JRC Scientific and Technical Reports

38th PLENARY MEETING REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-11-03)

PLENARY MEETING, 7-11 November 2011, Brussels

Edited by John Casey & Hendrik Doerner

EUR 25033 EN - 2011

JRC EUROPEAN COMMISSION

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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.

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JRC67714
EUR 25033 EN
ISBN 978-92-79-22036-4
ISSN 1831-9424 (online)
ISSN 1018-5593 (print)
doi:10.2788/98352
Luxembourg: Publications Office of the European Union

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PLENARY MEETING

7-11 NOVEMBER 2011, BRUSSELS

1. INTRODUCTION

The STECF plenary took place at the Centre Borschette, Brussels (Belgium), from 7 to 11 November 2011. The Chairman of the STECF, Dr John Casey, opened the plenary session at 14:15h. He welcomed S. Schmidt as the new responsible person in DG MARE for the coordination of the STECF. 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 11 November.

2. LIST OF PARTICIPANTS

The meeting was attended by 29 members of the STECF, three external experts, seven DG-Maritime Affairs and Fisheries (MARE), four 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
Ulrich, Clara
Garcia Rodriguez, Mariano

3. INFORMATION TO THE PLENARY

3.1. STECF plenary - Overview on political agenda

S. Schmidt (DG MARE) informed the Committee that she acts as the overall responsible person in DG MARE for the coordination of the STECF.

S. Schmidt (DG MARE) provided a presentation to the STECF on topics and policies driving the Commission's agenda for the short and medium term. The presentation is available at the STECF PLEN-11-03 meeting's web site on https://stecf.jrc.ec.europa.eu/meetings/2011.

3.2. STECF plenary – STECF protocols, information from the secretariat

STECF protocols

H. Doerner (STECF secretariat) and John Casey (STECF chair) met in October to review and update the STECF rules of procedure and to produce a guidance document for STECF Expert Working Group (EWG) chairs. As specified in Art 11(1) of Commission Decision 2005/629/ EC of 31 August 2005 amended by Commission Decision 2010/74/EU the rules of procedure have been drawn up in consultation with the Commission's department in charge of the file (DG MARE A.2).

The STECF rules of procedure and guidelines for STECF Expert Working Group chairs will be made available at the STECF web site on https://stecf.jrc.ec.europa.eu.

STECF agenda

The secretariat reminded the Committee that the dates of two Expert Working Groups meetings have been changed. The STECF programme has been amended to include the following:

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)

Registration by potential participants and official invitations for these meeting have to be completed before 16 December 2011, as they are to be covered by the 2011 budget.

3.3. STECF plenary – Information from DG RTD

- P. Moguedet (DG R&I/E4) informed the STECF on developments in FP7 research and on DG RTD's discussions with ICES to cooperate on the application of research results. DG R&I/E4 aims to ensure that the research it funds is relevant and useful and that public money is well invested. The presentations are available at the STECF PLEN-11-03 meeting's web site on https://stecf.jrc.ec.europa.eu/meetings/2011 . One of DG R&I/E4 key priorities is to reinforce collaboration and synergies with international organizations such as ICES and possibly STECF to ensure the dissemination and transfer of knowledge into the scientific advisory process, and identification of future research needs. P. Moguedet asked for feedback from the STECF on each of three topics.

- 1) **Dissemination of Research results:** STECF suggested that DG R&I staff routinely attend plenary meeting to provide updates on development in EU-funder R&D and to discuss relevance to current policy initiatives. .The possibility to insert links to FP project dealing with fisheries and aquaculture issues into the STECF web site was also raised although the question whether the STECF website is an appropriate platform for dissemination activities of FP projects was also discussed. This will be pursued by the STECF Bureau at the earliest opportunity.
- 2) **Transfer of knowledge into STECF advice:** STECF considered that knowledge transfer to the STECF is already occurring since many STECF members and invited experts are members of consortia undertaking research under the EU framework programme. Experts participating in the EU Framework programme are also invited to STECF meetings to present the results of their research or are actively co-opted to assist the Committee with specific requests from the Commission. The point was raised that the STECF agenda is dictated by requests from the Commission and if such requests are dictated by short-term issues than in many cases the results from research activities may have no direct relevance regarding the ability of the Committee to respond to the request.
- **3) Identification of research needs:** STECF has in the past received several request to identify research and data needs by the Commission in general (see e.g. section 7.1 'Request for an STECF opinion on research needs in support of fisheries management' of the STECF PLEN-11-01 report, https://stecf.jrc.ec.europa.eu/reports/plenary) and in relation to policy initiatives through specific workshops convened under the STECF agenda and STECF has responded accordingly. One of the issues raised was the discrepancy between identified research requirements to provide the information to respond to anticipated questions arising from topical policy initiatives, only to discover that when the research has been completed the policy initiative it intended to address may have been superseded.

4. STECF INITIATIVES

4.1. STECF view on improvements to the scientific advisory process

This item was listed on the agenda at the initiative of the STECF Bureau. However, because of a lack of opportunity for discussion during the present plenary meeting, the discussion has been deferred to a future meeting.

5. ASSESSMENT OF STECF EWG REPORTS

5.1. STECF EWG 11-10 on the Review of national reports on balance between fishing capacities and fishing opportunities

STECF is requested to review the report of the **STECF-EWG-11-10** held from September 12 - 16, 2011 (Edinburgh, U.K.), evaluate the findings and make any appropriate comments and recommendations.

STECF agrees with the findings and conclusions in the EWG 11-10 report and wishes to highlight the following points:

STECF observations

STECF notes that the traffic light system for presenting a summary of balance indicators could be improved by including all of the recommended balance indicators or alternatives used.

STECF also notes that based on several assumptions and with some caveats, it is possible to approximately estimate the potential value of profits that are foregone as a result of operating a fleet that is over capacity relative to its fishing opportunities.

STECF conclusions

STECF concludes that the traffic light matrix for indicator values used in the report is a useful tool to assist MS in drawing overall conclusions about the balance between their fleets and their fishing opportunities. There are, however, no scientifically defined values for the thresholds between red (unsatisfactory), yellow (somewhat unsatisfactory) and green (satisfactory). There are elements of judgement and preference in setting threshold values. STECF can offer information about the implications of different values for balance indicators but considers that setting threshold values is the responsibility of policy makers.

STECF concludes that the threshold indicator values presented in the EWG 11-10 report Table 11.1 are considered to be a starting point generally applicable to many fisheries. STECF further concludes that MS should consider carefully the threshold or boundary values between green, yellow and red categorisations and should choose and explain the boundary values that are appropriate to their own fisheries. This practice will encourage MS to select and justify their choice of definitions of satisfactory and unsatisfactory indicator values.

STECF suggests that in the absence of an analytical age-based assessment, MS use the results from Stock Production Models or Biomass Dynamics models to estimate a B1 indicator for stocks**.**

STECF concludes that when balance indicators generate a mix of green, yellow and red results in the traffic light overview, MS should answer the questions proposed in the EWG 11-10 report (see below, with wording slightly revised compared to the EWG report) about the situation of their fleets (or fleet segments) and stocks, to assist them in drawing overall conclusions on balance.

1) Is it possible to catch the available fishing opportunities with a smaller fleet?
2) Would a smaller fleet have improved economic performance?
3) Are fishing mortality rates too high in relation to target mortality?
4) Are catch rates too high in relation to biomass of the stock/species compared to the agreed fisheries management target (MSY)?
5) What does CPUE suggest about stock abundance relative to abundance expected at MSY exploitation rates?
6) Is fishing activity delivering economic and social benefits, without dependence on public financial support?
7) Is the economic performance of the fleet robust to withstand impacts of cost fluctuations e.g. high fuel prices?
8) Is the fleet sufficiently financially robust to withstand short term cuts in fishing opportunity, in line with scientific advice?

STECF concludes that balance or imbalance itself cannot be measured or given a quantitative value. Therefore, while qualitative, verbal assessments of the degree of balance or imbalance are useful (when based on evidence) it is not feasible to give a quantitative assessment of balance (or imbalance) between fleet capacity and fishing opportunity.

STECF concludes that quota uptake rates should not be used as indicators of balance between fleet capacity and fishing opportunity as it not an appropriate indicator because these rates could in many cases give a misleading impression of balance.

STECF concludes that estimation of profits foregone in the past or hypothetically in the future, as a result of operating an over capacity fleet, is not equivalent to an estimate of additional profits that could be realised as a result of reducing fleet capacity.

STECF concludes that MS consider the benefits of estimating the potential profit foregone as a result of fleet over capacity in their own country. This would inform of the potential implications of operating different sizes of fleet. Suitable methods to estimate profit foregone are proposed in the report of EWG 11-10.

STECF recommendations

Drawing on the findings and conclusions of the STECF EWG 11-10 on the Review of national reports on balance between fishing capacities and fishing opportunities and following further discussion, STECF recommends the following:

1. An expert workshop should be held to evaluate fully the applicability of some specific methods for estimating biological balance indicators and for providing annual stock advice on data poor stocks. This is so that balance can be assessed in more of the cases where there is not a complete age-based stock assessment. Such a workshop should be given the task of providing stock advice and balance indicators for a specific list of stocks of interest in order to focus the work on a number of practical applications. It will be necessary for experts attending this workshop to have with them the data and analyses required to test the possibilities rather than just discuss applicability in theory.

2. There is a need to issue updated Guidelines to MS on the balance indicators to be reported in MS Annual Reports. The updated Guidelines should include some worked examples of alternative biological indicators of balance. STECF recommends that the Commission ensures that updated Guidelines are completed, and that they take into account proposed text and recommendations in the reports of SGBRE 10-01 and EWG 11-10 and the advice of STECF PLEN 10-03.

5.2. STECF- EWG 11-11 on the Evaluation of fishing effort management in EU waters – part2

STECF is requested to review the reports of the **STECF-EWG-11-11** Expert Working Group of September 26 - 30, 2011 (Cadiz, Spain) meeting, evaluate the findings and make any appropriate comments and recommendations.

When reviewing this STECF EWG reports, the STECF is asked to discuss a possible endorsement of correction factors established by the STECF EWG by taking into account evaluations of Catch per Unit of Effort, what would allow the Commission properly implementing several provisions laid down in the Cod plan adopted through R(EC) No 1342/2008.

STECF observations

General observations

The STECF expert working group on effort management EWG -11-06 met in Galway in June 2011 and in Cadiz in September 2011. The TOR for the meetings included conducting effort and catch reviews for the Baltic, Annex II A, B and C stocks, Celtic Sea, Bay of Biscay and Deep Sea/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.

STECF notes that the procedures for automatic and manual checks introduced by the JRC have provided the group with more time to address the different ToRs.

Specific observations

Annex IIA of Council Reg.s 40/2009 in the context of the cod recovery plan (Regulation 1342/2008)

In the Kattegat, the fishery is dominated by TR2 gears and the contribution to the overall effort by other fleets not regulated by the cod plan has declined. However, catches of cod, sole and plaice by under 10m vessels, which are also unregulated, has been increasing.

STECF notes that interpretation of trends in the North Sea area is not straightforward because some gear groups participate in a variety of different fisheries. Unregulated gears and under 10m vessels take relatively small quantities of cod, sole and plaice.

STECF notes that the principle gears operating in the Irish Sea are various types of trawl (particularly TR2) and that effort data is reasonably complete. Unregulated gears have increased in recent years (although catches by these gears are small). Discard data are rather incomplete for this area and as a consequence, rankings of gears are based on landings only.

STECF notes that the fishery in the West of Scotland is mainly by otter trawls (TR1 offshore and TR2 closer inshore). Total effort and trawl effort have declined markedly but catches of cod remain high and discarding is a problem. Unregulated gears represent a comparatively high proportion of effort but catches of cod, sole and plaice by such gears are low.

The cumulative percentage catches for the Kattegat, North Sea and West of Scotland by gear group are given in Table 5.2.1together the gear types to which adjustments in effort apply (red) and those contributing less than 20% of catches (green).

Table 5.2.1 Cumulative percentage cod catches for the Kattegat, North Sea, Irish Sea and West of Scotland and the gear types to which adjustments in effort apply (red) and gear types contributing less than 20% of catches (green). Note that the rankings for the Irish Sea are based only on landings data.

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	23787	62.53483	100
TR2	7703	20.2508	37.46517
GN1	3384	8.896367	17.21436
BT2	2127	5.591777	8.317998
GT1	409	1.075241	2.726221
BT1	323	0.849151	1.650981
LL1	287	0.754509	0.80183
TR3	18	0.047321	0.047321

3c Irish Sea

3dWest of Scotland

Gear Group	2010		
	land(t)	% land	cum. %
TR1	241	42.206655	100
TR2	210	36.777583	57.79335
GN1	78	13.660245	21.01576
BT2	40	7.0052539	7.355517
GT1	2	0.3502627	0.350263
LL1	0	0	0

Gear Group	2010		
	catch(t)	% catch	cum. %
TR1	1227	97.92498	100
TR2	23	1.835595	2.07502
GN1	3	0.239425	0.239425
LL1	0	0	0
BT2		0	0
BT1		0	0

Table 5.2.2 provides results for annual ratios of cod landings by fisheries with quantitative discard information versus total cod landings by these fisheries. Judging the ratio value that constitutes 'adequate' sampling is somewhat subjective. Here, a value of 0.1 or greater in any of the last three years 2008 -2010 is considered reasonable, while a value between 0 and 0.1 provides some information but is less than ideal. No sampling at all delivers a zero value and is inadequate. Consistent with the insufficient number of fisheries with respective discard estimates, the immediate conclusion is that the ratio is very low for some of the passive gears in all four management areas 3a-d. STECF notes, however, that discard information for the major regulated gear group TR2 in area 3a (Kattegat) cover almost all landings reported.

Table 5.2.2. Ratios of landings of discard sampled gears to total landings for gears in regulated areas 3a to 3d

ANNEX	REG AREA COD	REG GEAR COD	SPECIES	2003	2004	2005	2006	2007	2008	2009	2010
IIa	3a	GN1	COD								0.01
IIa	3a	GT1	COD								0.52
IIa	3a	none	COD								1
IIa	3a	OTTER	COD								0.95
IIa	3a	POTS	COD		0			0	0		1
IIa	3a	TR1	COD	0.43	0.38	0.3	0.35	0.38	0.21	0.05	0.22
IIa	3a	TR2	COD	0.77	0.9	0.99	0.99	1	0.97	0.97	0.91
IIa	3b	BT1	COD	0.01			0.83		0.87		
IIa	3b	BT2	COD	0	0.19	0.22	0.81	0.92	0.81	0.24	0.93
IIa	3b	DEM_SEINE	COD	0	1	1		1	0		
IIa	3b	GN1	COD	0.01	0	0.01			0	0	0.04
IIa	3b	GT1	COD					0	0	0	0.04
IIa	3b	none	COD								0.81
IIa	3b	OTTER	COD	0	0	0.3	0	0.02	0.39	0.54	0.65
IIa	3b	PEL_SEINE	COD	0	1	1	1	0			1
IIa	3b	POTS	COD								0.11
IIa	3b	TR1	COD	0.87	0.83	0.77	0.68	0.78	0.75	0.74	0.81
IIa	3b	TR2	COD	0.54	0.6	0.65	0.65	0.51	0.54	0.48	0.51
IIa	3b	TR3	COD		0.04	0					0
IIa	3c	BT2	COD			0.02		0.51	0.56	0.8	0.66
IIa	3c	OTTER	COD		0.34	0		0	0		0
IIa	3c	POTS	COD		0.43						
IIa	3c	TR1	COD	0.05	0.14	0.01	0	0.01			
IIa	3c	TR2	COD	0.01	0.13	0.28	0.13	0.07	0.1	0	0.29
IIa	3d	DEM_SEINE	COD	1	0	0	0	0	0	0	0
IIa	3d	OTTER	COD	0.41							0
IIa	3d	TR1	COD	0.72	0.7	0.69	0.71	0.66	0.6	0.48	0.78
IIa	3d	TR2	COD	0.87	0.76	0.78	0.56	0.47	0.66	0.67	0.02

Table 5.2.3 presents the gear group specific conversion factors for the implementation of the exchange of maximum allowable fishing effort across groups of effort regulated gears as estimated in accordance with Article 17 of Council Reg. (EC) No 1342/2008. Individual tables cover areas 3a to 3d. The conversion factors are based on CPUE as estimated by

STECF (EWG 11-11) and their representativeness is indicated by a traffic light approach using the criteria outlined above as boundaries between the three colours STECF notes that EWG 11-11 has used a pragmatic approach for judging the quality of the correction factors calculated as defined by the Commission Regulation (EU) No 237/2010 article 8(b). It also notes how a further and more scientifically based approach for dealing with these correction factors is currently under development.

Table 5.2.3. Conversion factors for exchange of effort between gears in areas 3a to 3d. Green cells provide reasonably reliable conversions, yellow are fairly reliable but red are unreliable (no discard data collected).

3a Kattegat

	donor gear	receiving gear					
		GN1	GT1	LL1	TR1	TR2	TR3
3a	GN1		1	0.321	1	1	1
3a	GT1	0.189		0.06	0.202	0.33	1
3a	LL1	1	1		1	1	1
3a	TR1	0.931	1	0.299		1	1
3a	TR2	0.571	1	0.183	0.613		1
3a	TR3	0.137	0.727	0.044	0.147	0.24	

3b North Sea Skaggerak

	donor gear	receiving gear							
		BT1	BT2	GN1	GT1	LL1	TR1	TR2	TR3
3b	BT1		1	0.21	1	0.67	0.18	0.725	1
3b	BT2	0.359		0.075	0.588	0.241	0.064	0.26	1
3b	GN1	1	1		1	1	0.855	1	1
3b	GT1	0.61	1	0.128		0.409	0.11	0.442	1
3b	LL1	1	1	0.313	1		0.268	1	1
3b	TR1	1	1	1	1	1		1	1
3b	TR2	1	1	0.29	1	0.924	0.248		1
3b	TR3	0.133	0.371	0.028	0.218	0.089	0.024	0.097	

3c Irish Sea

	donor gear	receiving gear					
		BT2	GN1	GT1	LL1	TR1	TR2
3c	BT2		0.009	0.091	0.014	0.072	0.636
3c	GN1	1		1	1	1	1
3c	GT1	1	0.104		0.15	0.795	1
3c	LL1	1	0.692	1		1	1
3c	TR1	1	0.13	1	0.188		1
3c	TR2	1	0.015	0.143	0.021	0.113	

3d West of Scotland

	donor gear	receiving gear					
		BT1	BT2	GN1	LL1	TR1	TR2
3d	BT1		1	0.009	1	0.001	0.013
3d	BT2	1		0.009	1	0.001	0.013
3d	GN1	1	1		1	0.065	1
3d	LL1	1	1	0.009		0.001	0.013
3d	TR1	1	1	1	1		1
3d	TR2	1	1	0.727	1	0.047	

Annex IIB of Council Reg. 40/2009 in the context of the recovery plan for Southern hake and Nephrops (Regulation 2166/2005)

STECF considers that given the lack of new data from a key player in this area (Spain), it is not possible to say anything more than was said in the STECF/SGMOS-10-05 report in 2010 (https://stecf.jrc.ec.europa.eu/reports/effort).

Annex IIC of Council Reg. 40/2009 in the context of the recovery of Western Channel sole (proposal COM (2003) 819 final)

STECF notes the significant improvement in the provision of data from Member States and the requested fleet specific effort data is now regarded as complete. Lack of complete discard data (although improving) prevents precise review of the effects of the defined derogations.
STECF notes that there is little indication of effort reductions and effort for unregulated gears remains relatively high. It also notes that un-regulated effort (in days at sea) by the otter trawl fleet accounts for about 85% of the effort and contributes significantly to the estimates of landings in weight of cod (91% in 2010), plaice (34%) and sole (about 33 The LPUE for cod (g kwday^{-1}) from unregulated gears exceeds the LPUE of the regulated gears.

Review of Celtic Sea effort and catches

STECF notes that revised data was provided only by, France and that most of the findings and conclusions remain broadly similar to previous years with an overall reduction in effort in the area.

Review of Bay of Biscay Sea effort and catches

STECF notes that for 2010 it was possible for the first time to provide information on both the regulated and unregulated parts of the fleet. STECF also notes the general rise in fishing effort in recent years, particularly by trawlers.

Specific comments to the Baltic Sea

STECF notes that even if further progress has been made, the information is still incomplete from a number of nations. In particular it is observed that only limited data were provided for discards and landings for most species and that the data presented in the report only relate to cod).

STECF notes how overall effort in the Baltic has reduced substantially.

STECF notes that due to incomplete information on special conditions, it is not possible to quantify the extent to which the BACOMA trawl has been adopted.

In general, the overall available number of fishing days does not appear to have been restrictive in either of the main areas of the cod fishery. Deploted effort in days was generally well below the days available to all fleets.

Deep Sea fisheries

STECF notes that the TORs were only partially addressed due to time constraints.

Effort in a number of gears (particularly otter trawls) and countries has declined in recent years. Nevertheless increases in the effort of long liners have occurred in a number of areas.

STECF notes that there is a reduction in the landings of a number of species across the range of areas reported with the exception of landings of certain deep water sharks in the more southerly ICES areas.

The group was also requested to discuss whether additional data on fishing depth and VMS position could improve the analysis and interpretation of deep sea fisheries, and how these data could be called from MS, processed and presented. STECF notes that additional data on fishing depth and VMS position could be useful to the deepwater data analysis and it would be highly valuable in improving the analysis and interpretation of deep sea fisheries through the identification of individual fisheries at a fine scale.

Western Waters

STECF notes that there were difficulties in preparing landings data and summaries for some Member States most notably Portugal, France and Spain are confusing. Since these MSs are key operators in the western waters overall effort figures remain unreliable.

STECF Conclusions and Recommendations

General
STECF endorses the main findings and conclusions of the reports of the EWG 11-11 and provides the following specific recommendations and conclusions:

Annex IIA of Council Reg.s 40/2009 in the context of the cod recovery plan (Regulation 1342/2008)

STECF concludes that based on the method set out in the Regulation under article 12 of the cod plan, the gears to which effort adjustments in 2011 apply are as follows: Kattegat = TR2; North Sea = TR1 and TR2; Irish Sea = TR1, TR2 and GN1 and West of Scotland = TR1.

