand, if STECF is required to judge a case of spatial decoupling, evidence that the fleet concerned operates outside of the distribution area of cod may suffice.

In response to the specific points raised in the request STECF concludes the following:

a) Clarify whether the data presented by Spain is sufficiently representative of the catches of the group of vessels concerned to conclude that they caught <1.5% cod in 2010.

STECF concludes that the catch data presented by Spain is not representative of the catches of the group of vessels concerned. Nevertheless, the total set of data presented by Spain is sufficient to conclude that the vessels caught <1.5% cod in 2010.

b) Clarify whether the data presented by Spain combined with other relevant information (to be specified) on the activity of the group of vessels concerned supports the conclusion that these vessels caught <1.5% cod in 2010.

STECF concludes that the catch data presented by Spain combined with other relevant information (VMS data and depth information) on the activity of the group of vessels concerned, supports the conclusion that these vessels caught <1.5% cod in 2010.

Based on additional information on cod distribution since the first exemption was granted, STECF now considers that a spatial decoupling exemption can only be given for fisheries in water depths greater than 300m. Therefore, if vessels are considered to be fishing in any water depths shallower than 300mm, STECF will require representative sampling of catches at the required precision to show that catches are indeed below the 1.5% threshold.

STECF also recommends that information accompanying requests for exclusion from effort regime under Article 11(2) of Regulation are screened by DG MARE prior to submitting a request to STECF to avoid inappropriate use of scientific expertise.

9.8. Request for a STECF opinion on a request for exclusion of fishing vessels flying the flag of France from the cod plan effort regime, in accordance with Article 11(2) of Regulation (EC) No 1342/2008

Background

Article 11(2) of Council Regulation (EC) 1342/2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks lays down the conditions under which the Council, acting on a Commission proposal and on the basis of the information provided by Member States and the STECF advice, may exclude certain groups of vessels from the effort regime.

Following a number of requests by Member States to the European Commission, the STECF assessed in 2009 and 2010 the activity of groups of vessels against the criteria mentioned in Article 11(2) of the cod plan, in particular based on the concept of technical or biological decoupling. The Commission's approach to vessels' exclusions from the cod plan effort regime has taken into account the STECF's concept of technical and/or biological decoupling as well as vessels' group activities or characteristics that result in cod catch rates equal to or below 1,5% of the total catches for each group of vessels concerned, provided that:

a. the Member States provide appropriate information to the Commission and STECF in order to establish that the conditions are and remain fulfilled in accordance with the detailed rules adopted by the Commission and;

b. the Member States concerned put in place a monitoring system that provide representative catch data enabling the Commission to assess whether the fulfilment of the exclusion criteria at the group or vessel level continues to be met.

Member States requests for exclusion must follow the requirements prescribed by Commission Regulation (EU) No 237/2010 laying down detailed rules for the application of Council Regulation (EC) No 1342/2008.

Terms of References

Under the conditions laid down in Article 11(2) of Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks, the STECF is requested to evaluate the French request for exclusion from the cod plan effort regime of

i. a group of 8 trawlers (gear category TR1) targeting saithe in the North Sea,

ii. a group of 3 longliners (gear category LL) targeting hake in the West of Scotland, and

iii. a group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland.

Following the approach described in the background and taking into account the information and data provided by France to the European Commission, the STECF is requested to advice on the following:

1.To what extent does the data on catches and landings submitted by France support the conclusion that during the reference period for which the data have been collected, the vessel group has (annually on average) caught less than or equal to 1.5% of cod of its total catches?

2. In cases of scientific uncertainty with regard to question 1), please specify the information and data that have to be improved; in particular concerning the sampling strategy including sampling precision levels and intensities in relation to catch and discards data and, where relevant, the description of gear properties and its effect.

3. In cases of scientific uncertainty with regard to question 1), please specify whether the information presented gives indications that the non-fulfilment of the assessment criteria is due to a specific activity of the vessel group, e.g. when the group fishes in a particular area.

In carrying out its assessment, the STECF should consider the rules on vessel group reporting established in Article 3 of Commission Regulation (EU) No 237/2010 laying down detailed rules for the application of Council Regulation (EC) No 1342/2008.

The STECF advice should be consistent with comparable advices.

The STECF is requested to complete the table below summarising its findings in relation to the present request.

Table: Summary of STECF findings in relation to vessels groups requests for exclusion.

Country	Description of vessel group	Data submitted	STECF advice in July 2011
			[to include a statement on a favourable or negative

			opinion on the exclusion in question]

STECF response

The French submission to the Commission is a request for exemption from the effort regime for three groups of vessels: A first group of 8 trawlers (gear category TR1) targeting saithe in the North Sea, a second group of 3 longliners (gear category LL) targeting hake in the West of Scotland, and a third group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland.

Two supporting letters explaining the reasons for the request of exclusion (one for the gear categories TR1 and LL and the other for GN) have accompanied the data provided. This data consist of a complete Table 1 and Table 5 as requested by the Annex of the Commission Regulation (EU) No 237/2010 for the three groups of vessels and Table 3 as requested by the same annex for first the group of 8 trawlers (gear category TR1) targeting Saithe in the North Sea.

STECF was requested to advise on the following:

1. To what extent does the data on catches and landings submitted by France support the conclusion that during the reference period for which the data have been collected, the vessel group has (annually on average) caught less than or equal to 1.5% of cod of its total catches?