STECF concludes that although the ratio of landings with quantitative discard estimates in area 3b of gear groups BT2, TR1 and TR2 are variable, they appear to be sufficiently high and that the raising procedure applied to estimate the overall discards shall result in representative CPUE values. Coverage of submitted discard estimates in area 3c is very limited for some gears. In area 3d, STECF concludes that the ratio between landings with discards and the total

landings for TR1 and TR2 is high enough and therefore the raising procedure applied to estimate the overall discards is appropriate to estimate representative CPUE.
STECF considers the conversion factors between donor and receiving vessels as sufficiently representative when highlighted green (good) and yellow (fair) (Table 5.2.3). STECF considers the respective conversion factors unrepresentative if highlighted in red and therefore advises that such factors are not reliable and should not be applied for effort transfers between regulated gears.

STECF concludes that the use of conversion factors highlighted in green and yellow is a pragmatic working arrangement to cope the issue of effort transfer across gear groups with different cpues. It also concludes that the traffic light approach proposed for the correction factors depends on setting boundaries appropriate to different levels of confidence in the underlying data. STECF also proposes the development of a further and more scientifically based approach for dealing with these correction factors and notes that this will be addressed by a future STECF EWG dealing with fishing effort conversions factors.

Annex IIB of Council Reg. 40/2009 in the context of the recovery plan for Southern hake and Nephrops (Regulation 2166/2005)

STECF recommends that given the lack of new data from a key player in this area (Spain) the data are not representative of the true catches and effort from the area and should be interpreted with caution.

Annex IIC of Council Reg. 40/2009 in the context of the recovery of Western Channel sole (proposal COM (2003) 819 final)

Given that un-regulated effort (in days at sea) by the otter trawl fleet accounts for about 85% of the total demersal effort and accounts for about one third of the catches of sole, STECF suggests that consideration be given to controlling otter trawl effort together with beam trawl effort in an attempt tocontrol fishing mortality on sole and other species.

Review of Celtic Sea effort and catches

STECF notes that before providing advice on the merits of only including Divisions VIIfg in any future cod management plan in the Celtic Sea area, additional information (such as information on spawning or nursery grounds) in areas outside VIIfg is required in order to judge whether there is a need for the plan to cover other areas also.

Baltic Sea

Given the limited data on discards, estimates of catch and CPUE are not reliable and should be interpreted with caution. Furthermore, management decisions based on such estimates may give rise to unintended outcomes.

Western Waters

Given the poor quality and misleading effort information provided by some Member States , STECF considers that the fishery-dependent information is unreliable and not representative of the fisheries in the the area and should not be used as a basis for management decisions.

5.3. STECF- EWG 11-12 on the Assessment of Mediterranean Stocks Part II

STECF is requested to review the report of the STECF-EWG-11-12 Working Group of September 26 – 30, 2011 (Larnaca, Cyprus) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF observations

STECF notes that all ToRs were addressed. The major ToRs (A-E) were addressed through the assessments of 25 Mediterranean exploited stocks and fisheries, as supported by data obtained through the 2011 DCF data call for the Mediterranean and the Black Sea. Exploitation status for all stocks that were assessed was evaluated against the proposed F_{MSY}. The assessments and management advice provided in the present report are limited to the Geographical Sub-areas (GSAs) off Spain, Italy, Malta and Cyprus; no experts from France, Slovenia and Greece attended the meeting.

STECF also notes that EWG 11-12 devoted considerable time at the meeting to evaluate the quality of the data submitted by Member States in response to the DCF Mediterranean data call in 2011 (ToR F). The STECF-EWG-11-12 Working Group Report contains findings for further consideration by DG Mare.

The EWG 11-12 updated the discussion on the evaluation of mixed fisheries frameworks and computer software to deliver mixed fisheries management advice under various scenarios. As many of the Mediterranean fisheries are indeed classified as mixed fisheries, this specific issue is considered very important and shall be further elaborated during future meetings.

Further development and testing of R scripts to facilitate the consistent analysis of MEDITS and other CPUE data series was accomplished. ToR L covering all other business was dedicated to the evaluation of the influence of sea-bottom temperature on trawl swept-area estimations and to improvement of fishing effort descriptors. The EWG also focused on a detailed explanation of the technical meaning and correlation of mesh size opening and stretched mesh size and among different ways of expressing the twine thickness. A preliminary evaluation of the Maltese fisheries management plans was also undertaken and an attempt was made to replicate economic analysis as regularly performed at MS level in the annual economic report (AER 2010), but at a finer regional (GFCM SA) and fisheries' specific disaggregation level.

STECF conclusions

Ofthe 24 stocks assessed by the EWG, 21 were classified as being subject to overfishing, while only 3 stocks were found sustainably fished in relation to the proposed management reference points consistent with high long term yields (F_{MSY}). The assessment of one of the stocks was inconclusive due to data deficiencies.

STECF draws the following conclusions based on the work of the EWG110-12.

- two stocks in GSA 01, European hake (*Merluccius merluccius*) and red mullet (*Mullus barbatus*) are subject to overfishing.

- three stocks in GSA 06, European hake (*Merluccius merluccius*), red mullet (*Mullus barbatus*) and pink shrimp (*Parapaeneus longirostris*) are subject to overfishing

- stocks in GSA 09 differ in their exploitation status. Ten stocks, European hake (*Merluccius merluccius*), blue and red shrimp (*Aristeus antennatus*), giant red shrimp (*Aristaeomorpha foliacea*), spottail mantis shrimp (*Squilla mantis*), Norway lobster (*Nephrops norvegicus*), red mullet (*Mullus barbatus*), striped red mullet (*Mullus surmuletus*), European anchovy (*Engraulis encrasicolus*), common pandora (*Pagellus erythinus*) and blackmouth catshark (*Galeus melastomus*) are subject to overfishing. The stock of pink shrimp (*Parapaeneus longirostris*) is assessed as sustainably fished.

- giant red shrimp (*Aristaeomorpha foliacea*) in GSA 11 is subject to overfishing.

- three stocks in GSAs 15 and 16, giant red shrimp (*Aristaeomorpha foliacea*), red mullet (*Mullus barbatus*) and common Pandora (*Pagellus erythinus*) are subject to overfishing.

- **s**ardine (*Sardina pilchardus*) in GSA 16 is considered to be sustainably fished, whereas anchovy (*Engraulis encrasicolus*) in the same GSA is subject to overfishing.

- common sole (*Solea solea*) in GSA 17 is subject to overfishing.

- picarel (*Spicara smaris*) in GSA 25 is currently being fished at a sustainable rate but the biomass estimated is below the B_{MSY}.

STECF endorses the findings and conclusions of the Report of the STECF-EWG 11-12

STECF recommendations

As a result of its review of the Report of the STECF_EWG 11-12 on assessment of Mediterranean stocks, the STECF has drawn the following recommendations:

1. The EWG was specifically requested to scrutinize the quality, consistency and completeness of the official Mediterranean DCF data call in the different GSAs. STECF recommends that the detailed comments by EWG 11-12 concerning quality and completeness of the national submissions to the 2011 Mediterranean DCF data call should be noted by DG Mare and communicated to the national correspondents of the Member States' DCF program.

2. STECF notes that since 2008, progress on Terms of Reference relating to bioeconomic modelling has been poor both in terms of data and models used. STECF thus recommends that bioeconomic modelling is dealt with either in a specific ad-hoc working group (i.e. outside the EWG stock assessment meetings) or within the EWGs dealing with economic issues.

5.4. STECF-EWG 11-17 on the Review of scientific advice on widely distributed stocks, stocks and fisheries located in Outermost regions – part 3

STECF is requested to review the report of the **STECF-EWG-11-17** Expert Working Group of October 17 – 21, 2011 (Ancona, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF response

STECF reviewed the draft report of the review of advice for stocks of interest to the European Community in areas under the jurisdiction of CCAMLR, CECAF, WECAF, ICCAT, IOTC, IAATC, GFCM, NAFO, and stocks in the North East Atlantic assessed by ICES which was prepared by the EWG 11-17 WG held in Ancona, Italy from 17-21 October 2011. The draft report was amended in the light of the latest information available to the STECF from ICES and relevant Regional Fisheries organisation. The report was adopted during the 38th Plenary meeting and is published as the STECF Review of advice for 2012 Part 3 in November 2011.

The STECF review of advice for 2012 Part 1 included the latest assessments and advice for stocks in the Baltic Sea and was published in June 2011. Part 2 contained the review of assessments and advice released by ICES up to 28 June 2011. Parts 1, 2 and 3 will be combined and published in the STECF Consolidated review of advice for 2012, which will be available in late November 2011.

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. For stocks assessed by ICES, 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:

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

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

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

 **- indicates that the status is either unknown because there is no quantitative assessment, or undefined when there is an analytical assessment but reference points are not defined**

 **- indicates that the absolute level is unknown, but increasing**

 **- indicates that the absolute level is unknown, but unchanged**

 **- indicates that the absolute level is unknown, but decreasing**

RECENT MANAGEMENT ADVICE/MEASURES: summary of most recent advice and/or management measures implemented.

FISHING OPPORTUNITIES FOR 2012 according to COM(2011) 298-Final: The TACs prescribed by the rules in Chapter 6 of COM(2011) 298-Final

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

Additional request

In relation to stocks in the ICES area, STECF was given the following additional request:

For those stocks where it is not possible to provide an analytical advice based on a catch forecast in relation to precautionary limits, the STECF is requested to (i) pin point the data deficiencies and (ii) to advise on which stocks belong to one or more of the following cases:

- *Stocks being assessed for the first time or for which there is a short data time-series;*
- *Stocks for which there are low levels of catches and for economic reasons the relevant biological data are not available;*
- *Stocks in relation to which exploratory data/assessment suggest increasing stock trends and/or no overfishing;*
- *Stocks in relation to which exploratory data/assessment suggest decreasing stock trends and/or overfishing or belonging to long-lived/slow-growing/late-maturing species vulnerable to exploitation;*
- *Stocks for which there is no advice at all;*
- *Stocks subject to mixed-fishery and discards effects (to be described in detail);*
- *Stocks in relation to which information on comparable stocks or eco-region is available and can potentially be used to give indications on stock trends (to be described in detail);*

Naturally short-lived stocks.

In attempting to respond to this request, STECF has drawn up a table classifying each of the stocks according to the above criteria. However, the task requires considerable time and resources and could not be completed during the STECF-EWG 11-17. Nevertheless STECF was able to partially address the request during this plenary meeting.

There are a number of issues that still must be clarified in order that the information in the table is accurate and useful. Without such clarification, STECF considers that the classifications for some stocks could be misleading. For example, the criteria vulnerable and economic value, both require further clarification and elaboration.

Nevertheless the form of the table is included below to illustrate its potential as a tool to summarise the status of those stocks for which a catch forecast cannot be made available. (Table 5.4.1.)

The Commission is invited to review the proposed format for its utility for future use.

Table 5.4.1. Example of the proposed summary Table of information for stocks for which no catch forecast can be provided.

Stock	1st assessment	short TS	low catch (000t)	low economic	Stock trend	Overfishing	Vulnerable	Advice	Category	Mixed fisheries	Discards effects	Similar stocks ?	short lived		Key to shading
Resources of the (INSERT NAME) ecoregion															
A	No	78-08	~0	Yes			No	Yes	11	Yes	Yes		No ?		Good/Yes
B	No	70-10	10-15		Dec (LPUE)		No	Yes	6	Yes	Yes		No ?		Uncertain
C	No	82-10	22-44		Stable	No	No	No	11	Yes	Yes		No		Bad/No
D	No	83-10	0-1.4		Dec (I) Inc (CPUE)		No	Yes	5	No			Yes		Unknown
E	No	83-10	~0				No	No	11	No			Yes		
F	No	83-10	0.13-0.66				No	No	11	No			Yes		
G	No	83-10	~0				No	No	11	No			Yes		
H	No	96-10	9.1-15.7				No	No	5,11	Yes	Yes		Yes		
I	No	96-10	61.1-143.5				No	No	5	Yes	Yes		Yes		
J															
K	No	71-09	0-0.03				No	No	11	Yes	Yes		Yes		
L	No	72-09	0-0.06				No	No	11	No			Yes		
Resources of the (INSERT NAME) ecoregion															
M	No	91-10	23.4-26.6		Dec	No	No	Yes	6	Yes	Yes		No		
N	No	~86-09	~0.7				No	Yes	11	Yes	Yes		No		
O	No						No	Yes	11	Yes	Yes		No		
P	No	80-10	1.1-1.2		Dec (LPUE)		No	Yes	11	Yes	Yes		No		

5.5. STECF- EWG 11-18 on the Review of economic data collected in relation to the DCF, harmonisation of sampling strategies

STECF is requested to review the report of the **STECF-EWG-11-18** Expert Working Group of October 17 – 21, 2011 (Salerno, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF observations

STECF notes that the extensive TORs were all addressed by the EWG-11-18. STECF also acknowledges the efforts made to review and summarise the outcomes from the three DCF workshops arranged during 2011.

STECF notes that estimating the capital value within the fishing fleet is complicated, and that some Member States were not using a common approach based on the PIM mentioned in the DCF. EWG-11-18 addressed a range of issues related to the valuation of capital and estimating total capital invested in fleets.

Similarly, estimation of depreciation costs is addressed differently by Member States.

The EWG-11-18 report contains a range of useful proposals to revise the guidelines for the Member State Annual Reports within the National Programmes.

Collection of economic data relating to the processing industry is undertaken under the DCF, but Eurostat also obtains data from national statistical offices. STECF suggests any duplication of data collection effort related to the processing industry should be avoided

STECF conclusions

In relation to the valuation of capital, STECF concludes that clarifications and specifications of concepts and terms given by EWG 11-18 should be taken into account in the revision of the DCF

STECF considers that it would be useful to identify issues that become apparent after comparing results of estimating fleet capital value using the PIM method in a number of MS. The EWG has proposed that this is among the ToR of a new Planning Group on Economic Issues that could operate under the DCF.

Finally, in relation to a revision of the DCF, STECF also concludes that the temporal, spatial and activity resolution levels of cost variables to be collected under the DCF are not sufficient for some applications, such as the evaluation or impact assessment of management plans. However, STECF concludes that the DCF should not be altered with respect to the resolution requirements as it is practically impossible to get comprehensive cost data for higher resolution scales. STECF concludes that it is more appropriate to develop and validate specific methodologies of disaggregation of economic data. STECF concludes that the study on this issue proposed by EWG 11-18 could provide useful results.

STECF recommendations

Based on the above observations and conclusions from EWG-11-18, STECF recommends the following:

- a revised DCF should take account of the proposals made in section 5 of the EWG-11-18 report

- depreciation should be calculated using the degressive depreciation scheme based on capital values estimated using replacement values (as opposed to capital values estimated using historical values) as explained in section 5.1 of the EWG-11-18 report.

- the Commission should initiate two studies focussing on:
  1) disaggregation of economic data below the fleet level to subareas and/or métiers, which, for instance, is relevant in relation to future needs for impact assessments and evaluation of management plans, and also when addressing ecosystem based management
  2) valuation of intangible assets such as access rights or fishing concessions, which are increasingly used in European fisheries but are traded in a non-transparent way so that it is extremely difficult to collect reliable and comprehensive data relating to value of access rights.

- the Commission should establish a comprehensive glossary of terms for collected economic data in order to avoid misinterpretations and incorrect use when data are used in specific situations. The glossary should be established based on the principles stated in Section 9 of the EWG-11-18 report, for instance by contracting a small group of experts using ad-hoc contracts.

- the Commission's guidelines for Member State Annual Reports in relation to the National Programmes should be communicated to Member States in accordance with the proposals in Section 10 of the EWG-11-18 report, enough that they can be applied in the next submission of AR (May 2012)

- the recommendation from the 8th Liaison meeting to the Commission about establishing a Planning Group for Economic Issues (PGECON) should be taken up. In order to have interaction and consistency, the PGECON chair should coordinate any relevant issues discussed and proposed with other groups collecting data (RCM, ICES etc.). The TORs for PGECON should cover at least the items mentioned in Section 13.1 of the EWG-11-18 report

- the future needs for economic data in the DCF should be further discussed and investigated within relevant groups in order to have thoroughly considered conclusions before any final decisions are taken.

5.6. STECF- EWG 11-14 on the Economic performance of the aquaculture sector

STECF is requested to review the report of the STECF-EWG-11-14 Expert Working Group of October 3 – 7, 2011 (Ispra, Italy) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF response

STECF noted that the report had not yet been finalised but the main findings were presented by the STECF-EWG 11-14 Chair. STECF agreed to review the report by correspondence once it has been finalised and to adopt it by written procedure.

5.7. Annual Economic Report on the Performance of Selected European fishing fleets 2011 (AER)

At its 2011 Summer plenary meeting (STECF-PLEN 11-02), STECF commented on a Draft version of the AER . The report has now been finalised and in reviewing the final report, STECF noted the following:

STECF OBSERVATIONS

STECF notes that procedures for automatic and manual checks introduced by the JRC have improved data coverage and quality. Technical guidelines were introduced by the JRC on clustering vessel segments to protect confidentiality of data. Some MS did not follow the guidelines correctly resulting in inconsistency of some time series.

The first draft of AER 2011 highlighted an inconsistency of approach to capital value estimation across MS. A DCF workshop was held in Naples, June 2011, which produced draft guidelines for the PIM method of capital value estimation. EWG 11-18 on economic data quality issues reviewed the workshop report and endorsed its main findings and conclusions. EWG 11-18 also reviewed current guidelines for AR (technical report) on clustering.

The STECF review noted a number of positive developments in producing the AER and proposes that the following procedures be adopted or continued:

1. The JRC has initiated extremely useful routine data checking procedures for economic data submitted by Member States and would encourage further continues to further enhance such procedures.

2. Two EWG meetings should be convened to produce the AER in 2012. The first will ideally focus on reviewing and checking quality of submitted data and the second should be solely dedicated to analysis, discussions and drafting the report. The process should be scheduled so that the AER can be finalised and approved at the STECF summer plenary.

3. In an attempt to ensure consistency of data submissions by Member States, the 2012 call for fleet economic data should only request data collected under the DCF, covering 2008, 2009 and 2010.

5. The next fleet economic data call issued by JRC (early 2012) should contain improved guidance on fleet segment codification, particularly in the case of clustering. To do this JRC data call designers should follow ensure consistency with the guidelines for National Programmes on the nomenclature of clustered segments. Specifically, clustered segments should be named after the "important segment with distinct characteristics" as proposed in the methodology for clustering in Annex 2 of the STECF EWG 11-18 report. It would also be extremely useful if the resulting 'updated' guidelines on how to cluster economic data were issued to Member States well of the 2012 fleet economic data call, so that, if necessary, MS will have time to seek clarification on advised procedures before uploading their data.

6. It would be useful if in future, a summary document containing key findings from the EU overview section of the AER report can be prepared and published. As far as possible, the contents of the summary report should follow the proposals given in Section **** of the STECF PLEN 11-01 report.

7. To increase access and transparency of data used to compile the AER, it would be useful if those data can be made available on the JRC data collection website in a user-friendly format.

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

6.1. Request for a STECF review of scientific advice: Technical Measures in the Celtic Seas (WoS, IS, CS)

Background

1) General scientific advice on technical measures in the Celtic Seas

In their stock advice of June 2011, ICES and STECF recommend to improve – or introduce for the first time - technical measures allowing the further recovery of the following stocks

a) West of Scotland

Whiting VIa
Haddock VIa

b) Irish Sea

Whiting VIIa
Haddock VIIa
Plaice VIIa

c) Celtic Sea

Whiting VII b-k
Haddock VII b-k

Plaice VIIfg.

In addition, STECF notes that for

Cod in VII bc/ e-k,

TAC constraints are not sufficient to ensure the further decline in fishing mortality.

The elements of advice can be summarised as follows:

a) West of Scotland

Whiting VIa: Based on the recent decline in trends of fishing mortality and the increased abundance of the 2009 year class, the stock would be expected to increase if the 2009 year class does not continue to be discarded at the rate observed in 2010. There are strong indications that management is not effective in limiting the catch. The proportion of fish discarded is very high and appears to have increased in recent years. More than half of the annual catch weight comprises undersized or low-value whiting which are discarded. 83% of these discards come from the TR2 (Nephrops) fishery.

ICES holds the view that measures to reduce discards and to improve the exploitation pattern would be beneficial to the stock and to the fishery, particularly when there are indications that the 2009 year class is relatively strong. Such measures should include the adoption of a sorting grid as well as appropriately located square-meshed panels. STECF agrees with this assessment.

Haddock VIa: 51% of the catches are being discards. Vessels targeting Nephrops (TR2) are responsible for ~88% of all discards, amounting to more than 2500 tonnes while they landed only 21 tonnes.

ICES recommends that technical measures should include the adoption of a sorting grid as well as appropriately located square-meshed panels.

STECF "notes that the provisions of Council Regulation (EC) 1288/2009 specifies that the percentage of cod, haddock and whiting that shall be retained on board by vessels operating in Division VIa shall be no greater than 30% of the total catch on board. If the by-catch restrictions remain in place in 2012, it is likely that fishing at F=0.3 in 2012 will give rise to increased discarding of haddock. In an attempt to prevent any increase in discarding of haddock, it would now seem appropriate to permit a directed fishery for haddock in Division VIa. STECF notes that the Nephrops (TR2) fleet in Division Via has been observed to have extremely high discard rates of haddock and whiting in recent years. The selectivity for this fleet needs to be improved to reduce the unwanted by-catch of these species."

b) Irish Sea

Whiting VIIa: more than 1.000t discarded in 2010.

According to ICES, technical measures need to be introduced such as increased codend mesh size, square mesh panels, separator trawls, and increased top sheet mesh in towed gears.

STECF "notes that further reductions of the TAC will not lead to the desired decrease in fishing mortality as the vast majority of catches are discarded, and STECF therefore recommends that the TAC system is supplemented with enhanced technical measures to greatly reduce discards and a mixed fisheries based approach to management."

Haddock VIIa: Discarding is a serious problem for this stock. The discard rates for all fleets in 2010 were 92-100% for one-year-olds; 22–96% for two-year-olds and 3–68% for three-year-olds by number.

According to ICES, an increase in mesh size to reduce discarding will be beneficial to this stock and could increase future yield. Reduced selectivity on younger ages would reduce discarding and promote stock increase when strong year classes occur. Some fleets are using 80 mm mesh to target Nephrops, 90 mm mesh in mixed fisheries and 100+ mm to target gadoids and other species. Recent gear trials have shown that square mesh panels can significantly reduce discards of undersized haddock. In order to minimise discards, a square mesh panel of at least 120 mm should be introduced for all fleets or selectivity devices that achieve equivalent or better improvements.

STECF is of the opinion that a suitable solution would consist in a reduction in the effort of the fleets and an exemption from the effort regulations to those operators able to demonstrate a more appropriate selection pattern to ensure gadoid by-catch is minimised in fisheries targeting other species.

Plaice VIIa: More than 80% of the catch weight is discarded. The high level of discarding (typically up to 80% in number) in this fishery indicates a mismatch between the minimum landing size and the mesh size of the gear being used. Measures, such as the introduction of grids to Nephrops trawlers, which reduce discardings will result in increased future yield potentials. Gear selectivity trials and monitoring from four Irish Nephrops trawlers using grids since 2009 indicate a potential 75% drop in fish by-catch. STECF agrees with this assessment.

c) Celtic Sea

Whiting VII b-k: Discarding of this stock for different fleets is substantial and highly variable (9–82% by weight and 18–90% by number of total catch).

ICES advises that any measure to reduce discarding and to improve the fishing pattern as advised for haddock in Divisions VIIb–k would be beneficial to the whiting stock. These might include technical measures such as increased cod-end mesh size, square mesh panels, separator trawls, and increased top sheet mesh in towed gears.

STECF holds the view that "technical measures to minimise discards should be considered with urgency."

Haddock VII b-k: Discarding is a serious problem for this stock; over the last 10 years 70% of the catch has been discarded (45% by weight). The TAC has not been restrictive in recent years, but since 2009 the national quotas of Ireland and Belgium appear to have become restrictive. The catches are increasing as the 2009 year class enters the fishery; and despite a moderate increase in TAC in 2011, the quota are likely to become restrictive for all countries, resulting in increased levels of discarding. An analysis of Irish landings and discards by

metier indicates that although the Nephrops fleets have very high discarding rates of haddock (>70% by weight), in absolute terms these fleets only contribute 10% of the Irish haddock discards in the Celtic Sea. The demersal otter bottom trawl (OTB) and Scottish seine (SSC) fleets in Divisions VIIgj contribute 82% of the haddock discards. Technical measures can reduce discarding and could increase the yield considerably. Improved selectivity on younger ages will reduce discarding and promote stock increase when strong year classes occur.

ICES recommends that an escape panel and minimum mesh size for the demersal fleet should be increased substantially and an analysis should be performed to estimate appropriate mesh size.

STECF "notes that the introduction of increased codend mesh sizes and square mesh (escape) panels to demersal towed gears appears to have delivered significant reductions in fishing mortality on haddock in the North Sea and west of Scotland. It is logical to assume that similar measures would be appropriate for haddock in area VII. Such measures would most likely lead to an improved exploitation pattern and improved yields and SSB and a reduction in discards of haddock. STECF recommends that square mesh (escape) panels and/or an increase in the minimum permissible codend mesh size be introduced for the demersal fleets that catch haddock in Divisions VIIb-k, Subareas VIII, IX and IX. An analysis should be undertaken to estimate the appropriate mesh sizes for the panels and codends for each of the fleets concerned."

Plaice VIIfg: Discards are substantial and have ranged from 30% to 70% in number (mainly below the minimum landing size). The high level of discarding indicated in this mixed fishery would suggest a mismatch between the mesh size employed and the size of the fish landed. Increases in the mesh size of the gear will result in fewer discards and in increased yield from the fishery. The use of larger-mesh gear should be encouraged in this fishery in instances where mixed fishery issues allow for it. STECF agrees with this assessment.

Cod VII bc/e-k:

ICES notes that "recent sampling programmes in countries exploiting this stock indicate that discarding is high and variable. They may account for 40–60% by number of all fish caught. These discards were mainly under the MLS until recently, when highgrading became more prominent in the fishery. he most pertinent changes to the fishing pattern for cod have been the increased highgrading and discarding in response to restrictive quotas since 2002. Highgrading has occurred in French fisheries since 2003 and has also been apparent in UK fisheries since 2007. Highgrading has decreased in the major fleets catching cod since 2008." ICES also finds that "the historical dynamics of Celtic Sea cod have been 'recruitment driven', i.e. the stock increased in response to good recruitments and decreased rapidly during times of poor recruitment. Recruitment in recent years has been poor except for the 2009 year class, which is estimated to be the strongest since 2000. Fishing mortality should be reduced in the longer term to maximize the contributions of recruitment to future SSB and yield. This will result in reduced risk to the stock."

STECF notes that the predicted landings in 2012 at FMSY TRANSITION "imply a 22% reduction in fishing mortality in 2012 compared to FSQ. Such a reduction in fishing mortality is unlikely to be achieved if management is solely through restrictions on landings. STECF recommends that in order to reduce fishing mortality to FMSY, additional measures are required."

The Commission is aware of the fact that large parts of the fishing industry consider these discard rates unsustainable and have engaged in projects for better gear selectivity, which have partly been introduced (for instance Swedish grid in some Nephrops vessels in the Irish Sea). However, the Commission is worried that the implementation of these selectivity measures takes too much time in order to effectively protect more abundant young fish so that it can enter the spawning stock, while at the same time ICES advises that TAC limitations (and changes to them) do no longer control the amount of catches, an assessment which is supported by the estimation of extremely high discard rates.

2) Description of applicable technical measures and fisheries

a) Description of the Current Technical Measures

Table 1: Technical Measures ICES Areas VIIA, VIIb-k

Requirements	Mesh Size 70-79mm	Mesh Size 80-99mm		Mesh Size 100mm+
Twine thickness	4mm double or 6mm single	4mm double or 6mm single		4mm double or 6mm single
Square Mesh Panel	80mm	80mm		NA
Headline Panel[1]	140mm x 15 meshes (VIIa only)	140mm x 15 meshes (VIIa only)		NA
No. of Meshes in Codend Circumference	120 or less	80-99mm 120	90-99mm 100	100
Max % of cod allowed	NA	NA	NA	NA
Max % of Hake Allowed	20	20	20	NA
Min % of *Nephrops* allowed	35	20		NA
Min % of Annex I list[2]	NA		70	NA
Max % of cod, haddock and saithe allowed	30	30	30	NA

Either/or

[1] Beam trawlers require 180mm panel behind the headline of length calculated by – Beam length in metres /12 x 5400/min.mesh size in panel

[2] Annex I of Regulation (EC) No 850/98

Table 2: Technical Measures ICES Division VI outside of Restricted area in Area VIa

Requirements	Mesh Size 70-79mm	Mesh Size 80-99mm	Mesh Size 100-109mm		Mesh Size 110-119mm		Mesh Size 120mm+
Twine Thickness	5mm double or 8mm single	5mm double or 8mm single	5mm double or 8mm single		5mm double or 8mm single		5mm double or 8mm single
Square Mesh Panel	80mm	80mm	90mm		90mm		NA
Headline Panel[1]	140mm x 15 Meshes	140mm x 15 Meshes	NA		NA		NA
No. of Meshes in Codend Circumference	120 or less	80-89mm -120 90-99mm- 100	100		100		NA
Max % of Cod allowed	5	20	5	5	5	3	No restrictions
Max % of Hake Allowed	20	20					
Min % of *Nephrops* allowed	30	30					

Either/or

Min % of Annex I list[2 & 3]	NA				70	70			
Max. % of saithe allowed	NA							70	
Min % of haddock, hake, whiting, megs, monk, rays, saithe., *nephrops*	NA	70	70						

[1] As 1 above for beam trawls
[2 & 3] Annex I of Regulation (EC) 850/98 and Article 4 of Regulation (EC) 2056/2001

Table 3: Technical Measures inside Restricted Area in Area VIa[1]

Requirements	*Nephrops* Vessels	Demersal Vessels ≤15m	Demersal Vessels ≥ 15m
Codend MeshSize	80mm	110mm	120mm
Square Mesh Panel	120mm or Sorting Grid	110mm (3m & 9-12m from codline)	120mm (3m & 9-12m from codline)
Max % of Cod, Haddock, Whiting	10	30	30
Min % of *Nephrops* required	30	NA	NA

[1] Regulation (EC) 1288/2009 in conjunction with point 6 of Annex III of Regulation (EC) No 43/2009 The Regulations regarding twine thickness, headline panel and codend circumference in Table 2 also apply

Other Technical Measures

Area VIIa

1. Irish Sea Cod Closure – (EU – Regulation (EC) No 579/2011)

Area VIIb-k

1. Hake Recovery Area (EU – Regulations (EC) No 494/2002 and 811/2004)
2. Celtic Sea Cod Closures (Since 2005 all trawling activity is prohibited in the "CodBox" (30E4, 31E4, 32E3) during February and March; point 6.2 of Regulation (EC) No 43/2009)
3. Porcupine Bank *Nephrops* Closure (EU – Regulation 57/2011)

Area VIa

1. Scottish Conservation Credit Scheme (National - UK)
2. Greencastle Cod Closure (National – IE)
3. Clyde Closed Area (EU – Regulation (EC) No 2056/2001)
4. Windsock Closed Area (EU – Regulation (EC) No 2056/2001)
5. Restrictions on beam trawls (EU – Regulation (EC) No 2056/2001 Article 6)

b) Description of the Fisheries

Area	Country	Fishery Description	Gear Used	Selectivity devices/Additional Comments
West of Scotland ICES Area VIa				
VIa	IE	Mixed Demersal (OTB) – monkfish, megrim, hake with bycatch including **haddock** and **whiting**	120mm +120mm Smp (≥15m) 110mm + 110mm Smp (≤15m) (Outside of restricted area within VIa vessels fish with 100mm+ 90mm Smp)	5 Irish vessels granted exemption from effort regime in 2011 on the basis of low cod catches < 1%
VIa	UK	*Nephrops* - FU 11, 12, 13 – bycatch **haddock** and **whiting** (mainly discards)	80mm+120mm Square Mesh Panel	Scottish Conservation Credit Scheme
VIa	UK	Mixed Demersal – monkfish, megrim bycatch **haddock**, cod, saithe	120mm+120mm Smp (≥15m) and 110mm +110mm Smp (≥15m)	Scottish Conservation Credit Scheme
VIa	UK	Scottish Seine – **haddock, whiting**, cod		Scottish Conservation Credit Scheme
VIa	Fr	Mixed Demersal – saithe bycatch of monkfish, megrim and deepwater species (small quantities of **haddock)**	100mm (120mm+120mm inside restricted area)	Some vessels using 120mm codends in VIa outside restricted area
Irish Sea ICES Area VIIa				
VIIa	IE	*Nephrops* – bycatch of h**addock**, monkfish, plaice, **whiting** (**mainly discards**), cod	70-99mm + 80mm SMP	3 Vessels with effort exemption using sorting grids (2010). 5-6 Vessels use separator trawl during cod closure period; Up to 10 twin-rig vessels using 120mm Square Mesh Panels (VIIa & VIIb-k)
VIIa	IE	Mixed Demersal (2-3 vessels) - rays and **haddock**	100mm	None reported
VIIa	IE	Scottish Seine (2 vessels) - **haddock**	100mm	None reported
VIIa	IE	Beam Trawls - sole, plaice and rays	80-99mm +180mm headline panel	None reported
VIIa	UK	*Nephrops* - bycatch of h**addock**, monkfish, **plaice**,	70-99mm + 80mm SMP	None reported

		whiting (**mainly discards**), cod		
VIIa	UK	Directed Whitefish with semi-pelagic trawls (3-4 vessels) – **haddock**, cod, hake	100mm	
VIIa	BE	Beam trawl – sole and **plaice**	80-99mm (assumed)	
CELTIC SEA – ICES AREA VIIb-k				
VIIb-k	IE	*Nephrops* fishery FU 16, 17, 19, 20-22 – by-catch of **haddock, whiting**, monkfish, megrim, sole, hake, **cod**	70-99mm + 80mm Smp; 100mm inside Hake recovery Area	Up to 10 twin-rig vessels using 120mm Square Mesh Panels (VIIa & VIIb-k); Some vessels using 90mm codends
VIIb-k	IE	Mixed Demersal **haddock, whiting**, monkfish, megrim, sole, hake, **cod**, *Nephrops*	80-99mm and 100mm depending on species mix	Most Irish vessels using 90mm codends
VIIb-k	IE	Scottish seines (5-6 vessels) mainly **haddock, whiting** and hake	80-99mm and 100mm depending on species mix	None reported
VIIb-k	IE	Beam trawl (5-6 vessels) - sole, **plaice,** megrim and monkfish bycatch **cod** (small bycatch of gadoids)	80-99mm + 180mm headline panel	None reported
VIIb-k	FR	Directed whitefish (**Cod**, **haddock** and **whiting**)	100mm	None Reported
VIIb-k	FR	Mixed demersal and *Nephrops*- bycatch cod, **haddock, whiting**, megrim, monkfish, hake	70-99mm	Most vessels using 100mm
VIId	FR	Directed whitefish (**whiting** and **cod**)	90mm or 100mm depending on species mix	Fully documented fisheries
VIIb-k	UK	Mixed demersal (mainly small vessels some pair trawlers) – wide variety of species including **haddock** and **whiting**	70-99mm	None reported
VIIb-k	UK	Beam Trawl - sole, **plaice**, megrim and monkfish (small bycatch of gadoids)	80-99mm + 180mm headline panel	None Reported
VII b-k, mainly f-g	BE	Beam trawl – sole and **plaice,** small by-catch of gadoids	80-99mm (assumed)	

c) Reasons for Discarding

Stock	Sources of Discarding
Whiting in VIa	Undersize fish (restricted to *Nephrops* fisheries as 120/120 gear is selective for whiting)
Haddock in VIa	Undersize fish (restricted to *Nephrops* fisheries as 120/120 gear is selective for haddock); Over catch composition and over quota
Whiting VIIb-k	Undersize fish; Some high-grading
Haddock VIIb-k	Undersize fish; Some high-grading and over quota
Plaice VIIf,g	Undersize fish
Whiting VIIa	Undersize fish
Haddock VIIa	Undersize fish
Plaice VIIa	Undersize fish
Cod VII bc/ e-k	Highgrading, less so since 2008; over quota catches

Terms of reference:

In order for the Commission to prepare possible regulation on technical measures,

1) STECF is asked to provide, were possible, **gear specifications** in accordance with stock advice from ICES and STECF that would result in considerably less fish of **haddock** and **whiting** in VIa and VIIa; and of **plaice** in VIIa and VII fg being captured (and subsequently discarded), using available information from modified gear in use or which has been tested, either in the relevant fisheries or in fisheries with similar patterns in other areas; STECF is kindly requested to identify the metier(s) (gear/area) for which the gear specification is being recommended, according to high catches of the species by that metier;

2) STECF is asked to advise on the effect on discards and fishing mortality that would follow from a modification of the **catch composition rules for whitefish in VIa** (point 6 of Annex III to Regulation 43/2009) such that haddock would be removed from those rules; STECF is invited to advise on any other modification of those catch composition rules that are considered an appropriate reaction to the change of abundance of whitefish species in that area;

3) STECF is asked to advise on technical measures that could be introduced in order to reduce the age profile of catches and the fishing mortality concerning **cod in the Celtic Sea**, so that less young fish is caught which consequently could contribute to the reproduction of the stock and provide for higher weight per individual in the catches; STECF is kindly requested to identify the metier(s) for which the technical measures are being recommended

4) STECF should assess in which fisheries/stocks a **rapid introduction of the technical measures** is needed in order to avoid that abundant year classes cannot contribute to a replenishment of the spawning stock and to its potential for future reproduction.

STECF Observations

STECF reviewed the report prepared under an ad hoc contract and which addresses the Terms of Reference.

STECF considers that the report provides a detailed summary of available technical measures to reduce unwanted catches in number of key metiers operating in Western Waters. STECF endorses the report's findings and conclusions.

STECF has identified a number of technical measures that would improve species and size selectivity of gears operating in western waters. These measures are listed below in response to each of the specific requests. If such measures are implemented with immediate effect, unwanted bycatch can already be reduced as early as 2012. While the measures proposed below represent those that STECF considers are the most appropriate for the fisheries concerned, STECF notes that there are a range of other possible measures that might achieve similar results.

For many of the stocks identified, ICES and STECF consider that improvements in the selection pattern of the fleets exploiting them are required to reduce discards and achieve MSY. The strong 2009 year classes of haddock (VIa, VIIbk) and cod (VIIbk) have already been heavily discarded. STECF notes that it is possible to avoid any future repetition of the high discard levels seen in 2010 by introducing more selective gears into the fisheries. STECF further notes that the 2010 VIa haddock year class is estimated to be of a similar magnitude to the 2009 year class. To avoid high levels of haddock discards in 2012, urgent improvements in selectivity are required in fisheries currently using mesh sizes less than 100 mm targeting flatfish and Nephrops and mixed demersal fisheries where mesh sizes less than 120 mm are permitted.

STECF notes that there is a management choice regarding the species composition of the Nephrops fishery.

• STECF notes that in some components of Nephrops fisheries, particularly larger vessels operating further offshore, marketable whitefish by-catch can present an important economic component of the catch. If it is the intention to maintain a mixed fishery using Nephrops gears, then measures to further enhance the size selectivity of the gears are required in order to improve the selection pattern for haddock and whiting.

• To exclude cod, haddock and whiting from Nephrops fisheries, STECF suggests that the introduction of a species-selective grid together with measures to improve the size selectivity of the gears for small fish that pass through the grid, is likely to achieve the greatest reduction in fishing mortality on these species.

STECF notes that in several cases there are substantial catches of fish below the size that the gears would normally be expected to catch and retain. The selection curve for the gear is derived through modelling the results from selectivity experiments and the large numbers of small fish in the catch suggests that in practice, the selectivity of the gears is less than predicted by the model. This may indicate that (i) there may be circumvention of the technical measures; (ii) the model, which is largely parameterised from selectivity data obtained from larger mesh sizes, may overestimate the selectivity of cod-ends with mesh sizes in the range 80-100mm; and/or (iii) there is inherent between-haul variability. While these potential biases may result in an over or underestimate in changes in absolute catches, the

modelling approach taken does provide a reasonable estimate of the relative change in catches that would have occurred if a more selective gear had been used in 2010. Nevertheless, the observed catch profiles show that the current measures result in a large portion of the catch being discarded because it is below minimum landing size, emphasising the need to improve selectivity.

STECF notes that several of the gear options are predicted to result in loss of marketable catch. If fleets are not subject to quota and effort constraints, they could compensate for these losses by increasing fishing effort, which could potentially negate any reductions in discarding achieved through modification in the technical characteristics of the gear.

STECF conclusions

In response to the specific requests STECF concludes the following:

*1)STECF is asked to provide, where possible, **gear specifications** in accordance with stock advice from ICES and STECF that would result in considerably less fish of **haddock** and **whiting** in VIa and VIIa; and of **plaice** in VIIa and VII fg being captured (and subsequently discarded), using available information from modified gear in use or which has been tested, either in the relevant fisheries or in fisheries with similar patterns in other areas; STECF is kindly requested to identify the metier(s) (gear/area) for which the gear specification is being recommended, according to high catches of the species by that metier;*

For the TR2 fleet operating in VIa, STECF concludes that the most appropriate method to reduce catches of the 2009 VIa haddock and whiting year class and maximise the reduction in fishing mortality would be to introduce a species selection grid.

STECF notes that in order to further reduce the capture of juvenile (<MLS) haddock and whiting that pass through the grid, consideration should be given to improving the size selection. STECF concludes that this could be achieved by simultaneously increasing the cod end mesh size, reducing the maximum number of meshes in circumference to 100 and moving the 120 mm square-mesh panel to 6 – 9 m from the codline.

In order to reduce the catch of plaice in the VIIa TR2 fleet STECF concludes that species selectivity in the fishery needs to be improved. STECF notes that the grid is also the only demonstrable method available to reduce the catch of plaice in the TR2 fishery in VIIa. STECF notes that in order to further reduce the capture of juvenile (<MLS) haddock and whiting that pass through the grid, consideration should also be given to improving the size selection. STECF concludes that this could be achieved by simultaneously increasing the cod end mesh size to 95 mm, reducing the maximum number of meshes in circumference to 100 and moving the 120 mm square-mesh panel to 3 – 6 m from the codline.

STECF notes that the introduction of a grid to the TR2 fleet in VIa and VIIa will also substantially reduce cod catches which is in accordance with ICES advice. It would also reduce discarding of a range of other commercial and non-commercial species.

STECF notes that options to reduce plaice discards in the beam trawl fisheries in VIIa and VIIf-g are very limited. The only proven technical gear modification is to increase mesh size. The increases required to have even a moderate reduction in plaice catch will have a significant negative impact on catches of target species i.e. sole.

2) STECF is asked to advise on the effect on discards and fishing mortality that would follow from a modification of the ***catch composition rules for whitefish in VIa*** *(point 6 of Annex III to Regulation 43/2009) such that haddock would be removed from those rules; STECF is invited to advise on any other modification of those catch composition rules that are considered an appropriate reaction to the change of abundance of whitefish species in that area;*

STECF notes that a number of factors can contribute to discarding and that when providing advice on measures to reduce the likelihood of discarding in specific fisheries, it is important to identify key drivers. In this case, STECF identifies regulatory-induced discarding arising from the bycatch regulation as a particular problem.

STECF notes that fleets may comply with landings composition regulations simply by discarding components of the catch. Such regulations will thus not necessarily be effective towards controlling fishing mortality. STECF does not advocate such an approach. STECF notes that given the estimated increase in the abundance of haddock stock in VIa and the consistent forecast of increased catch rates, maintaining haddock in the current catch composition rules is likely to lead to a substantive increase in such regulatory-induced discards. Furthermore, in order to take an increased quota in the presence of a bycatch regulation it is highly likely that fishing on the stock would increase and be associated with increased discards and a rise in fishing mortality rate.

Such increased haddock discards may arise in the two defined demersal fisheries, i.e. the

- Nephrops fisheries with a 80 mm minimum meshsize and additional sorting devices (grid or square mesh panel and a catch composition of minimum of 30 % Nephrops and a maximum of 10 % of cod, haddock and/or whiting.
- Mixed demersal fisheries of a 120 mm minimum meshsize (vessels >15 m) and a square mesh panel if catch is composed of less than 90 % saithe and less than 30 % of cod, haddock and/or whiting.

To avoid potential regulatory-induced discarding of haddock associated with the catch composition regulation, STECF advises that this could be achieved by removing haddock from the catch composition regulation. However, STECF is unable to quantitatively assess what the impact on fishing mortality and discard levels will be.