Group of 3 longliners (gear category LL) targeting hake in the West of Scotland
According to the data provided for the group of 3 longliners (gear category LL) targeting hake in the West of Scotland, the cod landings can be considered as zero. Nevertheless given that data on discards has not been provided STECF cannot provide any conclusion in terms of the total catches of cod.

Group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland
According to the data provided for the group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland the cod landings can be considered as zero. Nevertheless given that data on discards has not been provided STECF cannot provide any conclusion in terms of the total catches of cod.

Group of 8 trawlers (gear category TR1) targeting saithe in the North Sea.
According to the observer data provided for the years 2009 and 2010 for the group of 8 trawlers (gear category TR1) targeting Saithe in the North Sea, the cod catches in the observed trips were on average 1.46% in 2009 (SD 2.75) and 0.78% in 2010 (SD 0.97) of their total catches.
However, the observer data provided for this group display a high dispersion (SD 2.75 and 0.97 for years 2009 and 2010, respectively). Assuming a Log Logistic distribution of the catch percentages (which is the distribution that best fits with the data according to the Kolmogorov-Smirnov statistic), the probability that the catches represented by the samples have indeed <1.5% cod in the catch can be estimated. For the year 2009, the probability that the catches have a percentage cod higher than 1.5% is 0.37 (Figure 9.8.1) and for the year 2010, the probability that the catches have a percentage cod higher than 1.5% is 0.17 (Figure 9.8.2).

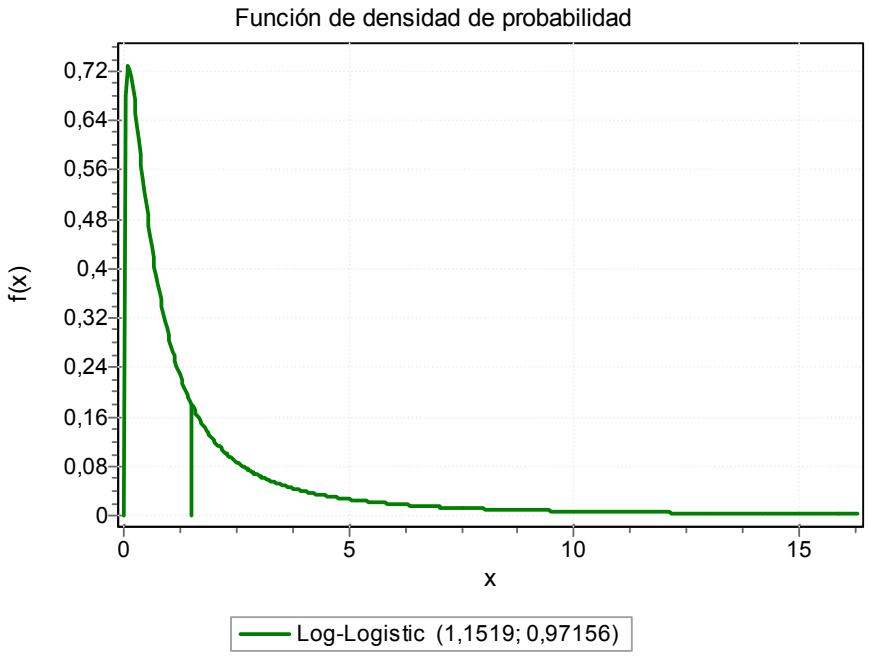


Figure 9.8.1: Probability density (f(x)) for the percentage of catches of cod (x) in the year 2009 for the group of 8 trawlers (gear category TR1) targeting saithe in the North Sea, given the distribution which best fits with the data (Log Logistic according to the Kolmogorov-Smirnov statistic).

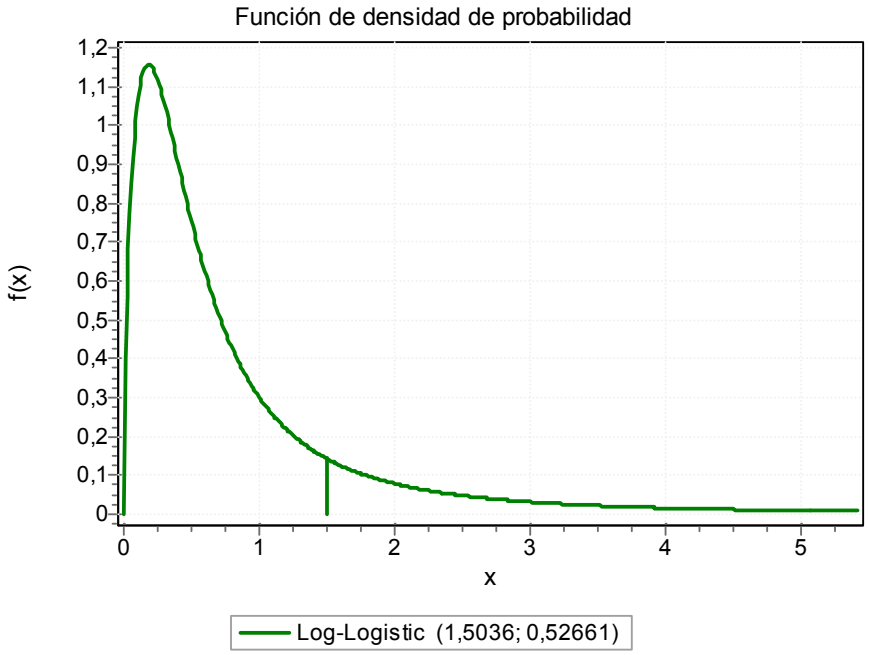


Figure 9.8.2: Probability density (f(x)) for the observed percentage of catches of cod (x) in the year 2010 for the group of 8 trawlers (gear category TR1) targeting saithe in the North Sea, given the distribution which best fits the data (Log-Logistic).

Therefore, considering the existing uncertainty, STECF cannot conclude that the true value of the annual average catch of cod for the group of 8 trawlers (gear category TR1) targeting Saithe in the North Sea is below 1.5%.

2. In cases of scientific uncertainty with regard to question 1), please specify the information and data that have to be improved; in particular concerning the sampling strategy including sampling precision levels and intensities in relation to catch and discards data and, where relevant, the description of gear properties and its effect.

For the group of 3 longliners (gear category LL) targeting hake in the West of Scotland the request is based on alleged technical decoupling (as stated by the MS) which has to be supported by additional scientific information. Information on the nature of the alleged technical decoupling should be provided e.g. VMS positional data and depth of fishing operations.

For the group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland given that the request is based on the 1.5% limit, observer data should be provided.
For the group of 8 trawlers (gear category TR1) targeting saithe in the North Sea a more intensive observer sampling will be required to obtain a more precise estimate of the average percentage of cod in their catches. The reason for that comes from the high dispersion (SD 0.97 in 2010 and 2.75 in 2009) found in the data provided.

3. In cases of scientific uncertainty with regard to question 1), please specify whether the information presented gives indications that the non-fulfillment of the assessment criteria is due to a specific activity of the vessel group, e.g. when the group fishes in a particular area.

For the group of 3 longliners (gear category LL) targeting hake in the West of Scotland additional information as indicated in question 2 should be sufficient to evaluate the request for exclusion from the cod plan for the groups of vessels considered.
For the group of 8 gillnetters (gear category GN) targeting hake in the West of Scotland given that the request is based on the 1.5% limit, the provision of observer data should be sufficient to evaluate the request for exclusion from the cod plan for the groups of vessels considered.

For the group of 8 trawlers (gear category TR1) targeting saithe in the North Sea a more intensive observer sampling scheme will be required in future, to obtain a more precise estimate of the average percentage of cod in the catches. Nevertheless, it is not clear whether an increased sampling intensity will lead to the conclusion that an exemption can be granted.

The STECF findings in relation to the requests to the Commission for exclusion from the cod plan effort regime in accordance with Article 11(2) of Regulation (EC) No 1342/2008 are summarized in Table 9.1.1.

Table 9.8.1 Summary of STECF findings in relation to vessels groups requests for exclusion from the cod plan effort regime in accordance with Article 11(2) of Regulation (EC) No 1342/2008.

Country	Description of vessel group	Data submitted	STECF advice in July 2011
FR	3 longliners (gear category LL) targeting hake in the West of Scotland.	Data in content and format as asked by the Annex 1 of Commission. Regulation (EU) No 237/2010.Including all the variables required in tables 1, and 5 of the	Data support the conclusion that the proportion of cod in the landings has been (annually on average) less than 1.5% of the total landings of all species by this vessel group. The request is based on a

		referred annex.	technical decoupling that has to be supported by additional scientific information.
FR	8 gillnetters (gear category GN) targeting hake in the West of Scotland.	Data in content and format as asked by the Annexes 1 of Commission Regulation (EU) No 237/2010. Including all the variables required in tables 1, and 5 of the referred annex,	Data support the conclusion that the proportion of cod in the landings has been (annually on average) less than 1.5% of the total landings of all species by this vessel group. Nevertheless, no observer data are provided regarding discards. Thus it is not possible to demonstrate that the proportion of cod in the catches is less than 1.5%.
FR	8 high-sea trawlers (gear category TR1) targeting Saithe in the North Sea	Data in content and format as asked by the Annex 1 of Commission Regulation (EU) No 237/2010. Including all the variables required in tables 1, and 5 of the referred annex, and observers data (table 3)	STECF concludes, based on the data provided, that the probability that the proportion of cod in the catches is (annually on average) more than 1.5% of the total catches of all species by this vessel group is 0.37 for 2009 and 0.17 for 2010. STECF notes that increasing observer sampling of this group of vessels will be required in order to estimate the average value of the percentage of cod catches more precisely. Nevertheless, due to the high probability of being above the 1.5% target in 2009 and 2010, additional cod-avoidance measures by the group of vessels considered will probably be required.

9.9. Request to the STECF to rank the effort groups under the cod plan fishing effort regime according to their contribution to cod catches in 2010

Background

Article 12 of Council Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks sets out the rules for adjusting each year the maximum allowable fishing effort.

In accordance with paragraph 4 of the aforementioned article 12, the annual adjustment should apply to the effort groups where the cumulative catch calculated according to paragraph 3(b) of the same article is equal to or exceeds 20%. It is therefore necessary to compile a list of the aggregated effort groups and their corresponding cod catches, including discards. This list should be arranged in ascending order of cod catch in each effort group.

Terms of References

The STECF is requested to provide the Commission with the absolute and percentage cumulative catch calculated in accordance with article 12.3 of the cod plan. The effort groups should be ranked according to their contribution to cod catches, including discards, in 2010.