STECF also notes that the current catch composition regulation restricts the combined retained catch of cod, haddock and whiting to 30% of the overall catch retained on board. If haddock are removed from the catch composition regulation and the permitted by-catch percentage remains at 30%, the amount of cod and whiting that can be retained on board on each fishing trip would potentially increase, because the by-catch relates to only 2 species rather than 3. However, the potential increase in cod and whiting retained, will potentially reduce discarding of these species at the trip level provided that the vessels involved have sufficient remaining quota of both species.

3) STECF is asked to advise on technical measures that could be introduced in order to reduce the age profile of catches and the fishing mortality concerning ***cod in the Celtic Sea****, so that less young fish is caught which consequently could contribute to the reproduction of*

the stock and provide for higher weight per individual in the catches; STECF is kindly requested to identify the metier(s) for which the technical measures are being recommended.

STECF notes that the majority of cod landings in the Celtic Sea are associated with the otter trawl fishery primarily targeting gadoids. Celtic Sea cod has a high growth rate meaning that there is a relatively narrow selection window available. However, the simulations presented show that there is a benefit to improving the selection pattern in the fishery and that this will also help mitigate the high discarding of whiting and haddock. STECF notes that there are a range of cod-end and square mesh panel configurations that could be introduced. The impact of increasing the cod-end mesh size to 110mm and the introduction of a 110mm square mesh panel at 9-12m from the codline has been assessed, but it is also possible to achieve similar selectivity by, for example, increasing the cod-end mesh size to 120mm.

*4) STECF should assess in which fisheries/stocks a **rapid introduction of the technical measures** is needed in order to avoid that abundant year classes cannot contribute to a replenishment of the spawning stock and to its potential for future reproduction.*

STECF concludes that to improve selectivity for cod haddock and whiting and reduce discarding of these species, the technical measures referred to above should be introduced with immediate effect to the following metiers:

TR2 Nephrops fleet in Division VIa

TR2 Nephrops fleet in Division VIIa
OTB vessels targeting Nephrops in the Celtic Sea (Divisions VIIfg)

OTB vessels targeting whitefish in the Celtic Sea (Divisions VIIfg)

6.2. Request for STECF support on possible ToRs for ad hoc contracts and on supporting information to be requested to MS to allow the assessment of Technical Conservation Measures

Background

Following the Commission proposal for an extension to the end of 2012 of R(EC) No 1288/2009 establishing transitional Technical Conservation Measures and with the aim to develop a proposal for a new framework for Technical Conservation Measures in the context of a reformed Common Fisheries Policy, the Commission has agreed to carry out an impact assessment of possible modifications to the framework currently implemented according to the R(EC) No 850/98, as well as carrying out scientific assessment of measures that maybe included in the new regulations.

As a consequence, some Member States have already requested possible changes to be taken into account by the Commission when drafting its proposal on a new framework for Technical Conservation Measures. These requests have largely arisen during discussions on the Transitional Technical measures regulation.

Terms of Reference

To allow the Commission to deal with such requests as quickly as possible, the STECF is requested to discuss and to suggest possible updates to the Terms of Reference drafted by the Commission, and to specify the type of data and the spatial and temporal coverage which would be needed by scientists to carry out proper assessments of these requests.

List of requests

1. Request from the Irish Authorities on the use of the entangling nets.

Background: The Irish authorities have requested a derogation to Annex III of EC Reg. 43/2009 to for a small number of inshore vessels < 10m in length to use entangling nets to target lesser spotted dogfish (Scyliorhinus canicula)within the restricted area in ICES zone VIa defined in the Regulation b. The basis for this derogation is that that this fishery can be demonstrated to have very low levels of catches of cod, haddock, spiny dogfish and whiting.

Request to the STECF

In the light of available information, particularly on catch composition, the STECF is requested to give its opinion on the likely impact of the proposed derogation on the species of concern listed below based on the spatial and temporal characteristics of this fishery and the specifications of the gear proposed.

Species concerned: cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), whiting (*Merlangius merlangius*) lesser-spotted dogfish (*Scyliorhinus canicula*), spiny dogfish (*Squalus acanthias*).

2. Request from the UK Authorities on the use of towed gears with a mesh size of 80-99 mm

Background: The UK authorities have requested a derogation to Annex III of EC Reg. 43/2009 in order to use towed gears of a codend mesh size of 80-99 mm to target queen scallop within the restricted area in ICES zone VIa defined in the Regulation. The fishing gear used would incorporate either a sorting grid or a square mesh panel of 120 mm as described in as defined in Appendix 2 and Appendix 5 to Annex III of Regulation (EC) No. 43/2009 respectively. The catch retained would comprise of no less than 90% of queen scallop. The reasons for this derogation are low levels of catches of whitefish with this gear.

Request to the STECF

In the light of available information, particularly on catch composition, the STECF is requested to give its opinion on the likely impact of this derogation on cod, haddock and whiting stocks based on the spatial and temporal characteristics of this fishery and the specifications of the gear proposed. In particular STECF are requested to give an opinion on the likely impact on catches and whether the use of this gear could lead to high discarding of cod, haddock and whiting.

Species concerned: cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), whiting (*Merlangius merlangius*), queen scallop (*Aequipecten opercularis*).

3. Request from the Irish Authorities to fish with sorting grids

Background: The Irish authorities have requested a derogation to use sorting grids in accordance with points (b), (c), (d) and (e) from Appendix 2 of Annex III of Regulation

43/2009 in the area defined in Paragraph 8.2 (b) of Annex III of Regulation 43/2009. In this area currently vessels are allowed to operate with a separator trawl being recognized as a cod "friendly" gear. The reason for this derogation is that the sorting grid has been demonstrated to give very large reductions of cod catches far in excess of those achieved with the separator trawl and therefore it seems inappropriate that the use of the sorting grid should be prohibited in this area.

Request to the STECF

In the light of available information, and previous assessment of the sorting grid in relation to cases submitted under Article 11 of the LTMP for cod, the STECF is requested to give its opinion on the likely impact of this derogation on cod stocks in the restricted area and whether the use of the sorting grid would have any negative impacts.

Species concerned: cod (*Gadus morhua*), **Gears concerned:** separator trawl, sorting grids

4. Request from the UK Authorities to use a novel escape panel for trawls in the Irish Sea Nephrops fishery.

Background: The UK authorities request a derogation to use a novel escape panel for trawls in the Irish Sea Nephrops fishery which consists of parallel 120 mm square mesh panels divided by a 12 mesh strip of diamond mesh netting (Briggs, 2010) in the area defined in Paragraph 8.2 of Annex III to the Regulation 43/2009. In this area currently vessels are allowed to operate with a separator trawl being recognized as a cod "friendly" gear. The reason for this derogation is based on the very high reductions in haddock and whiting discards that have been shown in trials with this selectivity device.

Request to the STECF

In the light of available information, the STECF is requested to give its opinion on the likely impact of this derogation on cod, haddock and whiting stocks in the restricted area and in the Irish Sea as a whole and whether the use of the square mesh panel arrangement would have any negative impacts, particularly on cod, haddock and whiting catches (landings + discards).

Species concerned: cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), whiting (*Merlangius merlangius*), *Nephrops norvegicus*. **Gears concerned:** Nephrops trawl.

5. Request from the Portuguese Authorities on the use of gill nets, entangling nets and trammel nets.

Background: The Portuguese government has submitted two requests to STECF in March 2009 and April 2010 requesting an extension of the current derogations on the use of gillnets and entangling nets to allow the use of trammel nets in are IX. This is on the basis of the provisions of article 9.12 of Annex of Regulation (EC) No. 43/2009 which allows to exclude certain fisheries in ICES Zones VIII, IX and X from the application of points 9.1 to 9.11 of this regulation, "where information provided by the Member States show that those fisheries result in a very low level of shark by-catches and of discards". STECF has on both occasions owing to a lack of discard information and lack of information on catches of other sharks, concluded that the composition of sharks in the catches of the Portuguese trammel net fleet fishing in Division IX cannot be reliably quantified. Therefore the impact of this fishery on sharks could not be quantified and the derogation should not be granted.

Request to the STECF

In the light of additional information supplied by Portugal, the STECF is requested to give its opinion on whether the use of trammel nets in waters less than 600 m depth targeting anglerfish in area IX comply with the condition set out in point 9.12 of annex III of Regulation (EC) No 43/2009 that they must result in a very low level of shark by-catches and of discards for the Commission to allow the deployment of these nets down to 600 m.

Species concerned: Gulper shark (*Centrophorus granulosus*), all other species caught by the gears concerned. **Gears concerned:** trammel nets.

6. Request from the Spanish Authorities on the use of gill nets, entangling nets and trammel nets

Background: The Spanish government has requested the Commission to allow the continued deployment of gillnets, entangling nest and trammel nets below 600m depth in ICES zones VIII, IX on the basis of observed low levels of shark by-catches and discards. This request was assessed by STECF in April 2010. STECF considered the observer trip data submitted with the request to be very sparse and not necessarily representative of the current catch compositions of the fleet. STECF therefore concluded that the data submitted may not reliably reflect the recent catch levels of sharks by the Spanish gillnet fleet. Therefore STECF was unable to judge whether the Spanish fleet concerned was in compliance with the provisions of the regulation. The impact of the fishing activities on the shark populations in Divisions VIIIc and IX is not quantifiable.

Request to the STECF

In the light of additional information supplied by Spain, the STECF is requested to give its opinion on whether the activities of the Spanish fleet concerned comply with the condition set out in point 9.12 of annex III of Regulation (EC) No 43/2009 that they must result in a very low level of shark by-catches and of discards for the Commission to exclude them from the 600m depth limit.

Species concerned: Gulper shark (*Centrophorus granulosus*), all other species caught by the gears concerned. **Gears concerned:** trammel nets, gillnets, entangling nets.

7. Request from the Irish Authorities on a seasonal closed area

Background: The Irish authorities have proposed to close ICES statistical rectangle 39E3 in ICES zone VIa to all fishing activity from the period 1 January to 31 March and from 1 October to 31 December to protect juvenile cod. In addition the Irish authorities have proposed closing ICES statistical rectangles 47E3 and 46E2 to fishing with towed gears for the period 1 January to 31 December to protect spawning cod. The Irish authorities, based on their own analysis, have indicated that the closure of these areas would significantly reduce fishing mortality on cod in ICES zone VIa.

Request to the STECF

In the light of available information, particularly effort (VMS), landings and catch composition data, the STECF is requested to give its opinion on the likely impact on cod mortality of closing these areas at the times of the year proposed. The impact on the fleets involved and the likely displacement to other areas that my impact on other stocks should also be considered.

Species concerned: cod (*Gadus morhua*), **Gears concerned:** towed gears.

8. Request from the Irish Authorities on *Pollachius virens* with respect to Council Regulation (EC) 43/2009

Background: The Irish authorities have requested clarification on Council Regulation (EC) 43/2009 (Annex III, Part A, Point 6.3) which provides a derogation to fishing closures in parts of Areas VIa by listing fishing gears that can be used in the closed areas and the species that can be carried aboard fishing vessels. Council Regulation (EC) 1288/2009 extended the derogation, adding handlines and mechanised jigging to the list of permitted gears and including mackerel and pollock in the list of permitted species. However, the derogation for pollock appears to refer solely to *Pollachius pollachius*. This has created difficulties for fishermen who, when using mechanised jigging machines, commonly catch both *Pollachius pollachius* (pollack) and *Pollachius virens* (saithe). Not including *Pollachius virens* (saithe) in the list appears to have been an oversight.

Request to the STECF

In the light of available information, STECF is requested to give its opinion on whether there are any biological or technical reasons why *Pollachius virens* (saithe) should not be included in the species listed in the derogation.

Species concerned: Saithe (*Pollachius virens*), Pollock (*Pollachius pollachius*). **Gears concerned:** jigs/handlines.

STECF response

STECF reviewed the requests from the Commission with a view to drafting terms of reference to address the likely impact of proposals to be taken into account in preparing a new framework for technical conservation measures. **STECF suggests that the work required to provide the basis for that advice would be best undertaken through a series of ad hoc contracts, the aim of which would be to prepare a report to the STECF for review during a future plenary meeting.** The contractor should liaise with the Commission to make sure that all the information needed are provided. We also encourage the people to whom the contract is given to communicate with STECF via the Secretariat[1] if clarification is needed. This will aim to ensure that the contractor provides all the data and information necessary for the STECF to conduct a thorough review of the contract report and give an informed response to the Commission.

General requirements for each of the contract reports

For each of the above requests the contract report should contain the following elements:

- the reasons for the request for derogation together with the associated Regulation(s) and Article(s) under which it is being sought;
- a full description of the gears concerned together with a legal definition of such gears;
- the conservation status of the species concerned;
- and a description of the likely future impacts in the areas to which the derogation would apply;

1 stecf-secretariat@jrc.ec.europa.eu

- a full description of the data and methods used to assess the likely impacts of the proposed derogation on the stocks of the species concerned;
- the characteristics of the vessels involved and spatial and temporal distribution of the proposed derogated fishery;
- the selectivity characteristics of the gears to be used in relation to the species concerned;
- a time series of the spatial distribution of deployed fishing effort for the vessels involved;
- any other information that the contractors consider pertinent to the evaluation.
-

Specific requirements for selected contract reports

Request from the UK Authorities on the use of towed gears with a mesh size of 80-99 mm (Request No 2 above)

In addition to the abovementioned elements the following additional clarification is requested:

- STECF notes that the UK authorities have requested a derogation to use towed gears where the catch retained would comprise of no less than 90% of queen scallop. STECF suggests that before submitting the request for derogation for assessment by the Committee that DG MARE seeks clarification from the UK Authorities on this point because species composition of the catch and species composition of the retained catch may be markedly different and have quite different impacts on the stocks concerned and in particular, whether such data confirms that *catche*s of cod are below 1.5% in accordance with article 11.2 of EC regulation 1342/2008.

Request from the Irish Authorities on a seasonal closed area (Request No. 7 above)

In addition to the abovementioned elements the following additional elements are requested:

- the time series of historic catch compositions and effort by the gears concerned should be provided by month;
- a time series of survey CPUE data for the species concerned inside and outside the proposed closed area is needed;
- details of the spatial, temporal extent of real time closures initiated by the UK authorities inside the proposed closures and an assessment of the likely impacts of these closures on the mortality of the species of concern.

5. Request from the Portuguese Authorities on the use of gill nets, entangling nets and trammel nets (Request No. 5 above).

In addition to the abovementioned elements the following additional element is requested:

- detailed landing and discards composition data showing the proportion of gulper shark and other elasmobranch species in the total catches of the Portuguese gillnet and

entangling net fleets. As a minimum, catch compositions should list information on length and weight of the catches of the species concerned and an estimate of the relative importance in terms of value of these in the overall catches of the vessels concerned

6.3. Request for STECF support on fish stocks exploited under Fisheries Partnership Agreements (Greenland)

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 is presently a Fisheries Partnership Agreement signed with Greenland covering various commercial fish stocks.

The scientific advice on the stock status and on exploitation levels is provided by the International Council for the Exploration of the Sea (ICES), the Northwest Atlantic Fisheries Organization (NAFO), by the Greenland Institute of Natural Resources (GINR) and by German Institute for Sea Fisheries (GISF).

Terms of Reference

For the FPA with Greenland 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 resources1,
- 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,
- Assessment of present management measures against the MSY strategy3 (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 ICES, NAFO, GINR and GISF and on any other available information.

Advice should be provided for the stocks and for the management area listed below.

Stock	**Area**	**Source of advice**
Cod (*Gadus morhua*)	East (ICES V, XIV) West (NAFO 0,1) Greenland	ICES, GISF
Pelagic/Oceanic redfish (*Sebastes* spp.)	East (ICES V, XIV) West (NAFO 0, 1) Greenland	ICES
Greenland halibut (*Reinhardtius hippoglossoides*)	West (NAFO 0,1) Greenland	NAFO
Greenland halibut (*Reinhardtius hippoglossoides*)	East (ICES V, XIV) Greenland	ICES
Northern prawn/shrimp (*Pandalus borealis*)	West (NAFO 0,1) Greenland	NAFO
Northern prawn/shrimp (*Pandalus borealis*)	East (ICES V, XIV) Greenland	GINR, NAFO
Atlantic halibut (*Hippoglossus hippoglossus*)	West (NAFO 0,1) Greenland	GINR
Atlantic halibut (*Hippoglossus hippoglossus)*	East (ICES V, XIV) Greenland	GINR
Capelin (*Mallotus villosus*)	East (ICES V, XIV) Greenland	ICES, Icelandic MRI
Snow crab (*Chionoecetes opilio*)	West (NAFO 0,1) Greenland	GINR

STECF observations

Under the STECF framework for ad hoc contracts, a summary report for the Greenland stocks was prepared and available to the STECF:

"Scientific Advice on fish stocks exploited by European fleet under the Fisheries Partnership Agreement signed with Greenland", by Jesper Boje, 51 pp.

The report is available at the STECF PLEN-11-03 meeting's website on https://stecf.jrc.ec.europa.eu/meetings/2011

STECF wishes to commend the author for providing a comprehensive overview for each of the 15 stocks, addressing all Terms of Reference (see above).

STECF was requested to give an opinion on the following:

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

   Biological reference points have only been defined for Greenland halibut in Subareas V, VI, XII and XIV, with the present fishing mortality being twice as high as F_{MSY}. All other stocks are being assessed by trends in survey indices, CPUE and landings. Some stocks are showing recent improvement (Greenland cod; golden redfish in V, VI, XII and XIV; Greenland slope beaked redfish; Northern shrimp in NAFO SA 0+1; demersal redfish in NAFO SA 1), other show stability (pelagic beaked redfish deep; capelin in the Iceland-East Greenland-Jan Mayen area; Northern shrimp in the Denmark Strait and off East Greenland; Greenland halibut in NAFO SA 0+1) or low stock size (pelagic beaked redfish shallow; Greenland halibut in V, VI, XII and XIV; snow crab in NAFO SA 0+1), while for Atlantic halibut, the stock status is unknown although catches are much lower than previously observed.

   STECF agrees with these estimations and acknowledges that ICES, NAFO and national authorities are working towards establishing reference points where possible.

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

   Apart from Greenland halibut off East Greenland, there are no quantitative estimates of surplus for the stocks under consideration, thus STECF cannot provide an opinion for these stocks. For Greenland halibut, the TAC is larger than the TAC at F_{MSY}.

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

   Greenland halibut, Northern shrimp, cod and redfish are fished by EU fleets. STECF notes that the EU catches relative to the total catches reach up to 63% (Greenland halibut East Greenland), but remain on a low or medium level (0.4 to 40%) for most stocks. Short- or medium-term projections are either not possible or uncertain due to limited data availability. For Atlantic halibut, relatively high TACs (West: 1200t, East: 2000t) had been agreed but only small catches (West: 6t, East 61t) were registered.

4) Closed seasons or closed areas which could be defined

   Seasonal and/or area closures currently apply for some stocks: Greenland cod, to protect spawning aggregations and upcoming year-classes; pelagic redfish, by NEAFC measures to protect females during larval extrusion; capelin, on an ad-hoc basis to protect juveniles; Northern shrimp in NAFO 0+1, to protect cold-water corals; snow crab.

Potential cod by-catch measures are proposed for demersal fisheries on redfish and Greenland halibut.
STECF regards these measures as justified and useful. STECF notes, however, that the Greenland cod area restrictions had been suspended for the 2011 fisheries.

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

   STECF acknowledges that Greenland, not being an EU Member State, has established procedures that are in accordance with the objectives of MSFD descriptors 1, 3, 4 and 6.

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

   STECF notes that reference points related to MSY have only been defined for Greenland halibut off East Greenland, where present F is twice as high as F_{MSY}.

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

   STECF notes that the share of catches of the EU fleets relative to overall fishing activities range from minor to significant (see observations under point 3).

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

   STECF acknowledges that ICES, NAFO and national authorities undertake every effort to ensure the best available methodology being used on the available relevant data.

7. INTERNATIONAL WATERS

7.1. Request for a surplus assessment for all the stocks covered by the EU-RIM FPA (Morocco, Mauritania and 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 (JSCs) established by the mixed agreements, which include scientists from the EU and the third countries. For the agreements with West African countries, the

JSCs base their advice on available data and information, and also on reports released by the FAO Fishery Committee for the Eastern Central Atlantic (CECAF), in particular its Scientific Sub-Committee and the Working Groups.

During its Summer 2011 plenary meeting, STECF tried to clarify the concept of surplus, based on the definition given in article 62 of the UNCLOS and suggested a possible methodology to carry calculations out.

To support discussions among contracting parties of these FPAs, assessment of surplus levels appears as an essential issue. However, in addition to uncertainties linked to the stock assessment process and to the models used to deliver the scientific advice of the stock status, it appears also highly difficult for scientists to deliver an opinion on surplus values in absence of clear management reference points and of harvest control rules.

That's the reason why the European Commission would like to ask the STECF plenum to assess surplus values deriving from different management strategies supported by two specific management reference points.

Terms of Reference

The STECF is requested to calculate total and available surplus for all the stocks covered by the EU-RIM FPA, by implementing both

- the methodology agreed by the STECF plenum during its Summer 2011 plenary meeting and made available in its report PLEN 11-02, and
- the methodology suggested for small pelagic species by the FPA EU-RIM's CSC during its 2011 meeting and made available in an annexed document to its 2011 report (to be released by 30.10.2011).

In absence of clear guidance given by the Coastal State in terms both of management objectives and of management strategies, when relevant, the STECF is requested to run these methodologies according to the following reference objectives and possible management scenarii:

- Management reference points : the fish stocks should be sustainably exploited at levels corresponding to either
  - F_{MSY}, or
  - $F_{0,1}$.

- Management scenarii will be based on variation of standardized fishing effort corresponding

  - to the fleet segments flying the flag of the coastal State (Mauritania) considered as a whole and to the fleet segments flying the flag of third countries considered as a whole (including EU segments and even third coastal countries segments sharing same stocks), when calculating
  - the ratio f/fMSY, and
  - the total surplus potentially allowable for external fleets in Mauritanian waters, or

  - to fleet segments flying the flag of the coastal State (Mauritania) considered as

a whole and to the fleet segments flying the flag of non-EU third countries considered as a whole (even of third coastal countries segments sharing the same stocks), when calculating the available surplus potentially allowable for EU fleets in Mauritanian waters.

In such scenarii, standardized effort should fluctuate from 0% to 200 % of the current standardized fishing effort, according to steps of 10 %.