STECF comments

The first meeting in 2011 of the STECF effort management group, STECF EWG 11-06, reviewed aggregated catch information (landings and discards) provided by member states in response to the 2011 datacall (February 2011). No data were received from Spain. Catch data from most other countries are considered to be final with only a limited number of updates expected; these are not thought to be significant. Overall the provisional data on quantities of cod caught are considered suitable for providing information on the ranking of effort groups according to the contribution to cod catches.

The STECF effort group has routinely provided information on ranking of gears in line with the TORs given to that study group. The group's report tables have previously contained rankings for both regulated and unregulated gears. This has the advantage of providing early indications of any emergent gears, not currently regulated, which nevertheless may be making an increasing contribution to cod mortality.

STECF is however asked here to provide rankings for regulated gears in line with paragraph 3 and 4 of the cod recovery plan regulations as set out below.

" 3. The effort groups for which an annual adjustment in the maximum allowable fishing effort shall be applied shall be decided on the following basis:
(a) the catches of cod taken by vessels in each of the effort groups shall be evaluated on the basis of data submitted by Member States in accordance with Articles 18, 19 and 20 of Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy (1);

(b) a list shall be compiled for each of the areas defined in Annex I to this Regulation of the aggregated effort groups and their corresponding cod catches, including discards. This list shall be arranged in ascending order of cod catch in each effort group;
(c) the cumulative catches of cod in the lists established according to point (b) shall be calculated in following way. For each aggregated effort group, the sum shall be calculated of the cod catch by that effort group and the cod catches made by all aggregated effort groups in the preceding entries in the list;
(d) the cumulative catches calculated according to point (c) shall be calculated as a percentage of the total cod catch by all aggregated effort groups in the same area.

4. For aggregated effort groups where the percentage cumulative catch calculated according to paragraph 3(b) is equal to or exceeds 20 %, annual adjustments shall apply to the effort groups concerned. The maximum allowable fishing effort of the groups concerned shall be calculated ....etc"

The summary of provisional data from the 2011 EWG 11-06 first meeting contains time series of ranked proportional cod catches by fishing gear type for the areas covered by the long term cod plan. The table below provides absolute catches in tonnes, percentage catches and cumulative percentage catches (in line with the regulation) for the Kattegat, North Sea, Irish Sea and West of Scotland for 2010. The tables show the gear types to which adjustments in effort apply (red) and gear types contributing less than 20% of catches (green).

Table 9.9.1 Gear types to which adjustments in effort apply (red) and gear types contributing less than 20% of catches (green). Note: Spanish data not available and not included.

3a Kattegat

Gear Group	2010		
	catch (t)	% catch	cum. %
TR2	201	93.056	100.001
GN1	10	4.63	6.945
TR1	4	1.852	2.315
GT1	1	0.463	0.463
LL1		0	0
TR3		0	0

3b North Sea

Gear Group	2010		
	catch (t)	% catch	cum. %
TR1	23780	62.592	100
TR2	7599	20.002	37.408
GN1	3385	8.91	17.406
BT2	2128	5.601	8.496
GT1	472	1.242	2.895
BT1	323	0.85	1.653
LL1	288	0.758	0.803
TR3	17	0.045	0.045

3c Irish Sea

Gear Group	2010		
	catch(t)	% catch	cum. %
TR2	478	55.006	100
TR1	241	27.733	44.994
GN1	78	8.976	17.261
BT2	70	8.055	8.285
GT1	2	0.23	0.23
LL1		0	0

3d West of Scotland

Gear Group	2010		
	catch(t)	% catch	cum. %
TR1	1226	98.002	100.001
TR2	23	1.839	1.999
GN1	2	0.16	0.16
LL1	0	0	0
BT2		0	0
BT1		0	0

STECF conclusions

STECF notes that based on the method set out in the Regulation under article 12 of the cod plan, the gears to which effort adjustments in 2012 apply are all trawl gears. The gears affected in each area are as follows: Kattegat = TR2; North Sea = TR1 and TR2; Irish Sea = TR1 and TR2 and West of Scotland = TR1.

9.10. Special request to STECF on Celtic Sea cod (Divisions VIIbc, VIIe-k, VIII, IX and X)

Background

In light of the advice issued by ICES regarding Cod in Divisions VIIbc, VIIe-k, VIII, IX and X the NWWRAC has requested the Commission to make a proposal for the amendment of the 2011 TAC for this stock. The RAC reads the advice as containing new information which was not available to ICES last year, at the time of formulating advice regarding the 2011 season.

Terms of Reference

STECF is requested to indicate, in case the Commission were to consider revising the TAC currently applicable to the cod stock in the Celtic Sea, what would be the appropriate revised TAC level for 2011 taking into account recent and expected discarding in 2011. To this end, STECF should consider the level of unavoidable cod catches expected during the remainder of the season (from 1 September 2011), and the objective of reducing the fishing mortality rate to the target MSY rate of 0.4. In respect of the latter, any revised TAC value should not be such that implementing the ICES MSY framework in 2012 would require a TAC cut.

STECF conclusions and recommendations

STECF notes that with the background of latest ICES advice that discards are not included in the ICES assessment for cod in divisions VIIe-k. In the absence estimates of the proportions of the catch discarded and landed, STECF has no basis to take into account recent and expected discarding in 2011.