Results will be introduced according to the following matrix :

1 – Values of f/fMSY according to the change in fishing effort of national and external fleet segments

External fleet segments: Future standardized effort / Current standardized effort	**Segments mauritaniens :** effort standardisé / Effort standardisé actuel																			
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%	150%	160%	170%	180%	190%	200%
0%																					
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150%																					
160%																					
170%																					
180%																					
190%																					
200%																					

2 – Value of sustainable catches according to changes in fishing effort of the mauritanian fleet segments and of external fleet segments

External fleet segments: Current standardized effort / Current standardized effort	Mauritanian fleet segments: future standardized effort / Current standardized effort																			
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%	150%	160%	170%	180%	190%	200%
0%																					
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140%																					
150%																					
160%																					
170%																					
180%																					
190%																					
200%																					

3 – Value of the Ue available surplus according to the future effortdeployed by Mauritanian fleet segments and non-Ue external fleet segments

Non-Ue external fleet segments : future standardized effort / Current standardized effort	Mauritanian fleet segments : future standardized effort / Current standardized effort																			
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%	130%	140%	150%	160%	170%	180%	190%	200%
0%																					
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When estimations of MSY of $C_{0,1}$, which will be needed to calculate subsequently total and available surplus, will concern stock distributed more largely than in Mauritanian waters, and when subsequently assessing part of the MSY or of the $C_{0,1}$ which would have to be allocated to Mauritanian waters, the STECF will be asked either

- to implement the method suggested by the EU-RIM FPA's CSC , or
- to suggest and express its own method to do so.

Available material

The following three reports prepared under the STECF framework for ad hoc contracts were available to STECF and presented to its 37th plenary meeting in July 2011:

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.

In addition, the following additional documents were made available during the plenary:

1) Summary of Report from the project "Contribution to the Sustainable Management of Cephalopod Resources in the Mauritanian Economic Zone" by E. Balguerias and A.P. Solari.
2) Document to support the use of the excel file given below "A – Parameters of the Schaefer model used in the "CECAF – Pedro de Borros" software. This document was prepared by EU Commission.
3) FAO working group on the assessment of small pelagic fish off northwest Africa. FAO Fisheries and Aquaculture Report No. 975. ISSN 2070-6987. 263 pp.
4) Anon 2011. Rapport du Groupe de travail FAO/COPACE sur l'évaluation des resources d'emersales – Sous-groupe Nord. Agadir, Maroc, 8-17 février 2010. Organisation des nations unies pour l'alimentation et lagriculture. Rome, 2011.

In addition, STECF obtained two spreadsheet models from EU Commission, which included a fitting of the Schaefer and Fox models to O.vulgaris fisheries data sets of Mauritanian fisheries (Spanish fleet and Mauritanian fleets). This worksheet allow users to fit the surplus production model according to two options and to calculate a surplus available for the European fleets according to optional scenarios of changes in the fishing efforts of the coastal and non-UE foreign fisheries.

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

STECF response

In its plenary of July 2011 (STECF-PLEN 11-02), STECF proposed a method to estimate the maximum available surplus to EU fisheries that was based on:

model estimates of BMSY,
current estimated biomass in the stocks,
model estimates of equilibrium catches
the reported catches of the latest years for all contributing countries and fisheries.

Based on equilibrium assumptions, the method provides estimates of the total surplus and of the fraction of this surplus available for EU fleets, according to a theoretical long-term objective of achieving Fmsy, assuming the fishing effort remain constant for coastal and non-EU foreign fleets.

STECF reiterates the following comments from 37th plenary meeting in July 2011 (STECF-PLEN 11-02)**:**

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 should be noted 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.

In addition to the conclusions made in 37th plenary meeting in July 2011, STECF notes that there are at least the following potential problems that need to be taken into account when assessing the relevance of the rule to assess the surplus both from a scientific and policy perspective:

1) Surplus are estimated under equilibrium assumptions while HCR will usually need to be applied years after years in situations of non-equilibrium, which creates a problem in estimating how the harvesting rate should be changed over time to achieve MSY and biomass corresponding to MSY.
2) all available material suggests, that the overall catches are not reported. If this is the case, the proposed method to estimate surplus available to EU fleets may lead to or maintain overfishing.
3) the data used for the assessments cover only a limited number of years resulting in a lack of contrast in the data. Both low and high exploitation rates are required to be able to detect the responses of the stock and consequently be able to estimate MSY by the methods used by the CECAF WGs.

4) the latest data used in the stock assessment is from the year 2008, which means that the estimates do not describe the current biomass and future biomass cannot be reliably predicted in the short term.
5) The fitting of the assessment model is currently based only on commercial data assuming that at least one of the fleet segment exhibits constant fishing efficiencies over the whole period. This assumption is likely to be wrong, and trends in fishing efficiencies could bias the diagnosis leading to over-optimistic conclusions on stock status.

STECF conclusions

STECF concludes that much of the existing evidence suggest that the vast majority of assessed stocks off the coast of West Africa are overexploited with respect to MSY. To maximise the surplus to the EU fleets exploitation rates need to be reduced. This implies that for such stocks, any surplus that can be caught must be limited by the need to rebuild stock biomass towards BMSY.

In the event that exploitation rates can be reduced, then appropriate mechanisms can be employed to assess the available surplus. At present the data and knowledge-base is insufficient as a basis for predicting surplus in the short -term. Hence, STECF is unable to reliably estimate the surplus fishing opportunities for the EU fleet at this time.

Considerations for the long term development of the stock assessment and management negotiations

There is a need to assess the potential of any HCR to deliver management objectives and to propose further improvements if necessary. In particular, the HCR needs to be tested to ensure that it is likely to deliver management objectives in cases where a stock is already overexploited with respect to MSY objectives, and the overall catches are under-reported. If a HCR can be devised to fulfil such criteria, it should lead to improvement in stock status and at the same time, help to achieve the aims of the Marine Strategy Framework Directive in a reasonable time scale.

STECF suggests that the task of developing the appropriate HCR is given to a group of experts that included both the experts of the fisheries in question and access to the data, and expertise of testing harvest control rules by simulation models to test the combinations of assessment model options and suggested harvesting rules to exploit surplus. Similar approaches would also be appropriate to assess HCRs developed for fisheries in other areas e.g. in Greenland EU fisheries (see Section 8.8.).

The possible ways to improve the estimates and to assess the impact of EU fisheries include:

1) improvement of data collection in all countries and make this data available.
2) development of models that are based on the life cycles of the species involved and on all available information. As there are no case-specific data for all parameters involved, the use of prior knowledge from similar stocks/species from other areas would be an appropriate way forward. The same models will also provide estimates of uncertainty in the assessment results.
3) assessing the use of TACs and quotas, technical measures and/or marine protected areas to complement the current management plans.
4) HCRs that are based on fishery-independent instead of, or in addition to, the use of fishery dependent catch data.

5) developing the management plans that take into account the aim of reaching MSY and the impact on ecosystem. Moreover, the socio-economic impacts of the EU fleet on the local communities needs to be evaluated.

8. WESTERN WATERS AND THE NORTH SEA

8.1. Request for an STECF opinion on the fulfilment of the conditions for exclusion 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 cod plan 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 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).

In May 2011 the United Kingdom authorities provided data to the Commission on the activity of the aforementioned vessels in 2010. On the basis of these data, at its 37th plenary meeting held in July 2011 the STECF was not able to advise on whether the group of vessels concerned had on average caught less than or equal to 1.5% cod as it was not clear whether and to what extend the vessels activity and the observed trips represent fishing activity in the Minch and the Firth of Clyde. To address the shortcomings identified by the STECF, in August 2011 the United Kingdom re-submitted a more complete dataset in the format prescribed by tables 1 and 3 of Annex I of Commission Regulation (EU) No 237/2010.

Terms of Reference

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.

STECF response

STECF observations

STECF observes that the data submitted by the UK in August covers calendar year 2010 despite our request that they submit data from 1/2/2010 to 31/1/11, the period to which the management year corresponds.

STECF notes that in 2009, when the UK requested exemption for these two groups of vessels, PLEN-09-03 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.

The new Table 1 provided by the UK contains monthly landings records for 51 TR2 vessels; in Table 1 no discards are recorded. For 41 of these vessels, records refer to fishing activity in the Minch, and for 3 (different) vessels to fishing activity in the Firth of Clyde. Only 3 records (all referring to the Minch) report any cod landings; one vessel landed cod in one month, contributing to 0.4% of the total vessel's landings from the Minch that month, and another vessel landed cod in two different months, respectively contributing to 1.4% and 1.3% of the total vessel's landings from the Minch in those months.

The new Table 3 provided by the UK contains observer information for 16 trips: 14 trips by 12 vessels in the Minch and 1 trip by one vessel in the Firth of Clyde; these vessels had records of fishing activity in the Minch and the Firth of Clyde respectively in Table 1. 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 reported effort of each vessel. Overall, the observer coverage according to Table 3 is 0.6% of total reported effort in the Minch reported in Table 1 and 0.3% of total effort in the Firth of Clyde reported in Table 1. STECF notes that the total effort summed per vessel as reported in Table 1 does not correspond to the total effort reported for the same vessels in Table 3; because of this discrepancy it is not clear to STECF to what activity exactly the data refer.

Among the 14 trips in the Minch cod catches ranged from 0 to 20 kg (all discarded) representing 0%-2% (on average 0.37%) of the total trip catches. Among 10,000 bootstraps of the 14 samples the average never exceeded 1.5%. (The bootstrap code is provided below).

The observed cod catch (which was discarded) of the one trip in the Firth of Clyde amounted to 1 kg representing 0.2% of the total trip catch.

STECF conclusions

Because only one trip in the Firth of Clyde was sampled, STECF cannot conclude anything about the statistical probability that during the 2010 fishing season the group of vessels fishing in the Firth of Clyde on average caught less than or equal to 1.5% of cod compared to the total catches.

With respect to the Minch, STECF advises that 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 on average caught less than or equal to 1.5% of cod compared to the total catches.

STECF considers that the bootstrap analysis described above is more appropriate than the analysis reported in July (STECF-11-02) of the French observer data from 8 high-sea trawlers (gear category TR1) targeting saithe in the North Sea. Of these vessels respectively 11 and 8 trips were observed in 2009 and 2010. The average percentage of cod (of the total trip catches) of the 11 trips in 2009 was 1.00%. Bootstrap analyses of the 11 trips' data indicate that the average percentage of cod exceeded the 1.5% threshold in 5% of the cases. The average percentage of cod of the 8 trips in 2010 was 2.39% and bootstrap analyses indicate that the 1.5% threshold is exceeded eight out of ten times.
In the light of the latter result, the statement in STECF-11-02 Report that '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%' remains valid.

Bootstrap R code

```
# Obs is a vector of estimates of proportion of cod in catches,
# replace the values in the example with your data
# Check that the Bootn and Limit are acceptable values or replace and then run the 7 active lines of code
Obs =c(0.014656,   0.004065, 0.000000, 0.013185, 0.004306, 0.007591, 0.001903, 0.014494, 0.011185, 0.003911, 0.034917)
Bootn=10000  # an arbitary number of boostraps suggest at least 1000
Limit=0.015  # the boundary value you need to test against default value is 1.5%
Nobs=length(Obs) # Number of observations supplied by MS
# create a resample array of bootstraps to match the number and values in observation vector
boot=array(Obs[sample(seq(1:Nobs),Nobs*Bootn, replace = TRUE)],dim=c(Nobs,Bootn))
# calculte probability of the estimated mean being greater than the limit value
bprob=sum(apply(boot,2,mean)>=Limit)/Bootn
print(paste("probability of exceeding the limit of ",Limit," = ",bprob))
```

8.2. Assessment of the TR1 effort group, regarding its homogeneity

Background

Gear groupings are defined in the Annex I of Council Regulation (EC) No 1342/2008 (the cod plan). The number of size of effort groups shall be cost efficient in terms of management burden relative to conservation needs. During the last few years the Commission has received requests from MS to consider possibility to split the fishing effort group TR1. Those Member States considers that this gear grouping is too big. Therefore splitting it would better represent the fishing activity of different metiers within that gear grouping. One of the proposals received suggests splitting the TR1 gear grouping in two TR1 (100-120mm) and TR1 (>120). Preliminary assessment reveals that CPUE and catch composition significantly differs between those two mesh size categories. Article 31 of the cod plan foresees possibility for the Commission to modify the gear groupings on the basis of STECF advice and number of principles set out in that article, like ensuring that groups are laid down as homogeneous as possible.

Terms of Reference

The Commission requests STECF to advice on:

- whether the TR1 gear grouping complies with the principles set out in the Article 31 for defining the gear groupings;
- if there is evidence that the TR1 gear grouping is not homogeneous, whether it would be appropriate to split it in order to respect those principles and what would be the appropriate split;
- describe pros and coins and possible consequences for such split, like whether there is danger that this split would crate more favourable conditions for smaller mesh size and by that would lead to move of the activity from the fishery with bigger mesh size to smaller one, or possible increase of discards

The assessment should be done also for each Member State concerned to identify what would be the consequences on their fleet.

STECF observations

The principals defining the formulation of gear groupings (article 31, 1342/2009) is as follows.

Based on the advice of STECF, the Commission may amend the Annex I to this Regulation in accordance with the procedure laid down in Article 30(2) of Regulation (EC) No 2371/2002 and on the basis of the following principles:

(a) effort groups shall be laid down as homogeneously as possible with respect to the biological stocks captured, the sizes of fish captured either as target or as by-catch and the effects on the environment of the fishing activities associated to the effort groups;

(b) the number and size of effort groups shall be cost-efficient in terms of management burden relative to conservation needs.

Under annex 1 of 1342/2009, TR1 is defined as any towed gear using a cod-end mesh size equal or greater than 100mm.

1. Gear groupings

(a) Bottom trawls and seines (OTB, OTT, PTB, SDN, SSC, SPR) of mesh:

TR1 equal to or larger than 100 mm,

TR2 equal to or larger than 70 mm and less than 100 mm,

TR3 equal to or larger than 16 mm and less than 32 mm;

Given the diversity of gears contained within the mesh band and the spatial and temporal differences in the fisheries contained within the mesh band, there is no a priori reason to expect that the fisheries would be homogenous. An analysis of cod CPUE and catch composition by area and then by Member State has been undertaken to investigate the degree of homogeneity between mesh bands 100 to 119mm and >120mm.

STECF notes that the amount of fishing effort associated with TR1 fleets is highly variable across cod management areas (figure 1). There is very limited TR1 activity in the Kattegat (management area 3A) and in the Irish Sea (3C). In contrast the use of TR1 in both the North Sea (3B) and the West of Scotland (3D) is significant. Therefore the potential to split TR1 into two mesh bands substantively affects only two management areas. Within the North Sea, effort is broadly split in two between TR1 fleets using 100 to 119mm (TR1 S) and mesh sizes greater than 119mm (TR1 B). While in the West of Scotland, the effort is dominated by TR1 S.

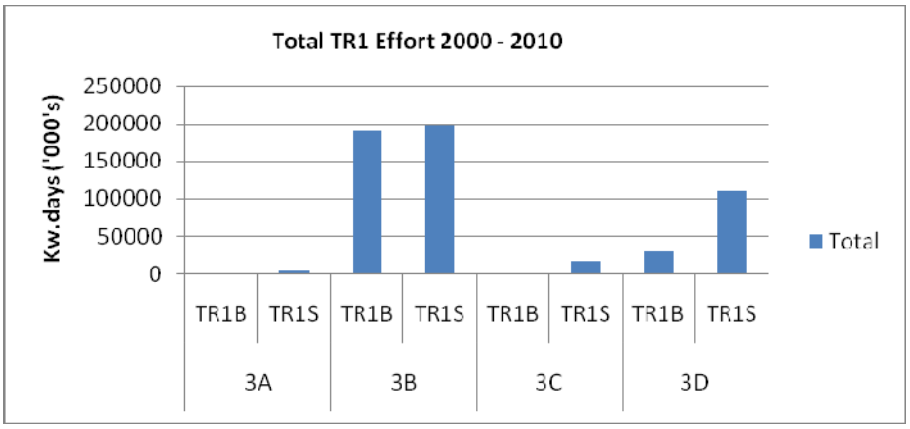

Figure 8.2.1. Aggregated effort (2000-2010) by TR1 vessels by cod management plan area broken down by vessels using mesh sizes 100 to 119mm (TR1 S) and vessels using mesh sizes greater than 119mm (TR1 B).

Figure 8.2.2 shows that in areas where there is significant TR1 effort (3B and 3D) TR1 B has a higher CPUE in comparison with TR1 S.

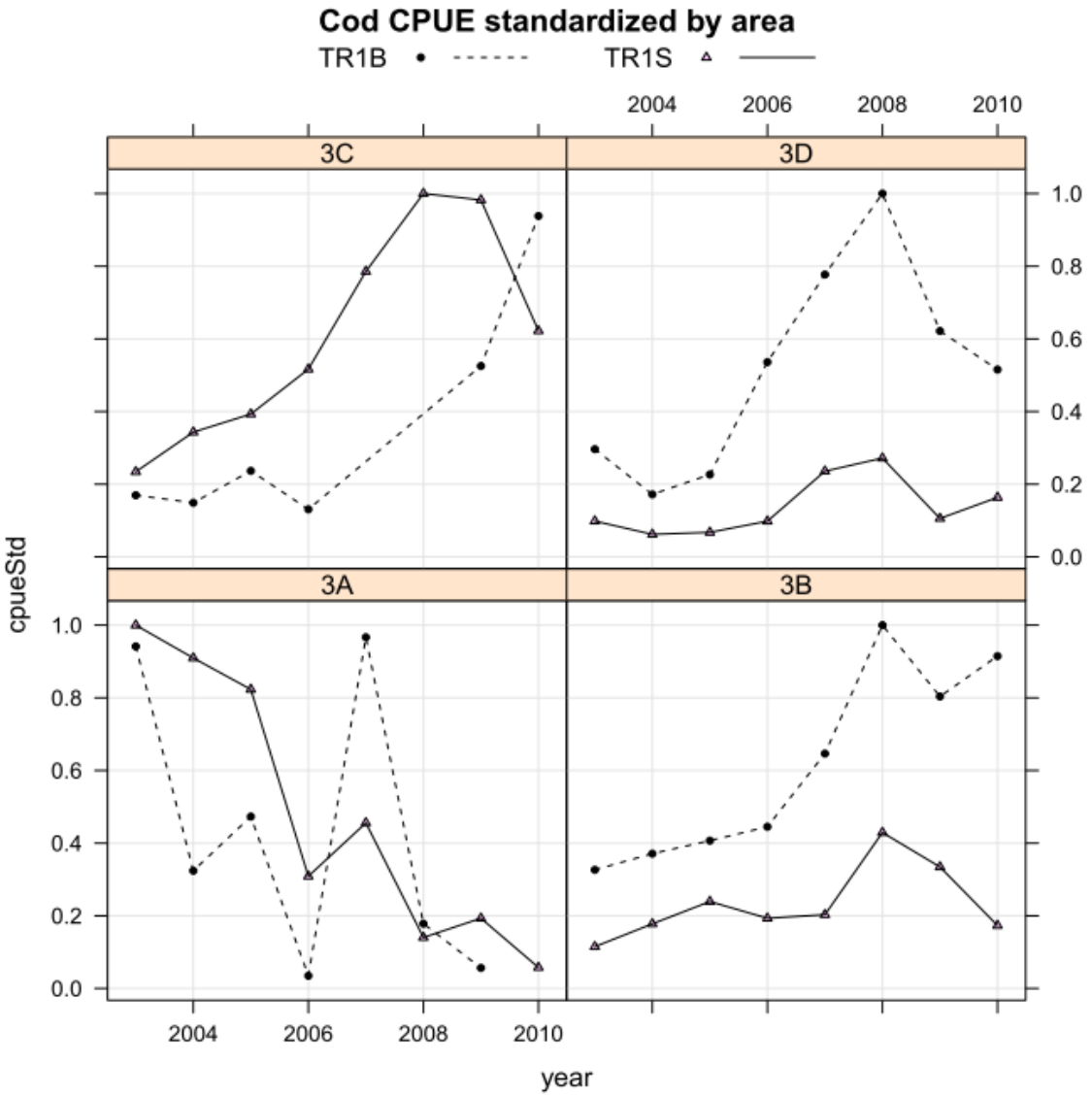

Figure 8.2.2. Standardised cod CPUE trends by TR1 vessels using mesh sizes between 100 and 119mm (TR1s) and mesh sizes >119mm (TR1b) by cod management plan areas defined under 1342/2008 annex IIa.

When disaggregated by Member State (Figure 3) the picture is generally similar, with TR1B having the greater cod CPUE.

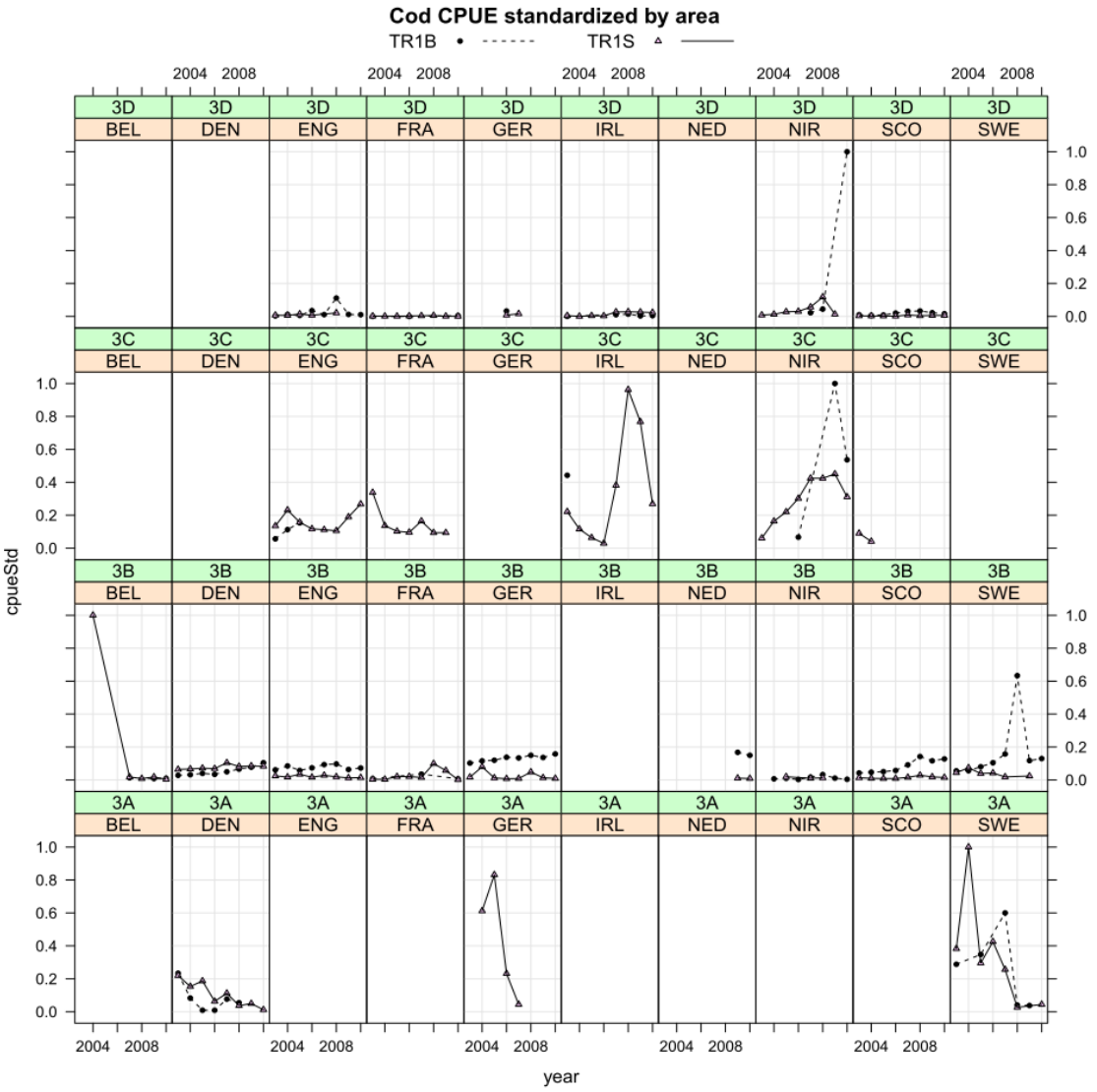

Figure 8.2.3. Standardised cod CPUE trends by TR1 vessels using mesh sizes between 100 and 119mm (TR1s) and mesh sizes >119mm (TR1b) by cod management plan areas defined under 1342/2008 annex IIa by individual Member State.

Investigation of catch data aggregated across all fleets in a given area shows that the relative catch by dominant species composition by species for fleets using mesh sizes between 100 and 119mm and those using greater than 120mm shows that the pattern is not stable within or between areas (Figure 8.2.4).

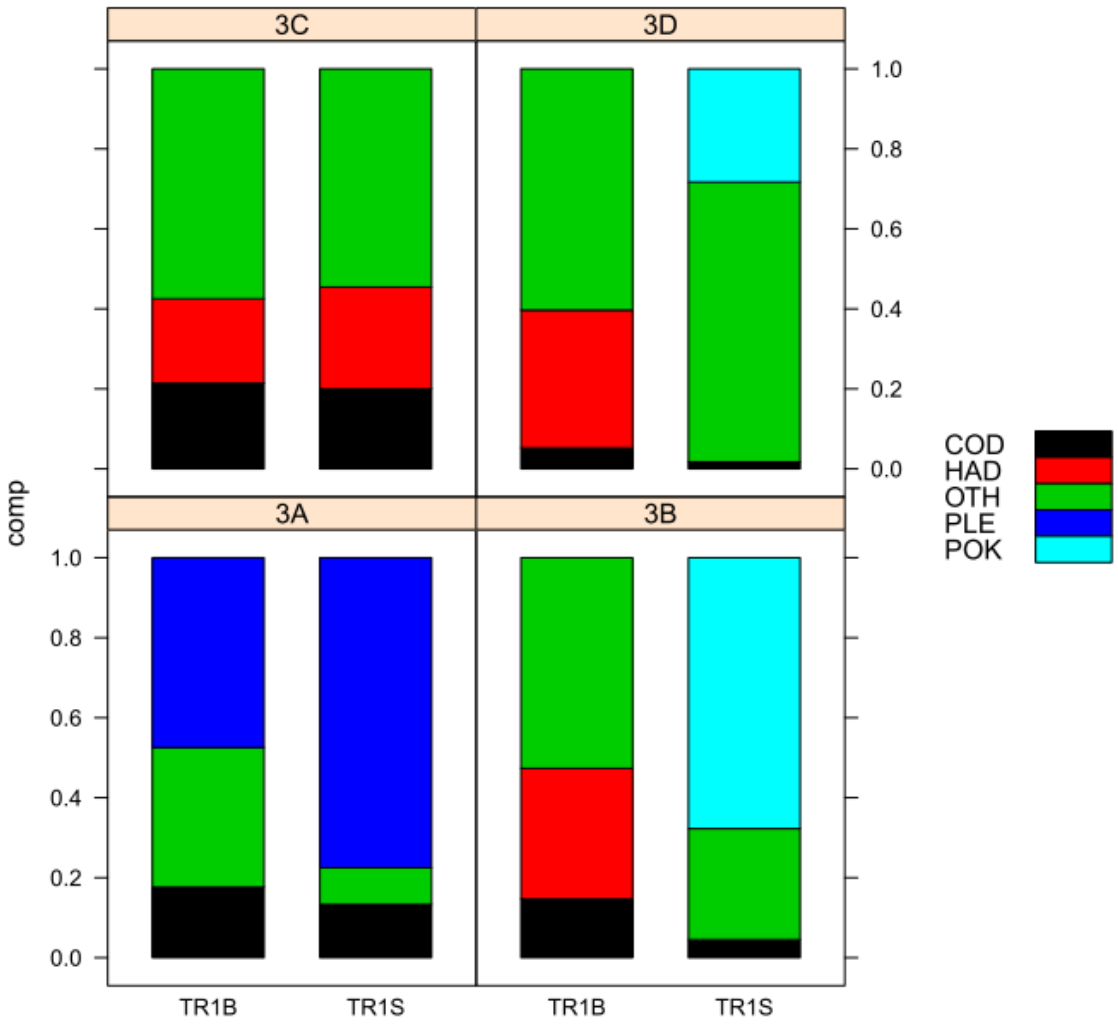

Figure 8.2.4. Breakdown of proportional catch (main dominant species and cod) by TR1 broken down by TR1 S (100 – 119mm) and TR1 B (>119mm) by area.

Where there is significant TR1 effort (3B and 3D), there is a clear difference in the catch composition between TR1 S and TR1 B. In 3B, TR1 S is dominated by a wide range of species and saithe, while TR1B there is no saithe and a significant contribution made by haddock. The pattern in 3B is quite similar. Due to the lack of homogeneity between TR1B and TR1S in management areas 3B and 3D, on first inspection there is scope to consider a sub-division of the TR1 gear group. However, an analysis of catch composition broken down by Member State shows that picture is complex and highly variable across areas and Member States (Figure 8.2.5).

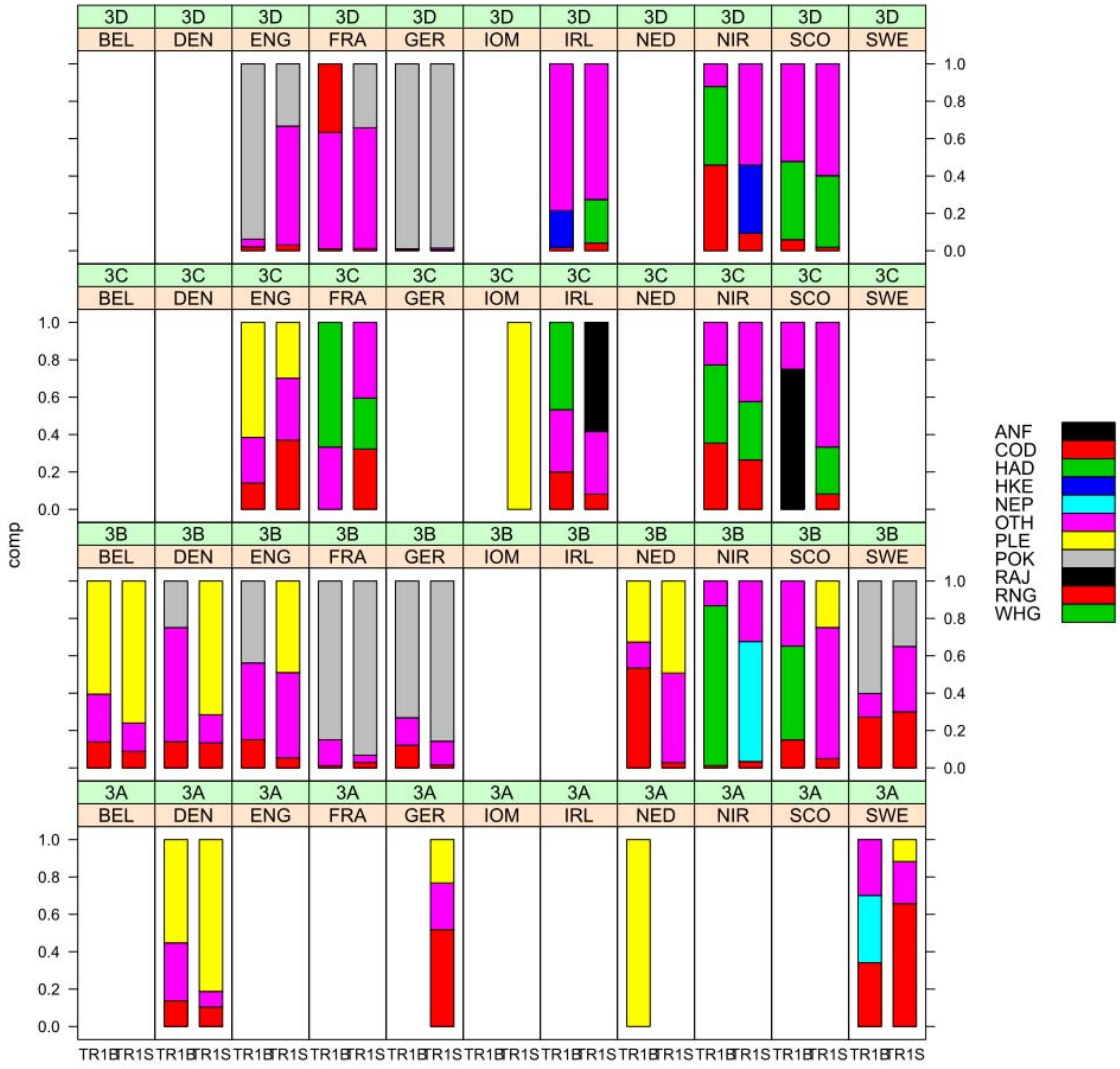

Figure 8.2.5. Breakdown of proportional catch (main dominant species and cod) by TR1 broken down by TR1 S (100 – 119mm) and TR1 B (>119mm), by area and Member State.

In some areas and for some Member States there is little difference in the composition between TR1B and TR1S e.g. FRA and SCO in 3D, whereas in others there is clearly a difference in catch composition e.g. SCO and ENG in 3B.

STECF conclusions

> *Whether the TR1 gear grouping complies with the principles set out in the Article 31 for defining the gear groupings;*

STECF notes that article 31 considers that "*effort groups shall be laid down as homogeneously as possible with respect to the biological stocks captured, the sizes of fish captured either as target or as by-catch and the effects on the environment of the fishing activities associated to the effort groups*"

The analysis presented here is based solely on a contrast of species composition based on catch weight profile and does not consider fish size or the effects of individual fisheries on the environment. STECF notes that in order to consider possible differences in fish length and environmental impacts are more detailed study is required. What is clear is that the degree of homogeneity between areas and across Member States varies considerably. In some cases it can be concluded that the fisheries are indeed homogenous while in others this is clearly not the case so that the case for making a split requires to be made on a case by case basis.

> *"If there is evidence that the TR1 gear grouping is not homogeneous, whether it would be appropriate to split it in order to respect those principles and what would be the appropriate split"*

If we assume the split is based on mesh size, in its preliminary analysis, STECF has assumed the split to be based on mesh bands of 100 to 119mm and >120mm based on the request. In order to investigate other alternative splits, then a more detailed analysis is required. STECF is not in a position advice on the appropriateness of making a split where there is evidence of non-homogeneity. Given the large number of cases where this exists as this becomes a question of the acceptable management burden.

> *"Describe pros and coins and possible consequences for such split, like whether there is danger that this split would create more favourable conditions for smaller mesh size and by that would lead to move of the activity from the fishery with bigger mesh size to smaller one, or possible increase of discards"*

STECF notes that splitting the TR1 gear group could result in behavioural changes in fleets that have unintended consequences. STECF notes that TR1S has a lower cod CPUE than TR1B. If this results in a higher effort allocation for the smaller mesh group, this could potentially incentivise a shift towards this group. While this will have the advantage diverting effort away from a higher cod catching fleet, this will have the unintended consequence of reducing selectivity.
Increasing the number of gear groupings increases management burden and require an increase in catch sampling.

8.3. Requests for assessment of the technical characteristics of the gear in relation to possible UK request in future for exclusions in application of Article 11(2) of Regulation (EC) No 1342/2008

Background

Article 11(2) of Council Regulation 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 requests by Member States to the European Commission, the STECF has since 2009 assessed vessel groups from number of Member States against the criterion 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 vessel exclusions under the cod plan has taken into account the STECF's concept of technical and/or biological decoupling and also accepts vessel exclusions based on

distinct vessel group activities or characteristics that result in current cod catch rates below 1,5% within the vessel group concerned.

To reduce discards rates of whitefish in the Nephrops fleet operating in the North Sea with TR2 gear, UK investigated the effect of the flexible grid. The set of the catch comparison trials were conducted in 2010 and full report on the trial was submitted to the Commission. UK has been considering requesting exclude a group of vessels from the effort regime and this information will serve as supporting material for it. The group of vessels has not been defined yet. Nevertheless UK would like to know whether the characteristics of the gear would comply with of the concept technical decoupling.

Terms of Reference

The STECF is requested to evaluate the UK report on the effects of fitting a Nephrops trawl with a flexible grid in light of potential UK request for exclusions of groups of vessels from the cod effort regime in future, as laid down in Article 11(2) of Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks.

STECF is requested to advice on the following:

1) To what extent does the data and information provided in relation to the technical characteristics of the flexible sorting grid support the conclusion that catches of cod by such gear will be less than or equal to 1.5% from the 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.

STECF response

STECF observations

The UK produced a report on sea trials dedicated to evaluate the selectivity of a flexible grid in the TR2 nephrops trawls. The main goal is to reduce Scottish discard rate especially of whitefish. The flexible grids have been chosen to address handling concerns raised by previous rigid Swedish grid trials.

Two flexible grids have been tested (i) a full grid and (ii) a grid with three large gaps (180 x 200mm) at the bottom expected to allow benthic material through into the codend to avoid a build-up on the grid. These two grids have a bar spacing of 45mm and are constructed from polymer chosen for its toughness and resistance to stress deformation. During the trails, it appears that the gird with gaps was the more appropriate for the fishery concerned to solve most of practical problems related to build up of benthic organisms encountered when using grids.

The results presented are based on only one fishing trip. During this trip 22 hauls have been undertaken with the grid with gaps of which 14 were valid hauls.

For cod, when using the grid with gaps and in comparison to the commercial gear there was a 27% catch reduction for small cod (<23cm). At 35cm (MLS) there was an 84% reduction in catch. At

41cm there was 92% reduction and by 46 cm (max landed size) there was 96% reduction. The total catches of cod in weight made during the trials have been reduced by 97% and by 81% in number.

Globally, for cod, haddock and whiting there was a 88% catch reduction in weight and 78% in number.

There are no significant losses of *Nephrops* < 44mm carapace length. Approximately 20% at 50 mm and 57% at 60 mm by number were lost through the vent hole. In these trials it is estimated that there was 10% reduction by overall weight.

Results show that the grid is very efficient in excluding large whitefish from the catch and less efficient for the small individuals.

During the sea trials, the total weight of cod represented 1.26% of the total catch of the trawl fitted with the grid. For the trawl without the grid cod accounted for 20% of the total catch.

STECF conclusions

STECF notes the general high selectivity of the flexible grid-equipped-net for whitefish. The use of flexible grid reduced the whitefish by-catch by 88% in weight and should significantly reduce discards of those species.

STECF notes that based on the UK report, during the sea trials the catches of cod were below 1.5% in accordance with Article 11.2 of EC Regulation 1342/2008.

Although the grid delivers an overall reduction of cod in the catches, there is no guarantee that the amount of cod in the catches will always be less than 1,5% of the total catch by the vessels concerned. The rate is dependent on (i) the populations of cod especially the proportion of small cod (ii) the populations of other whitefish and (iii) the total weight of *Nephrops* caught.

STECF considers that due to its high selectivity the flexible grid could be a good candidate for the exclusion from the fishing effort regime for vessels targeting *Nephrops*.

STECF recommend that if when using such gear vessels are excluded from the fishing effort regime they have to use it at all times of the year when targeting *Nephrops*. That exclusion should not be considered as a solution to continue fishing *Nephrops* after reaching the maximum days at sea with the standard trawl. In that case the exclusion of that gear from the fishing effort regime could contribute to increase fishing effort, catches and discards of cod and other whitefish.

STECF considers that the grids should be constructed from material chosen for its toughness and resistance to stress deformation, similar to the properties of the material used during the UK trials, to ensure a high level of selectivity.

In the absence of other available information, STECF suggests, as tested during the UK trials, the use of a maximum bar spacing of 45mm and a maximum dimension of the bottom gaps of 180 x 200mm. The grid should be fitted in the net as described for the Swedish grid in EU Regulations.

8.4. Request for an STECF advice whether the measures of the NL cod avoidance plan can be regarded as sufficient for a permanent transfer of kW-days

Background

In 2007 and 2008 many Dutch beam trawl vessels made a transition to the use of demersal trawls. The Council Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks (the cod plan) did not take this transition into account. Due to this transition the baseline (2004-2006) has been established by up to 70% lower than actual utilisation of kW-days by TR2 gear in 2008. Thus NL requested in 2009 to shift the fishing effort from beam trawls (BT2) to demersal trawls (TR1 and TR2) on a 1 to 1 basis, in order to take into account the transition of 2008 in the Dutch fleet.

In this regard, during the 2009 December Council following statement has been adopted:
A Member State may transfer effort from one gear to another once it has informed the Commission about the catches per unit of effort of the respective gear groups. The calculation of transfer should be based on that information. The Member State may implement the effort transfer taking into account also technical measures introduced for cod avoidance, so that the still higher catch per unit of effort in the receiving gear group is compensated for. The Commission accepts that for a fleet segment that has undergone a structural change in its fishing activities, the transfer of fishing effort may become of permanent nature. It is then prepared to propose a revision of the effort allocation accordingly once the information on the catch data has been provided.

In 2011 NL has notified the Commission about implementation of their cod avoidance plan in the geographical area b (the North Sea) of the cod plan. The cod avoidance plan contains number of measures like real time closures, seasonal closures, gear adaptations, move on measures, participation in fully documented fishery and self sampling. The Dutch cod avoidance plan has two aims:

- Permanent transfer of the fishing effort from BT2 gear grouping to TR1 and TR2 gear groupings on 3:1 basis, justifying it by the introduced cod avoidance measures;
- Increase of the fishing effort allocation for vessels in TR1 and TR2 gear categories, in accordance with Article 13(2)(b) and (c).

Terms of Reference

Based on the information provided by NL in relation to their request for effort transfer and effort increase, the STECF is requested to assess the effectiveness of the cod avoidance measures undertaken by the Dutch authorities. In carrying out its assessment, the STECF is requested to advice whether those measures can be regarded as sufficient for the permanent transfer of the fishing effort between gear groupings concerned as proposed by NL on 3:1 ratio. In carrying out its assessment, the STECF is requested to advice on possible impact on cod mortality if such transfer would be made.

In addition, because the Dutch Cod Avoidance plan in the North sea also aims for increase of the fishing effort in accordance with Article 13(2), STECF is requested to assess, to extent possible, whether impact of the measures foreseen in that plan would likely result in adequate reduction of the cod mortality.

STECF Response

The information available to the STECF on the Dutch Cod Avoidance plan and transfer of fishing effort from BT2 to TR1 and TR2 included:

- a letter to the Commission describing the background for the cod avoidance plan, the measures adopted from the 11th July 2011 and the transfers of KW-days.
- an ex-ante evaluation carried out by the Institute for Marine Resources & Ecosystem Studies (IMARES) of the closures and the move on measures included in the cod avoidance plan
- a description of the fishing effort, landings, discards and cpue for the fleets involved
- a description of a monitoring program.

To address the terms of reference STECF:

- reviewed the information available on the cpue by gear category to estimate the KW-days transfer factors required to avoid an increase in fishing mortality on cod following from a transfer of KW-days from BT2 to TR1 and TR2,
- evaluated the likely impact of the cod avoidance plan on the fishing mortality,

The Netherlands has a very low number of vessels targeting cod (about 8). The vessels that have switch from beam trawl to TRI and TR2 are mainly targeting flatfish and unregulated species like gurnard, mullet and squid. Cod is considered to be a by-catch in these fisheries. Two TR1 groups can be separated on a national level by making a distinction between TRI gears with a mesh size lower than 120 mm (cod taken as by-catch) and gears with a mesh size equal to or higher than 120 mm (cod fishers). The Netherlands has applied this split of the TR1 into two sub-groups TR1.1 (mesh size < 120mm) and TR1.2 (mesh size => 120 mm) and has only accepted that the vessels that have switch from BT2 to TR1 are operating in gear group TR1.1 to ensure that these vessels are not conducting a target cod fishery.

CPUE by gear category

The estimate of cpue's by TR1, TR2 and BT2, presented in the ex-ante evaluation, were based on landing- and effort information from logbooks and IMARES' estimates of cod-discard fractions by weight. The discard fraction of TR2 was based on estimates of cod-catches of twinning trawl vessels presented by Helmond and Overzee (2009)[2] and is lower than the estimates given in STECF-EWG 11-11. Discard estimates given by STECF-EWG 11-11 were used for TR1 and BT2.

No information on discards by the Dutch TR1, TR2 and BT2 gear groups has been provided to STECF-EWG 11-11 and the discard figures given in the report of STECF-EWG 11-11 for these gear groups are estimated using the average discard rate being reported for the three fleets from Belgium, UK and Germany.

For comparison STECF has recalculated the cpue for the gear groups applying the discard data estimated by STECF-EWG 11-11. The cpue for the gear groups to which KW-days are transferred divided by the cpue of BT2 are given below based on the STECF data and on the data used in the ex-ante evaluation.

To meet the requirement that the transfer of KW-days from BT2 to TR2, TR1.1 and TR1.2 will not lead to an increase in the cod catches the transfer ratios (ratio between KW-days removed from the BT2 and the KW-days added to TR1.1 and TR2 respectively) should be no less than the ratio between the cpue for the gear groups observed.