A revised catch forecast assuming a fishing mortality of 0.4 in 2011 is given in Table 9.10.1. The predicted landings at F=0.4 for 2011 are 8,700 t compared to an agreed TAC of 4023 t. The average uptake of the cod TAC in divisions VIIe-k in the last 5 years at 1st September is 71%. Assuming a similar TAC uptake in 2011, the 2011 TAC could be raised by 29% of the difference between the new predicted landings (8,700 t) and the 2011 TAC (4,023 t). This equates to 1356 t, implying that a revised TAC of 5,379 t for 2011 could be proposed.

STECF considers that the proxy for F_{MSY} (F_{MAX}=0.4) proposed by ICES may not be appropriate. In the absence of an estimate of F_{MSY}, STECF recommends that $F_{0.1}$ (F=0.26) is a more appropriate proxy for F_{MSY} and should be used. F_{2010} is estimated to be 0.51. Hence applying the ICES transition scheme to reduce F towards $F_{0.1}$ (F=0.26) in 2012, gives rise to F_{2012}=0.41.

STECF advises that for 2012, management should aim to achieve F=0.41 (ICES transition scheme applied on a FMSY=0.26) on cod in Divisions VIIb,c,e–k, Subareas VIII, IX, X, and CECAF 34.1.1. VIIb,c. To predict the landings corresponding to fishing at F=0.41 in 2012 STECF has

assumed F_{SQ} (F=0.51) in 2011 in accordance with ICES advice. This predicted to result in landings of 10,200 t in 2012 (Table 9.10.2).

Table 9.10.1. Revised catch forecast for cod in Divisions VIIe-k assuming F2011 = 0.4

F(2011) = 0.4; SSB(2012) = 23.8 kt; R (2011) = GM (1971-2008) = 3022 (Thousands); landings (2011) = 8.7 kt

Rationale	Landings (2012)	Basis	F (2012)	SSB (2013)	%SSB change [1)]	% TAC change [2)]
MSY framework	7.8	STECF proposal F_{MSY}	0.26	28.3	19%	94%
MSY transition to Fmsy=0.26	11.4	(F_{2010}*0.6+FMSY*0.4)	0.41	23.8	0%	183%
Precautionary Approach	16.4	F_{pa} (Fsq*1.33)	0.68	17.7	-25%	308%
Zero catch	0	F=0	0.00	46.0	94%	-100%
Status quo	12.4	F_{sq} * 0.9	0.46	22.5	-5%	208%
	13.4	F_{sq}	0.51	21.3	-10%	233%
	14.4	F_{sq} * 1.1	0.56	20.1	-15%	258%
	3.420	TAC-15% (Fsq*0.24)	0.10	33.9	43%	-15%
	4.023	TAC (Fsq*0.27)	0.12	33.1	40%	0%
	4.626	TAC+15% (Fsq*0.31)	0.14	32.3	36%	15%

Weights in '000 tonnes.
[1)] SSB 2013 relative to SSB 2012.
[2)] Landings 2012 relative to TAC 2011.

Table 9.10.2. Catch forecast for cod in Divisions VIIe-k assuming F2011 = F_{sq} = 0.51

Outlook for 2012

Basis: **F(2011)** = F_{sq} = mean($F_{2008–2010}$) rescaled to F_{2010} = **0.51**; SSB(2012) = 21.2 kt; R (2011) = GM (1971–2008) = 3022 (thousands); landings (2011) = 10.5 kt.

Rationale	Landings (2012)	Basis	F (2012)	SSB (2013)	%SSB change [1)]	% TAC change [2)]
MSY framework	7.0	STECF proposed F_{MSY}	0.26	25.7	+21%	+75%
MSY transition to Fmsy=0.26	10.2	(F_{2010}*0.6+F_{MSY}*0.4)	0.41	21.7	+2%	+154%
Precautionary Approach	14.7	F_{pa} (F_{sq}*1.33)	0.68	16.1	-24%	+266%
Zero catch	0	F=0	0.00	34.6	+63%	-100%
Status quo	11.2	F_{sq} * 0.9	0.46	20.5	-3%	+177%
	12.1	F_{sq}	0.51	19.4	-9%	+200%
	12.9	F_{sq} * 1.1	0.56	18.3	-14%	+221%
	3.420	TAC-15% (F_{sq}*0.24)	0.12	30.3	+43%	-15%
	4.023	TAC (F_{sq}*0.27)	0.14	29.5	+39%	0%
	4.626	TAC+15% (F_{sq}*0.31)	0.16	28.7	+36%	+15%

Weights in '000 tonnes.
[1)] SSB 2013 relative to SSB 2012.
[2)] Landings 2012 relative to TAC 2011.

10. BALTIC SEA

10.1. Request for a STECF opinion on a quantitatively assessment the options for increased flexibility in the Baltic Sea fishing effort system under the cod plan and their possible impacts on the cod mortality in the Baltic Sea

Background

The Commission and the Council agreed during the October 2010 the Council meeting that it is appropriate to analyse by March 2011 and based on information to be provided by Member States concerned if flexibility for the national allocation of the days absent from port could be granted in line with the multi-annual plan for the cod stocks (Council Regulation (EC) No 1098/2007).

Without prejudice to Commission's right of initiative in legislative matters, the Council invites the Commission to propose a respective amendment of the fishing opportunities regulation as appropriate.

A workshop with Member States and stakeholders on this issue was held in February. In the workshop it was agreed that the issue should be further investigated through the annual Commission data call, to ascertain the actual impacts of the effort regime on different fleet segments. Further it was agreed to request the STECF to assess the identified options for introduction of the flexibility in the management of the fishing effort in the Baltic Sea, and to evaluate their respective sustainability impacts. It is not considered to modify the cod plan, but find solution for introduction of flexibility within existing legal framework.

For the purpose of this assessment, apart from the annual Commission data call, Member States were requested to provide additional data. Data received from the Member States were submitted to STECF EWG 11-06 and joint STECF/ICES working group EWG-11-07 for assessment.

Terms of References

In this context, STECF is requested:

- to quantitatively assess the data provided by MS and advice whether there is need for introduction of the flexibility in the management of the fishing effort under the BS cod plan.

If such need is confirmed then:

- to identify whether there is some particular pattern related to which it could be attributed, like fleet segment(s);

- to assess options proposed, but those options can be modified to accommodate particular suggestions. Additional options can be also proposed;

- for each option to evaluate respective sustainability impacts including impact on mortality and to identify most appropriate option;

- to explain pro and coins for each option proposed.

When assign the options comparison with the existing fishing effort management method should be also made.

STECF comments

An evaluation of the effort restrictions in relation to objectives of the Baltic cod management plan was conducted during the STECF-ICES meeting (i.e. Impact Assessment of Baltic cod multi-annual plans; STECF-11-07a). The relevant results and conclusions obtained from the analyses made in the report are reported here:

1) The current effort ceilings have been restrictive for only a smaller proportion of vessels (less than 10%, and in given case mainly for gillnetters)

2) Up to now effort control has probably not provided significant restraint in the fishery

3) The current effort restrictions are unlikely to prove a significant restraint in the next 1-2 years unless made more restrictive. However, it needs in this context to be noted that present fishing mortality for both the Eastern and Western Baltic cod stocks in 2011 is forecasted to be below F_{TARGET} resulting in either constant or increase in the effort ceilings (under the current targets) for 2012 for both fisheries as well as for the Eastern Baltic cod for 2011.

4) As there is a considerable level of surplus unutilized effort and capacity available, introduction of effort trade under the present regime with or without fleet based exchange rates also taking into account differences in fishing power would prolong the period over which effort restraint is largely ineffective (acknowledging that trade in effort would have a cost so would be intrinsically a restraint)

The report also concluded that the relationships between fishing mortality and effort deployed (for all regulated gears combined) are generally strong on an aggregated basis for Western and Eastern Baltic cod fisheries. However, the results also indicated that the correlation between effort and fishing mortality on a more disaggregated level on international métier and area basis varies considerably between different fisheries and metiers by area in the international Baltic cod fisheries. For some métiers there is a high correlation while the dependency is indicated to be low for other fisheries in both areas, and the slopes of the correlations also varies considerably indicating fishing power differences.

STECF conclusions and recommendations

STECF notes that for most of the fleets, effort control has not been effective at controlling fishing mortality on the Baltic Sea cod stocks (whereas effective enforcement of TACs appears to have been). However, STECF notes that for a limited part of the fleet (i.e. gillnetters) the effort is currently restrictive and limits fishing possibilities for these vessels. Therefore, STECF recommends that, provided the TACs are effective in limiting fishing mortality as intended, an increase in effort for vessel being restricted by effort limitation, can be granted without jeopardising the management plan and without resulting in an increase in F. The increase in effort could be either through a derogation on the current effort restrictions currently applied for vessel fishing with passive gear, via a transferring of effort from another vessel in the same fleet segment (i.e. passive gear) that does not fully utilise the effort or from a vessel in another segment of the fleet where the effort is not currently restrictive. Tyhe Commission provided several alternative options for the

effort adjustments (see below). STECF notes that the above recommendation corresponds to Option 2.

Possible options for effort adjustments proposed by the Commission

From the data available it appears that in average for most of Members States the effort actually used is less than half of the total number of days allowed. Furthermore it appears that contrary to management decisions to reduce the fishing effort in area A in 2009 and 2010, we can observe lower reduction as required or even increase of it in case of some MS.
The initial fishing effort has been set to high and it might absorb certain part of the management decisions. Therefore in order to introduce certain flexibility and still keep the system considerably simple and effective we would have to eliminate the unused effort currently available.

Option 1:

Maximum allowable fishing effort is calculated by means of a baseline established on basis of the actual fishing effort used during the reference period [2007 or 2008] (only one year for all MS) for each area, and the fleet segment. Following fleet segments would be crated:
1. vessels fishing with passive regulated gears and with overall length from 8 to 12m
2. vessels fishing with active regulated gears and with overall length from 8 to 12m
3. vessels fishing with passive regulated gears and with overall length from 12m
4. vessels fishing with active regulated gears and with overall length from 12m

Annual adjustments to the maximum allowable fishing effort in the first year would be applied as required by the Article 8 of the cod plan to the baseline effort, but for the subsequent years of application to the maximum allowable fishing effort of the previous year.

Maximum number of the days absent from port per MS, area, segment would be allocated to MS. It would be up to MS to allocate the fishing effort to its fleet within each segment. That would introduce the required flexibility since the fishing effort could be reallocated within each segment. No restrictions in maximum number of days per vessel. The text in the annex IIA would be replaced by this table. Possibility for transfers between fleet segments taking different catch-ability ratios within the same area could be considered.