2 Helmond, A.T.M. Van Overzee, H.M.J. Van (2009) Discard sampling of the Dutch Nephrops fishery in 2007-2008 Umuiden : Centre for Fishery Research, (CVO report 09.007)

For gear group TR1.1 the transfer factor estimated using the STECF data and presented in the ex-ante evaluation is similar while the factors for transfer to TR2 differ. This is because the discard rates for TR2 are lower than the rates estimated by STECF-EWG 11-11.

	STECF-EWG 11-11 data				Data used in ex-ante evaluation			
	CPUE TR1.1/BT2	CPUE TR1.2/BT2	CPUE TR1/BT2	CPUE TR2/BT2	CPUE TR1.1/BT2	CPUE TR1.2/BT2	CPUE TR1/BT2	CPUE TR2/BT2
2006					0.4	63.4	10.9	3.5
2007					1.3	108.5	22.7	5.8
2008					1.7	38.6	8.7	2.4
2009	1.8	28.4	11.4	6.1	1.4	12.8	5.4	2.4
2010	1.7	30.5	13.5	4.9	1.8	11.8	5.7	1.8
Mean (2009 - 2010)	1.8	29.5	12.4	5.5	1.6	12.3	10.7	2.1
STECF EWG correction factor			15.6	3.8				

The Commission has requested STECF to discuss a possible endorsement of correction factors established by the STECF EWG to be applied when transferring kW days from one gear group to another. The question is addressed in section 5.2. The correction factors provided by STECF EWG are average factors by management area, while the factors given above are based on the best available data for the Dutch gear groups. The average correction factors provided for the transfer of kW days from BT2 to TR1 and TR2 are given in the table above. For comparison the correction factors are expressed as cpue for BT2 divided by cpue for TR1 respectively TR2.

Evaluation of cod avoidance plan

The Dutch cod avoidance plan includes the following measures:

- Basic Measures for TR1.1, TR1.2 and TR2
    - Real time closures, 9 closures of 64nm^2 per month, based on LPUE (highest landings of cod in 1/16 ICES quadrant). Duration closure: 1 month. In cooperation with UK Seasonal Closures during spawning season. Based on scientific egg survey. In cooperation with UK.

    - Gear adaptations
      TR1: a) 130 mm or greater cod end or b) 120-129 mm cod end and Square Mesh Panels of 90 mm or, c) Square Mesh Panels of 100 mm and greater (was 90 mm), and a catch composition of max. 20% cod.

      TR2: a)Nephrops Square Mesh Panel: the insertion of a 120 mm SMP of minimum length 3 meter in the straight extension of the net or a 130 mm SMP in the taper. The SMP must be no further than 12-15 m from the cod line or, b) large meshes in the square, directly behind the head line of at least 15 meshes of 150 mm or greater (was 140 mm) plus square mesh panel of 90 mm (was 80 mm). A catch composition of max. 20% cod.

- Additional measures applicable to cod by-catch fishers (TR2 and TR1.1)

    - Move on: trigger more than 5 % cod in two consecutive hauls. Minimum displacement 5 NM.
    - Obligatory self sampling of all cod catches. Monitoring at random by observers.

- Additional measures applicable to cod fishers (TR1.2)
    - Participation in fully documented fishery project on voluntary basis. All cod including undersized cod has to be landed. Pilot CCTV starts in 2011.
    - Obligatory self sampling for nonparticipants of the fully documented fishery project.

The ex-ante evaluation of the effect of closures on cod LPUE was conducted by modelling spatial and temporal closures for two fleets (TR1.1 and TR2), based on previous year(s) landing and effort data. The change of cod CPUE was assumed proportional to the change of cod LPUE.

In summary the conclusions of the ex-ante evaluation were:

- Reductions in LPUE can be substantial when the current year is used to inform the choice of closures.
- Reductions in cod LPUE are much less, and can remain unchanged (TRI) on average, when the previous year is used to inform the choice of closures.
- Some reductions (15%) in cod LPUE by TR2 can be achieved even when closures are informed with previous year's data. Using the previous two year's data show similar reductions.
- Reductions in TR1.1 cod LPUE was not achieved when choice of closures was informed with the previous year's data but would be substantial in the situation of real-time closures.
- The move-on measures seem to be potentially the most useful, leading to substantial LPUE reductions, but it all depends on the actual implementation of the measure.
- Setting a maximum cod-LPUE of 20-40 kg/2 hours, to trigger a move-on measure, had on average similar effects as limiting the cod fraction in the (2 hour) landings to 5%, but the variation is less.
- The effects of applying both closure and move-on measures are additive.

STECF notes that the evaluation of the likely effect of the spatial-temporal closures was based on landings assuming that discards were a fix fraction of the catch equal to the estimated average annual discard fraction. This means that the evaluation did not take into account any spatial and temporal variation in discard rates.

STECF furthermore notes that there is no discard information for cod available for the Dutch gear groups and the discard rates used in the ex-ante evaluation are average discard rates for TR1.1 gear groups reported to STECF-EWG 11-11 by Belgium, UK and Germany.

The information presented in the ex-ante evaluation was insufficient to allow the STECF to review the results of the evaluation.

No evaluation of the likely effect of the gear adaptations was available to STECF

STECF Conclusions

Under the assumption of no cod avoidance plan, the analysis of historical cpue data described above, indicates that to ensure that a permanent transfer of KW-days from BT2 to TR1 will not result in an increase in cod catches, the transfer ratio of KW days from BT2 to TR1 should be at least 11 BT2 kW days to 1 TR1 kW days. The equivalent figure based on the average cpue for BT2 and TR1 fleets for the North Sea overall, would be 16 BT2 kW days equates to 1 TR1 kW day.

However, if the TR1 gear group is split into the two sub-groups TR1.1 (mesh size < 120 mm) and TR1.2 (mesh size => 120mm) and the transfer is to the TR1.1 group only, the cpue data indicates that a transfer ratio in the order of 2:1 would be sufficient (2 BT2 kW days equates to 1 TR1.1 kW day)

For the transfer of KW-days from BT2 to TR2 the cpue data indicates that the transfer ratio should be no less than 2.5:1(2.5 BT2 kW days equates to 1 TR1.2 kW days).

Although STECF was not in the position to review the ex-ante evaluation of the possible effect of the real time closures and "move on" measures, the Committee finds it likely that the real time closures, if fully implemented and enforced, will result in a reduction in cod catches. STECF, however, considers it almost impossible to give a reliable prediction of the size of the reduction and stresses the need to have a comprehensive monitoring program in place that will allow an assessment of the effect of the measures. STECF therefore advises that the decision on whether the measures of the cod avoidance plan are sufficient for the permanent transfer of the fishing effort between gear groupings concerned be postponed until a quantitative assessment of the effect of the measures has been conducted.

STECF notes that although a full assessment has not been carried out, the gear adaptations implemented under the provisions of Article 13(2) of the cod management plan for the Dutch TR1 and TR2 fleets, are unlikely to have a significant impact on the catches of cod.

Similarly, STECF is at this stage not in the position to assess whether the impact of the measures foreseen in that plan would likely result in reduction of the cod mortality required to increase the fishing effort in accordance with Article 13(2). Such an assessment may be possible when data from the monitoring plan become available.

8.5. Advice on a potential split of the management area for blue whiting

Background

Blue whiting is assessed as a single stock from the Norwegian Sea down to Portugal. Its management is shared with the NEAFC Coastal States (EU with Norway, Russian Federation, Iceland, Greenland and Faroe Islands). The stock was heavily fished during a period when there was no international agreement, including by developing fisheries of Iceland and the Faroe Islands. Russia, Norway and EU also took large catches. The stock declined severely in abundance over the past few years, due to a combination of heavy fishing pressure and low recruitment. Following a Coastal States Agreement in 2010 -on the long-term management plan that was launched in 2008- a TAC reduction of 93% was adopted in accordance with ICES advice (precautionary approach). Quotas are allowed to be transferred among different areas.

In the Northern waters, exploitation by large vessels is predominant and the catch is mainly destined to fishmeal / industrial production. In the Southern waters, there is a sizeable small-scale fleet exploiting this stock for human consumption. As said above ICES does not assess the stock as separate components. Notwithstanding, a recent report from the Stock Identification Methods ICES

Working Group3 opens the door to separate management where signs of different populations are found under a precautionary approach. Similarly the ICES Working Group on Widely distributed stocks (WGWIDE) raised the management implications of considering blue whiting sub-stocks as an alternative to the current single stock unit4. Finally, in the same report, WGWIDE recommended that the assessment of blue whiting continues to be carried out on the combined stock, mainly due to the methodology of the assessment but under evidences of mixing.

Terms of Reference

Further to the STECF advice5 of July, the STECF is requested to:

Review the information pertaining to stock identity available for this species and report on whether there is sufficient basis to implement management measures for identifiable, separate stocks;

In case there is sufficient basis, indicate appropriate stock boundaries in terms of both management areas and proportion of catch levels for each separate stock relative to the single TAC measures so far adopted;

In case there is no sufficient basis, indicate the precise reasons, whether they relate to data availability (in which case, please indicate what research or additional data would be needed) or to biological factors (eg stock mixing).

Provide a description of the main fleets involved in the fishery, allowing to analyse the evolution of the activities over the last 10 years, with an emphasis on the distinction between fisheries carried out for the purposes of human consumption and fisheries carried out for the purposes of industrial produce (fishmeal). Provide relevant data to assess the respective impact on the exploitation of the stock and trends in the profile of these fisheries for the period in question (evolution of catches and share in the fishing mortality rates).

STECF response

A response to this request requires (i) that STECF define a 'stock' for the purposes of fishery assessment and management and (ii) that STECF review and interpret the available evidence for the existence of one or more stocks of northeast Atlantic blue whiting.

Stock definition

For the purpose of responding to this request, STECF define a stock as an assessment and management unit that shows responses to fishing that are more or less independent of the responses of other units. This is because recruitment, growth and natural mortality in the stock, and fishing mortality on the stock, have a much stronger influence on abundance and age structure than immigration or emigration. Immigration or emigration that results in the transfer of a small proportion of individuals between stocks should not affect the stock's responses to fishing on annual to decadal timescales.

3 ICES. 2009. Report of the Stock Identification Methods Working Group (SIMWG), By Correspondence. ICES CM 2009/LRC:12. 22 pp.

4 ICES. 2010. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 28 August - 3 September 2010, Vigo, Spain. ICES CM 2010/ACOM:15: 612 pp.

5 37th Plenary meeting report of the Scientific, Technical and Economic Committee for Fisheries (PLEN-11-02) https://stecf.jrc.ec.europa.eu/reports/plenary.

STECF considers that stocks of a species can be treated as units for assessment and management purposes when:

1. Their population dynamics respond more or less independently to the effects of fishing.
2. The location of actual boundaries between stocks are sufficiently stable in space and time that the stocks can, in practice, be assessed, managed and fished independently, or,
3. The effect of any instability in the actual boundaries relative to proposed management boundaries does not significantly reduce the probability of achieving management objectives for individual stocks on annual to decadal timescales.

STECF observes that if stocks of a species are identifiable but mix on a significant proportion of the fishing grounds (where significant is taken to mean grounds accounting for a proportion of the catch that could compromise progress with meeting the management objectives for any of the mixing stocks), then it is effectively impossible to manage exploitation rates independently unless individuals can be assigned to specific stock.

Otherwise, STECF observes that mixed stocks of a species would need to be fished conservatively (maximum catch from mixed stocks should not exceed the maximum catch to meet the management objectives for the most sensitive stock and should count towards the estimated catch from all mixing stocks) or not fished at all in the areas where mixing occurs.

Evidence for stock structure

Review the information pertaining to stock identity available for this species and report on whether there is sufficient basis to implement management measures for identifiable, separate stocks.

STECF observations

STECF observes that there is longstanding evidence that blue whiting show some stock structure across their overall range in the northeast Atlantic. Historically, some such structure was recognised in the ICES assessment process and the then ICES Blue Whiting Assessment Working Group assessed 'northern' and 'southern' components. The evidence for stock separation in blue whiting included morphometric and meristic differences (Isaev and Seliverstov, 1991) and the distribution of spawning grounds (Isaev *et al*., 1992). However, post 1993 the stocks were treated as one, because the Working Group considered that the evidence for persistent separation associated with a clearly defined boundary was not strong. In subsequent years, STECF observes that a range of new evidence on stock structuring of blue whiting has been made available.

Skogen *et al*. (1999) looked for evidence of separation between the two stocks, as reflected in the drift of larvae away from spawning grounds. They used a transport model and a hydrodynamic circulation model, with climatological forcing for 20 separate years from 1976 to 1995, to assess the drift of eggs and larvae. By looking at the predicted trajectories of drift, they found evidence for a separation zone north of the Porcupine Bank, with eggs and larvae north of this zone drifting to the north and eggs and larvae south of this zone drifting to the south. There was some interannual variability in the location of this zone. Skogen *et al*. (1999) proposed a separation line between a possible southern and a northern stock but suggested that it crossed the shelf break more than 200 km further north in 1976 than in 1979. They proposed that the main candidate for a transition zone is found just northeast of Porcupine Bank, where the mean predicted drift of larvae was generally low, but had a maximum standard deviation. It was assumed, but not shown at the time, that this process could reduce gene flow between northern and southern blue whiting. Larval drift was also modelled by Bartsch & Coombs (1997); although the structure of their analysis was less suited to

draw conclusions about the development and maintenance of stock structure it did imply that larvae could drift south or north, with the apparent separation zone slightly to the south of that proposed by Skogen *et al*. (1999).

Subsequent research by Brophy and King (2007) assessed the growth rates of larvae moving to the north and to the south, by sampling larval otoliths and by describing records of larval growth in the otoliths of adult blue whiting. The larvae that moved south grew faster and the otoliths of adults caught in the south indicated fast growth in the early life history. The larvae that moved north grew more slowly and the otoliths of adults caught in the north indicated slow growth in the early life history: thus adult fish from the Bay of Biscay were shown to experience different growth conditions during the larval phase from those in the Norwegian Sea, confirming that mixing between the two groups is limited. Their work did not necessarily demonstrate that (i) the eggs and larvae of adult fish that had originally migrated to the spawning grounds from areas to the south of the spawning grounds would drift south and (ii) that the eggs and larvae of adult fish that had originally migrated to the spawning grounds from areas to the north of the spawning grounds would drift north. Indeed, they comment that interannual variability in circulation patterns could result in larvae following a different trajectory from their parents, mixing with another stock component at juvenile nursery grounds and adult feeding areas, and subsequently spawning in a different location. This would result in limited gene flow under certain oceanographic conditions, and the components may not be genetically distinct even if the segregation were significant from a management perspective.

Ryan *et al*. (2005) provided evidence for genetic heterogeneity among blue whiting on the spawning grounds and Was *et al*. (2008) assessed genetic variation in samples of spawning adults collected from 44° to 60° N. Celtic Sea and Bay of Biscay fish were significantly differentiated from fish caught on the Porcupine Bank, Hebridean Shelf, Sulisker Bank, and Papa Bank. Was *et al*. (2008) demonstrated that there was significant differentiation between fish taken in different years on Rockall Bank. Was *et al.* (2008) also sought to identify barriers to gene flow and identified four zones of lowered gene flow. They identified two barriers immediately to the west of Ireland, the northernmost of which broadly coincided with the zone where hydrographic process were expected to lead to eggs and larvae north of this zone drifting to the north and eggs and larvae south of this zone drifting to the south.

While the work of Ryan et al. (2005) and Was et al. (2008) showed that there was greater complexity in the structure of the northeast Atlantic blue whiting than a simple division into 'northern' and 'southern' stocks, the information on the stability of this more complex structure is very limited and it is uncertain whether it reflects the persistence of assessment and management units that would show more or less independent responses to fishing.

In the case of the 'northern' and 'southern' stocks, STECF observed that there is a broad range of evidence for limited exchange of adults and larvae and a degree of temporal persistence in the boundary to this exchange, even if the location of the boundary may show some variation from year to year. For this reason, STECF considers that stocks defined as 'northern' and 'southern' would be likely to show independent responses to management.

Given the presence of multiple components within the 'northern' and 'southern' stocks, a mortality rate that is set for either stock is likely to affect some components more or less than others. At present, the evidence for multiple components in the 'northern' and 'southern' stocks is insufficient to provide a basis to manage any such effect.

STECF observes that in 2009, ICES ACOM advised that a benchmark for blue whiting should be postponed until the stock structure issues are clarified (ICES WGWIDE 2010). Further, the ICES

Stock Identification Methods Working Group (SIMWG) (ICES 2009) has previously recommended that the blue whiting populations in areas VIIk and VIIj and further south should be treated as a separate unit from all other NE populations.

STECF conclusions

STECF concludes that there is sufficient evidence to support the presence of two separate stocks of northeast Atlantic blue whiting and STECF therefore advises that, if technically feasible[1], northeast Atlantic blue whiting be assessed and managed as two stocks.

[1] i.e. if the current state of the 'northern' and 'southern' stocks can be estimated annually to allow separate catch options to be calculated; where such a separation may be achieved by splitting catch or by splitting the combined population using spatial indices, if available.

Stock boundaries

In case there is sufficient basis, indicate appropriate stock boundaries in terms of both management areas and proportion of catch levels for each separate stock relative to the single TAC measures so far adopted

STECF observations

STECF observe that there is sufficient evidence to indicate the existence of 'northern' and 'southern' stocks of blue whiting in the northeast Atlantic. However, there is significant mixing of these stocks on parts of the spawning grounds that are also targeted by the fishery, especially in the vicinity of the Porcupine Bank (ICES, 2010), with the consequence that catch rates, age and size composition of 'northern' and 'southern' fish in this area cannot be recorded separately.

Consistent with our observation (above) that it is not possible to manage exploitation rates on different stocks independently, unless individuals from mixed catches can be assigned to stocks, 'northern' and 'southern' fish would need to be fished conservatively (maximum catch from mixed stocks should not exceed the maximum catch to meet the management objectives for the most sensitive stock and should count towards the estimated catch from all mixing stocks) or not fished at all in the areas where mixing occurs. For this reason a 'mixing area' needs to be identified, as well as a northern boundary for the southern stock and a southern boundary for the northern stock.

On the basis of the available evidence, a southern boundary for the 'northern' stock at 53.5° N and a northern boundary for the 'southern' stock at 52.0° N would define areas where minimal mixing is expected to occur. The area to the north of 52.0° N to 53.5° N and to the east of 15° W would be an area where significant mixing of 'northern' and 'southern' stocks is expected to occur. The boundary to the north of VIIj and VIIk proposed as a stock boundary by ICES (2009) is at 52.5° N. STECF considers that a boundary at 52.5° N may mean that fish from the 'southern' stock are subject to significant mortality in the fishery for the 'northern' stock and vice versa and would not be appropriate.

STECF conclusions and recommendations

Based on a review of the evidence for stock separation in northeast Atlantic blue whiting, STECF concludes that there are 'northern' and 'southern' stocks that, if technically feasible, should be

treated as separate stocks for assessment and management. STECF concludes that the southern boundary for the 'northern' stock lies at 53.5° N and a northern boundary for the 'southern' stock at 52.0° N. The northern boundary for the 'southern' stock should extend from the west coast of Ireland to 15° W. STECF also concludes that the area north of 52.0° N to 53.5° N and to the east of 15° W would be defined as the 'mixing area' and that, in a two stock management system, this should be managed to ensure that catches from this area do not compromise the management objectives for either the 'northern' or the 'southern' stock.

Based on a review of the evidence for stock separation in northeast Atlantic blue whiting, STECF recommends the following:

1. The Commission ask ICES to undertake a benchmark assessment for blue whiting The benchmark should include an assessment of 'northern' and 'southern' blue whiting as separate stocks, where boundaries of assessment and management areas are consistent with those identified by above.

Given some uncertainty about the extent to which adults of blue whiting that migrate from the north will produce progeny that drift north, and also the extent to which adults of blue whiting from the south produce progeny that drift to the south, the benchmark assessment should consider the evidence for one of the proposed stocks being a recruitment 'sink'.

The benchmark assessment will need to carefully consider how historic are to be be assigned to 'northern' and 'southern' stocks.

2. If the benchmark assessment shows that it is technically feasible to perform separate and acceptable stock assessments for the two stocks, STECF recommends that a management plan for the blue whiting fisheries be developed that includes control rules for fixing fishing opportunities for the two stocks and addresses the management of catches from the mixing area in accordance with the management objectives for each stock.

c. In case there is no sufficient basis, indicate the precise reasons, whether they relate to data availability (in which case, please indicate what research or additional data would be needed) or to biological factors (eg stock mixing).

STECF observations

While STECF observe that the northeast Atlantic blue whiting should be treated as two stocks, both these stocks may contain further structure that is relevant to management. STECF observes that additional research on the identity of components in 'southern' and 'northern' stocks would help to provide better resolution of stock structure. STECF considers that the initial focus for this research should be on blue whiting in the 'mixing area' during the spawning period, the 'southern stock' and the spawner-recruit relationships for both stocks.

STECF observes that relevant methods for assessing stock structure would be (i) genetic analysis that is based on more comprehensive spatial and temporal sampling than Was *et al*. (2008), (ii) direct sampling and acoustics, significantly extending the coverage of Carrera *et al*. (2001) and (iii) tagging studies if suitable methods can be developed. These would be used to understand relationships between blue whiting in the fisheries of the Bay of Biscay, the Celtic Sea and spawning grounds.

STECF conclusions

STECF concludes that the detailed planning of additional scientific research to describe blue whiting stock identity should be the responsibility of ICES, taking account of the knowledge gaps identified during the benchmark assessment and the methods that STECF have identified.

d. Provide a description of the main fleets involved in the fishery, allowing to analyse the evolution of the activities over the last 10 years, with an emphasis on the distinction between fisheries carried out for the purposes of human consumption and fisheries carried out for the purposes of industrial produce (fishmeal). Provide relevant data to assess the respective impact on the exploitation of the stock and trends in the profile of these fisheries for the period in question (evolution of catches and share in the fishing mortality rates).