Table10.1.1:

Geographical area:	Fleet segment:	DK	DE	EE	FI	LV	LT	PL	SW
Area A	8 <12m passive gears								
	8 <12m active gears								
	>12m passive gears								
	>12m active gears								

Geographical area:	Fleet segment:	DK	DE	EE	FI	LV	LT	PL	SW
Area B	8 <12m passive gears								
	8 <12m active gears								
	f/v >12m passive gears								
	f/v >12m active gears								

For this option the Commission would have to include legal reservation, because Art 8(4) states that:
"*…..the total number of days ...shall be reduced by 10% compared to the total number of days allowed in the current year"*

Therefore it might be legally difficult to establish the system which is based on effort used.

Option 2:

Member States would be allowed to increase maximum number of days absent from port for vessel fishing with [passive] gear by up to [10%] from initial allocation. The increase in the fishing effort should be accompanied by the reduction of the same amount of the fishing effort from active cod fishing vessel fishing with passive gears and holding special cod fishing permit. The amount of increase and deduction should be calculated on basis of GT days on 1:1 ratio. The increase in days absent from port can be granted to up to [5%] of the total number of active cod fishing vessels that are fishing with passive gear.

If this option would be applied then it would be added in the annex II as derogation from point 1 and 2.

Option 3:

Maximum allowable fishing effort would be calculated as a number of days multiplied by the number of currently active vessels. The amount of total kW-days would be considered as a basket that MS would be able allocate and redistribute to its fleet.

11. CONTACT DETAILS OF PARTICIPANTS

Name	Address	Tel.	Email
STECF members			
Abella, J. Alvaro(vice-chair)	ARPAT – AREA MARE Agenzia Regionale per la Protezione Ambientale della Toscana Articolazione Funzionale RIBM Risorse Ittiche e Biodiversità Marina Via Marradi 114, 57126 Livorno – Italia	Tel. diretto 0039-0586-263456 Fax. 0039-0586-263476	aa00477@mail.arpat.toscana.it
Andersen, Jesper Levring (vice-chair)	Institute of Food and Resource Economics (FOI) Fisheries Economics and Management Division University of Copenhagen Rolighedsvej 25 1958 Frederiksberg Denmark	Tel.dir.: +45 35 28 68 92	jla@foi.dk
Bailey, Nicholas (rapporteur)	Fisheries Research Services Marine Laboratory, P.O Box 101 375 Victoria Road, Torry Aberdeen AB11 9DB UK	Tel: +44 (0)1224 876544 Direct: +44 (0)1224 295398 Fax: +44 (0)1224 295511	baileyn@marlab.ac.uk n.bailey@marlab.ac.uk
Bertignac, Michel (rapporteur)	Laboratoire de Biologie Halieutique IFREMER Centre de Brest BP 70 - 29280 Plouzane, France	tel : +33 (0)2 98 22 45 25 - fax : +33 (0)2 98 22 46 53	michel.bertignac@ifremer.fr
Cardinale, Max (rapporteu)	Föreningsgatan 45, 330 Lysekil, Sweden	Tel: +46 523 18750	massimiliano.cardinale@slu.se
Casey, John (chair, rapporteur)	CEFAS Lowestoft Laboratory, Pakefield Road, Lowestoft Suffolk, UK NR33 0HT	Tel: +44 1502 52 42 51 Fax: +44 1502 52 45 11	john.casey@cefas.co.uk
Curtis, Hazel (rapporteur)	Sea Fish Industry Authority 18 Logie Mill Logie Green Road Edinburgh EH7 4HS	Tel: +44 (0)131 558 3331 Fax: +44 (0)131 558 1442	H_Curtis@seafish.co.uk
Daskalov, Georgi (rapporteur)	Laboratory of Marine Ecology, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences	Tel.: +359 52 646892	gmdaskalov@yahoo.co.uk

Name	Address	Tel.	Email
STECF members			
Döring, Ralf (rapporteur)	Johann Heinrich von Thünen Bundesforschungsinstitut, für Ländliche Räume, Wald und Fischerei, Institut für Seefischerei - AG Fischereiökonomie, Palmaille 9, D-22767 Hamburg, Germany	Tel.: 040 38905-185 Fax.: 040 38905-263	ralf.doering@vti.bund.de
Garcia Rodriguez, Mariano	Instituto Español de Oceanografía, Servicios Centrales, Corazón de María 8, 28002, Madrid, Spain		Mariano.Garcia@md.ieo.es
Gascuel, Didier (rapporteur)	AGROCAMPUS RENNES 65 Route de Saint Brieuc, bat.4 CS 84215, F-35042 RENNES Cedex	Tel:+33(0)2.23.48.55.34 Fax: +33(0)2.23.48.55.35	Didier.Gascuel@agrocampus-rennes.fr
Gustavsson, Tore Karl-Erik (rapporteur)	Fiskeriverket, National Board of Fisheries, Ekonomi och personalenheten, Box 423, 401 26, Göteborg, Sverige	Tel 00-46-31-74-30-300 Fax 00-46-31-74-30-444	tore_gustavsson@hotmail.com
Kirkegaard, Eskild (rapporteur)	DTU Aqua, National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund Slot, Jægersborg Allé 1, 2920 Charlottenlund, Denmark	Tel: +45 33 96 33 42 Fax: + 45 33 96 33 49	ek@aqua.dtu.dk
Kraak, Sarah (rapporteur)	University College Cork Based at: Marine Institute, Rinville, Oranmore, Co Galway, Ireland	Tel: +353 (0)91 387392 Fax +353 (0)91 387201	Sarah.kraak@marine.ie
Martin, Paloma (rapporteur)	CSIC Instituto de Ciencias del Mar Passeig Marítim, 37-49 08003 Barcelona Spain	Tel: 34.93.2309500 direct line : 34.93.2309552 Fax: 34.93.2309555	paloma@icm.csic.es
Malvarosa, Loretta	Irepa onlus via San Leonardo, trav. Migliaro Salerno - Italia	Tel: 0039 089 338978 Fax: 0039 089 330835	malvarosa@irepa.org
Motova, Arina	European Regional Policy Institute, S. Konarskio str. 49, Vilnius LT-03123. Lithuania	Tel.: +370 612 19519	arina.motova@erpi.lt
Nowakowski, Piotr	West Pomeranian University of Technology – Faculty of Food Science and Fisheries, Department of Fishing Technique, Szczecin		piotr.nowakowski@zut.edu.pl
Prelezzo, Raul (rapporteur)	AZTI - Tecnalia / Unidad de Investigación Marina Txatxarramendi Ugartea z/g 48395 Sukarrieta (Bizkaia), Spain	Tel: 94 6029400 Ext: 406- Fax: 94 6870006	rprellezo@suk.azti.es
Sala, Antonello	Fishing Technology Unit National Research Council (CNR) Institute of Marine Sciences (ISMAR) - Fisheries Section Largo Fiera della Pesca, 1 60125 Ancona - Italy	Tel: +39 071 2078841 Fax: +39 071 55313	a.sala@ismar.cnr.it

Name	Address	Tel.	Email
STECF members			
Somarakis, Stylianos (rapporteur)	Department of Biology University of Crete Vassilika Vouton P.O. Box 2208 71409 Heraklion Crete Greece	Tel.: +30 2610 394065, +30 6936566764	somarak@biology.uoc.gr
Stransky, Christoph (rapporteur)	Johann Heinrich von Thünen Institute [vTI] Federal Research Institute for Rural Areas, Forestry and Fisheries, Institute of Sea Fisheries, Palmaille 9, D-22767 Hamburg, Germany	Tel. +49 40 38905-228 Fax: +49 40 38905-263	christoph.stransky@vti.bund.de
Theret, Francois (rapporteur)	Ifremer – Laboratoire de technologie des pêches, Lorient		Francois.Theret@ifremer.fr
Ulrich, Clara (rapporteur)	DTU Aqua, National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund Slot, Jægersborg Allé 1, 2920 Charlottenlund, Denmark	Tel.: +45 35883395	clu@aqua.dtu.dk
Vanhee, Willy (rapporteur)	CLO-Sea Fisheries Department Ankerstraat, 1 8400 Oostende Belgium	Tel 00-32-59-34-22-55 Fax 00-32-59-33-06-29	willy.vanhee@ilvo.vlaanderen.be
External experts			
Connolly, Paul	Irish Marine Institute, Rinville, Oranmore, Galway, Ireland	+353 91 387 200	Paul.Connolly@marine.ie
García Isarch, Eva	Instituto Español de Oceanografía, Centro Oceanográfico de Cádiz, Puerto Pesquero, Muelle de Levante, s/n, 11006 Cádiz, Spain	Tel: 956 294189 Fax: 956 294232	eva.garcia@cd.ieo.es
Pascual Alayón, Pedro J.	Centro Oceanográfico de Canarias C/General Gutiérrez 38005 Santa Cruz de Tenerife CANARIAS-ESPAÑA	Tel: 922549400 Fax: 922549554	pedro.pascual@ca.ieo.es

European Commission			
Vasilaki, Marousa	Joint Research Centre JRC, STECF secretariat	Tel: +39 0332789658 Fax: +39 03329658	Marousa.vasilaki@ec.europa.eu Stecf-payments@jrc.ec.europa.eu
Doerner, Hendrik	Joint Research Centre JRC, STECF secretariat	Tel: +39 0332789343 Fax: +39 03329658	Hendrik.doerner@jrc.ec.europa.eu Stecf-secretariat@jrc.ec.europa.eu
López Benítez, Casto	DG MARE	Tel: 32 2 2996077	casto.lopez-benitez@ec.europa.eu
Daniel, Patrick	DG MARE	Tel.: +(32) 2 2955458	Patrick.Daniel@ec.europa.eu

Goldmanis Edgars	DG MARE	Tel.: +(32) 2 2964526	Edgars.GOLDMANIS@ec.europa.eu
JRC experts			
Anderson, J.	Joint Research Centre JRC	Tel: +39 033278 9256 Fax: +39 03329658	Joohn.anderson@jrc.ec.europa.eu
Rätz, Hans-Joachim	Joint Research Centre JRC	Tel: +39 0332786073 Fax: +39 03329658	hans-joachim.raetz@jrc.ec.europa.eu
Simmonds, E. John	Joint Research Centre JRC	Tel: +39 0332785311 Fax: +39 03329658	john.simmonds@jrc.ec.europa.eu

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JRC experts: Anderson, J., Rätz, H.-J., Simmonds, J.

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Abstract

The Scientific, Technical and Economic Committee for Fisheries hold its 37th plenary on 11-15 July 2011 in Copenhagen (Denmark). The terms of reference included both issues assessments of STECF Expert Working Group reports and additional requests submitted to the STECF by the Commission. Topics dealt with ranged from fisheries economics to management plan evaluation issues.

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