STECF observations

The main fisheries on northeast Atlantic blue whiting target spawning and post-spawning fish in EU waters, International waters west of Porcupine Bank/Rockall Bank areas, west of Scotland and the Faroese region (ICES 2011; ICES Figure 8.2.2-3). Most of the catches (90%) are taken in the first two quarters of the year (45% in each quarter in 2010) from the major spawning area to the west of Ireland and the British Isles. Unlike the fishery during the high productivity period from 1998-2008, almost no fishery for blue whiting was carried out in the northern area (IIa and Va) in 2010. The multi-national fleet currently targeting blue whiting consists of several types of vessels but the bulk of the catch is caught with large pelagic trawlers. Catches of blue whiting are used for a variety of purposes, landed fresh for human consumption, frozen in blocks for human consumption and landed for production of meal and oil. Ten countries reported blue whiting landings in 2010. STECF observe that details of the fisheries can be found in the ICES WGWIDE report (ICES, 2011).

The overall spatial distribution of catches and the distribution by county by ICES sub-division are available from the ICES WGWIDE report (ICES, 2011).

STECF suggests that the possibility of assigning historic catches to ‘northern’ and ‘southern’ stocks should be determined as part of the benchmark assessment (see- cross reference to previous section).

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8.6. UK request for spatial management for haddock

Terms of Reference

Can STECF confirm that the majority of West of Scotland Cod is distributed north of the 59 degree line? If so, and in terms of maximising cod by-catch avoidance, what percentage of the quotas of species with significant cod by-catches should be taken north of the 59 degree line and what percentage (if any) should be allowed south of this line.

STECF Response

STECF was presented with this two-part question at the start of the meeting and was provided with a limited amount of accompanying background information relating to cod and haddock. The

information was Scottish observer catch rate data, landings linked to VMS and landings by statistical rectangle.

Based on these data some observations can be made on the distribution of cod. Figure 1 shows catch rates of cod (and haddock) obtained during observer trips by Scotland and aggregated by statistical rectangle (Table 8.6.1 provides the numerical values). Highest cod catch rates were observed in the statistical rectangles to the north of 59°. Figure 8.6.2 illustrates the distribution of cod from landings data linked to VMS and presented on a grid (1/16 of a statistical rectangle). This plot also shows a preponderance of cod in the more northerly parts of VIa above 59°. Table 2 includes cumulative landings information (from logbook data) which indicates that around 41% of UK landings into Scotland were taken below 59° and 59% were taken above.

The available information suggesting that most cod is located to the north of 59° is, however, partial and does not include information on cod occurring at the southern end of VIa off the Irish coast for example. To fully answer the question, more comprehensive international catch (landings + discards) data are required providing quantitative information on the distribution of the population. Relevant information was not available at the time of the meeting. Ideally, catches of cod aggregated across all countries operating in area VIa and presented by rectangle should be provided. One source of international catch data is the STECF effort management EWG 11-11, however, the database is unsuitable for answering this question because it does not contain i) catch data disaggregated to rectangle level ii) information from all countries (for example Spain). Fishery independent survey data would also be helpful providing the coverage gave a representative picture of cod distribution over the course of a year.

The second question, relating to the partitioning of quotas (north and south of 59°) for any species associated with cod, essentially proposes a spatial approach explicitly linked to maximising cod bycatch avoidance. The importance of avoiding cod in VIa has been emphasised before and various spatial measures, particularly closures, are already employed – in its 2011 advice ICES notes that 'relatively stable aggregations (of cod) on timescales of several weeks are consistent with management by temporary spatial closures'. STECF also notes that it has previously given spatial management advice on the western limits of the cod zone which are considered to confound the effectiveness of the cod recovery plan.

As in the case of the first question, it is not possible to fully address this issue without additional data covering all the species in VIa which occur in mixed fisheries with cod. The type of disaggregated data required are outlined above. Data on haddock distribution was, however, provided in the background information and some preliminary comments can be made. Observer vessel catch rates shown in Figure 1 and Table 1 suggest that for the Scottish fishery, the highest haddock catch rates occur below 59°. Information on landings linked to VMS (Figure 2) and cumulative landings arranged by latitude (Table 2) suggest that the main areas of haddock distribution extend further to the south than those of cod (around 70% of Scottish landings come from south of 59°.

STECF Conclusion

STECF notes that data on landings and discards of cod and haddock from all Member States engaged in the fishery is required in order to fully address the question.

Based on partial information from one Member State (Scotland) there are indications that the majority of cod are presently located in the northern part of VIa but this needs to be examined in light of more comprehensive data. There were insufficient data to fully address the question of

appropriate proportions of TACs north and south of 59° for a range of species associated with cod. Examination of the partial data on haddock from one Member State, however, suggest that the pattern of distribution differs to that of cod and extends further to the south of 59°. This may provide opportunities for spatial management arrangements involving allocation of specific proportions of TACs to specific areas but this requires complete international data on both landings and discards for the species concerned.

Table 8.6.1 Summary of observer data used to produce Figure 1

StatRect	DecLat	DecLong	No of Hauls	Trips	CodperHaul_kg	HadperHaul_kg
41E0	56.25	-9.5	2	1	0.0	0.0
42E0	56.75	-9.5	16	1	0.0	0.0
42E2	56.75	-7.5	10	1	12.0	44.7
43E0	57.25	-9.5	10	2	0.0	0.0
44E0	57.75	-9.5	23	5	4.4	9.1
45E0	58.25	-9.5	19	5	3.0	62.7
45E1	58.25	-8.5	13	6	40.3	70.5
45E2	58.25	-7.5	2	2	7.4	211.4
46E1	58.75	-8.5	15	4	10.3	50.3
46E2	58.75	-7.5	46	9	193.1	240.4
46E3	58.75	-6.5	87	7	77.3	1118.1
46E4	58.75	-5.5	11	1	52.3	1354.9
47E2	59.25	-7.5	15	5	25.7	54.4
47E3	59.25	-6.5	27	8	273.1	40.4
47E4	59.25	-5.5	6	2	60.2	125.1
47E5	59.25	-4.5	4	2	20.1	986.8
48E3	59.75	-6.5	17	4	217.0	258.7
48E4	59.75	-5.5	46	8	612.8	232.9
48E5	59.75	-4.5	23	3	447.8	500.3
49E5	60.25	-4.5	80	10	198.1	47.3

33 trips in total

Table 8.6.2 Percentage of landings of cod and haddock from rectangle data (2007-2009) presented by latitudinal 'rows'. Cumulative percentage from south to north also shown

	Latitude sum		Cumulative%	
Latitude	Cod	Had	Cod	Had
60.5	11.61%	6.18%	100.00%	100.00%
60	14.19%	8.81%	88.39%	93.82%
59.5	32.98%	15.72%	74.20%	85.01%
59	26.39%	24.57%	41.22%	69.29%
58.5	4.89%	12.97%	14.83%	44.72%
58	0.74%	5.99%	9.94%	31.75%
57.5	2.71%	7.24%	9.20%	25.76%
57	3.58%	2.92%	6.49%	18.52%
56.5	2.69%	9.87%	2.91%	15.60%
56	0.19%	1.48%	0.22%	5.73%
55.5	0.03%	4.25%	0.03%	4.25%

Figure 8.6.1 Information from observed TR1 fishing trips (Scottish) in VIa (2007-2010) aggregated by statistical rectangle. Horizontal bars illustrate the catch rates (kg/trip) for haddock and cod.

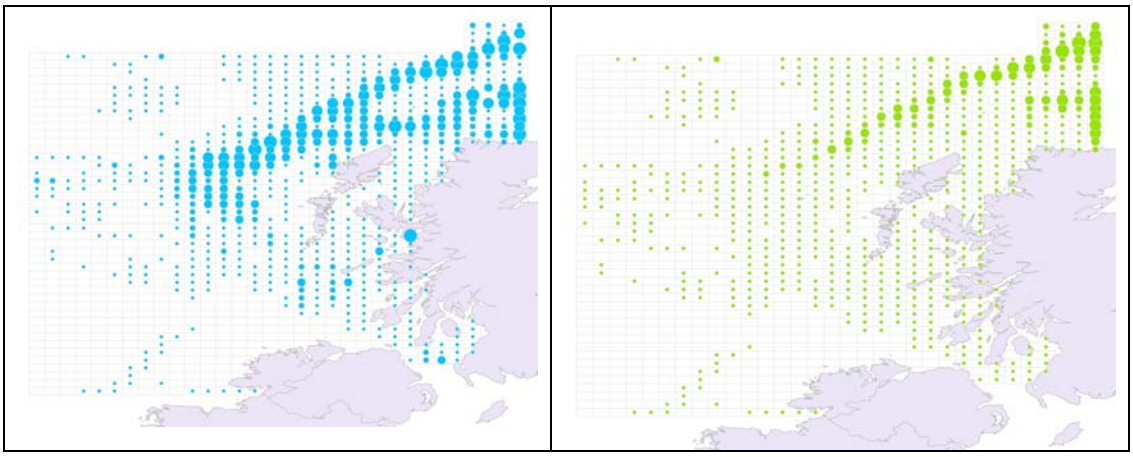

Figure 8.6.2 Logbook landings (UK Scotland) information linked to VMS (2007 -2009) are shown for haddock (left) and cod (right).

8.7. North Sea RAC proposal for a harvest control rule for plaice in the Skagerrak

Background

Plaice in the Skagerrak and Kattegat is currently assessed by the International Council for the Exploration of the Sea (ICES) as one stock unit (ICES division IIIa; ICES, 2011a). However, the assessment of this stock has been rejected as a basis for advice since 2005, due to high uncertainty and large retrospective patterns in the estimates of both F and SSB (ICES, 2011a). Therefore, in the last years ICES have only been able to offer advice based on precautionary considerations.

In this context, the NSRAC has brought forward a proposal for an HCR for plaice in the Skagerrak. The proposal is to set a TAC for plaice in the Skagerrak from both the TAC for plaice set for the North Sea and from changes in indices derived from fishing in the Skagerrak. Such a proposal is based on a series of assumptions on the stock structure, migration and linkage between the plaice in the Skagerrak and North Sea (see background information).

Terms of Reference

The STECF is asked to comment on the North Sea RAC's proposal for a harvest control rule for plaice in the Skagerrak, and in particular to advise on whether partially linking the TAC in the Skagerrak with the assessment of plaice in the North Sea would pose a significant risk to the stock of plaice in the Skagerrak. If so, the STECF is asked to suggest refinements to the methodology that could mitigate this risk. Finally, given the uncertainties in the assessments of plaice in the Skagerrak, the STECF is requested to advise on whether the methodology proposed by the North Sea RAC be considered as a reasonable basis for setting the TAC in 2012 pending a fuller analysis of its coherence with the precautionary approach.

STECF Observations

STECF considers that the initiative by the RAC to bring forward a proposal for management in a situation where current management is less than optimal should be encouraged. STECF considers that there is a need to improve management advice for this area and STECF would like to support the efforts mad by the NSRAC to attempt to develop more appropriate and robust management for plaice in the Skagerrak.

Currently there is considerable debate concerning the extent of the mixing and movement of plaice in and between the Skagerrak and surrounding areas. Given this uncertainty such a proposal which uses information from an adjacent area (TAC for North Sea plaice) needs to be tested to evaluate if it is robust to a range of plausible assumptions of mixing and migration of components of plaice both within the area concerned and between the Skagerrak and the surrounding areas. However, the proposal was not accompanied by any evaluation of the risks associated with the HCR proposed and STECF is unable to carry out extensive evaluations during plenary meetings.

STECF conclusions and recommendations

1) Given the available information, on the potential risks of the proposed HCR STECF is unable to recommend the NSRAC proposal of an HCR as a basis for setting TACs for plaice in the Skagerrak. STECF considers that linking the TAC in the Skagerrak with the assessment of plaice in the North Sea without any evaluation of risk may pose a significant risk to the local components of plaice in the Skagerrak.

2) Without an analysis of the risks and a sensitivity analysis, to the assumptions of mixing and migration to evaluate, STECF is unable to suggest any refinements to the methodology that could mitigate risk.

3) STECF has no objective means to judge whether the methodology proposed by the NSRAC to set the TAC for plaice in the Skaggerak in 2012 is more or less appropriate than the present system that has been used for a number of years. Thus, in the light of these considerations STECF cannot advise that the methodology proposed by the North Sea RAC is appropriate for setting the TAC in 2012 for plaice in the Skagerrak.

8.8. CCTV cameras

Background

In accordance with Council Regulation (EU) No 53/2010 fixing the fishing opportunities for 2010 the Member States were allowed to grant to vessels participating in trials on fully documented fisheries/ remote electronic monitoring (REM) systems additional allocation of quota for certain cod stocks.

The trials are already in place for several years with the main objective to evaluate the reliability and functionality of the REM system and to demonstrate how the total catches can be counted and the fishing activities fully documented. At this stage it has been claimed that there is need for an incentive by quota premium that compensates for the requirement that both retained and discarded catches are counted against the quota.

In the framework of an annual data call for assessment of the fishing effort regimes in the EU waters the data on effort, landing, discards, fleet have been submitted by Member States to JRC and evaluated by STECF EWG. Additionally, the Commission is providing the national reports from DK and UK implementing the project.

Terms of reference

STECF is requested to advice on the premium quota for cod:

- Is there a reduction in the amount of unwanted catches that is either discarded or landed (Scotland) by the vessels? If yes, is this reduction commensurable with the quota premium granted to vessels participating in REM projects?
- What is the trend in the total outtake of cod when calculated as the sum of the national annual quota + estimated discards + premium quota compared to the total landing +

estimated discards. To what extent do the REM projects deliver the expected results, namely the reduction of discards?

- Is it possible to identify some trends from the data and information available confirming changes in fishing pattern of the vessels participating in REM? If such trends can be identified, please describe and explain.
- Is this system deemed appropriate to be introduced for other areas and fisheries, without prejudice to the principle of relative stability?
- If STECF concludes that the data and information are insufficient to fully respond this TOR and the one for the EWG, STECF is requested to specify the data and information that required in order to permit such an assessment.

STECF Response

STECF was provided with this item just prior to the start of the meeting. Accompanying documents consisted of reports from Member States involved in CCTV trials (England, Scotland, Denmark – documents available on STECF PLEN-11-03 page on: https://stecf.jrc.ec.europa.eu/meetings) which were supplied to the EU Commission in 2011. The detailed reports describe the implementation of the trials (technical details of REM systems, vessels involved, mode of operation, monitoring) and provide various output results from the scheme. Detailed scrutiny of the results of the trials proved impossible. However, in response to each of the specific questions listed above, STECF was able to make the following observations:

- *Is there a reduction in the amount of unwanted catches that is either discarded or landed (Scotland) by the vessels? If yes, is this reduction commensurable with the quota premium granted to vessels participating in REM projects?*

There is insufficient data yet to fully respond to this question. Available material is still being collated. The reports provided so far, indicate that it is possible to account for all the fish that have been caught by vessels participating in the FDF scheme and thereby demonstrate that discarding of cod by such vessels has been reduced.

- *What is the trend in the total outtake of cod when calculated as the sum of the national annual quota + estimated discards + premium quota compared to the total landing + estimated discards. To what extent do the REM projects deliver the expected results, namely the reduction of discards?*

The catch quota schemes have been running for just over two years and so the time series is too short to be considering trends. Data are being collated to allow a full evaluation for the 3 countries participating most extensively. Using the results from the STECF EWG-11-11 on fishing effort report (https://stecf.jrc.ec.europa.eu/reports/effort), it appears that discarding of cod by vessels participating in the REM projects has been reduced. However, it is not possible to determine whether the total removals of cod by vessels participating in the scheme are less than or more than they would have removed had they not participated in the scheme.

- *Is it possible to identify some trends from the data and information available confirming changes in fishing pattern of the vessels participating in REM? If such trends can be identified, please describe and explain.*

As the schemes have only been running for a couple of years , it is not possible to look for trends in the data. However, it is clear from the Danish report that there is an increased proportion of smaller (above MLS) grades in the cod landings from FDF indicating that high-grading by participating

vessels has been reduced or eliminated. This observation is not unexpected since it is a condition of participation in that trials that all cod above minimum landing size that are caught shall be landed. Similarly, the report on the results of the English trials indicate that participating vessels for which sufficient data were available, caught larger fish when operating within the catch quota system than on trips undertaken prior to the scheme. The increase in mean size of cod caught was of the order of 3%-5% and part of the observed increase may be due to increased growth of cod in the population, rather than a deliberate attempt by vessels to avoid catching small cod. However, STECF notes that some English vessels participating in the trials have opted to use 132 mm codend meshes in an attempt to reduce the capture of undersized cod.

In summary, there is insufficient information in the reports to demonstrate that all participating vessels have actively attempted to avoid catching smaller sized cod,

- *Is this system deemed appropriate to be introduced for other areas and fisheries, without prejudice to the principle of relative stability?*

STECF does not consider it likely that the introduction of FDF schemes to other areas and fisheries will necessarily prejudice the principle of relative stability. It is worth noting that even before the introduction of these schemes, national quota swops have taken place and to some extent such swaps distort the relative stability assumptions. Furthermore, if the estimated catches (as opposed to landings) of Member States are calculated as a percentage of the total catch, then it is highly likely that further departures from relative stability would be observed.

STECF considers that the introduction of FDFschemes would prove valuable in a number of areas. Recommendations from STECF with respect to the current cod management plan review (STECF Plenary-11-02) clearly point to the advantages of managing removals from fish stocks in terms of catch (not landings) and in utilising systems such as REM (CCTV + associated vessel systems) to monitor the effectiveness of the scheme.

- *If STECF concludes that the data and information are insufficient to fully respond this TOR and the one for the EWG, STECF is requested to specify the data and information that required in order to permit such an assessment.*

STECF concludes that the data and information available at the STECF meeting (reports provided under background information and direct from STECF experts) are insufficient to fully respond to this TOR.

STECF EWG -11-11 also addressed a request from the Commission relating to fully documented fisheries and the Member States concerned supplied relevant data in accordance with the data call. These data were subsequently summarised in the report of EWG-11-11. The data supplied by Member States included aggregate effort expended by FDF vessels and information on aggregate landings and discard. These data represent relatively few vessels compared to the vessel numbers not in the FDF schemes (in the cases of Sweden only 1 vessel is involved) and to provide an informed response, STECF notes that additional information is required and proposes that a small group of STECF members convene early in to discuss and identify what data and metrics would be most useful for evaluating the FDF schemes in order to adequately address the questions listed above.

8.9. Pelagic RAC Management plan proposal for Herring in Division VIaS

Terms of Reference

The Pelagic RAC has provided a proposed plan for herring in Division VIaS and VIIbc

STECF is requested to assess if the proposed rules in the plan are appropriate for ensuring the management of this stock consistent with MSY by 2015 and beyond

STECF is requested to evaluate if the plan is compatible with the precautionary approach, in particular with regard to rules applied in case of lack of assessment and forecast in any given year

The Pelagic RAC proposed plan for herring in Division VIaS and VIIbc

This plan aims to achieve rebuilding and sustainable harvesting for the stock of herring off the northwest coast of Ireland. A mechanism is provided for setting the TAC for the years 2012, 2013 and 2014, consistent with fishing at or below $F_{0.1}$. For years subsequent to 2014, it shall be superseded by a plan aiming to achieve harvesting consistent with F_{MSY}. This proposed plan is the result of initial consultations between the Federation of Irish Fishermen and scientists from the Marine Institute and subsequent debate in the Pelagic RAC among the EU industry as well as with environmental NGOs.

1. *Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than B_{lim}.*
2. *For 2012 the TAC shall be set at 4,471 t, the same level as in 2011. This is to achieve a transition towards $F_{0.1}$.*
3. *For 2013 and subsequent years, the TAC shall be set consistent with $F_{0.1}$ (F= 0.2), based on ICES and STECF advice, see Note 2 below.*
4. *If ICES and STECF are unable to provide an assessment and forecast for 2013, or any subsequent year, then status quo TAC shall apply in that year.*
5. *Notwithstanding paragraph 3 and 4, if the SSB in any year is estimated to be at or below the level consistent with recruitment impairment, then the TAC for that year shall be set at a lower level.*
6. *ICES and STECF shall be requested to evaluate this rebuilding plan.*
7. *When a suitable, benchmarked assessment method is available for this stock this rebuilding plan shall be superseded by a long-term management plan.*
8. *If a benchmark assessment is not available by 2014, the terms of article 3 shall remain in place until a benchmarked assessment and forecast is available.*
9. *In order to provide for separate management of this stock, relative to that in VIaN, every effort shall be made to disaggregate abundance-at-age data in the wider VIa Sub-area, see Note 3.*
10. *This arrangement shall commence 1st January, 2012.*

Note 1: Transition towards $F_{0.1}$, in 2012.

It is not possible to forecast a catch that is consistent with $F_{0.1}$ for 2012. However, preliminary deterministic forecasts suggest that fishing at $F_{0.1}$ (F= 0.2) implies catches in 2012 of between about 5 000 t and 10 000 t. Status quo TAC is lower than these catch options.

Note 2: Assessment and forecasting method

Currently, ICES is unable to provide an assessment or forecast. This is partly due to the lack of sufficient time series of surveys for tuning purposes. In 2012 it is expected that a minimum time series of 4 years will be available with which to assess the stock. In 2012, 4 surveys will be available, and in 2013, 5 surveys will be available for tuning purposes. By the time of the proposed benchmark, in 2014, a time series of 6 surveys will be available for tuning.

Note 3: Disaggregation catch and survey abundance-at-age data

It has been noted by the WESTHER project that VIa contains mixed stocks, comprising the VIaN, VIaS/VIIbc and VIIaN stocks. Further work was conducted on this by ICES group, SGHERWAY. This group concluded that whilst this mixing was taking place it was not possible to assess and manage the stocks together, and that separate assessment and management should continue.

STECF comments

STECF received this request during the plenary meeting and without any supporting documentation to illustrate the performance of the plan. STECF was unable to undertake a detailed study but can make a number of observations.

In general the PRAC plan for herring in Division VIaS and VIIbc has most of the elements of a suitable HCR. However, in order to operate well it relies on an agreed assessment, which is currently not available.

STECF's understanding of the plan is that without an assessment the plan results in a TAC of 4471 t. ICES indicates that the current level of SSB is uncertain, but is likely to be below possible reference points. ICES also indicates that recruitment has been low since 2000 STECF considers that under these depleted conditions work is needed to evaluate the consequences of exploitation with such a fixed TAC. However, as a general principle any plan with an article that implies a fixed TAC needs a clause that allows for reducing the catch to zero if necessary, the current proposed plan does not have such a clause.

It appears from the ICES advice that the TACs have been exceeded in 12 of the last 13 years at around +25% (3400 t) above TAC. In 2010 the last year for which data is available landings exceed TAC by +35% (2600 t) Therefore it seems unlikely that the PRAC proposed fixed TAC of 4471 t will limit catch to the TAC.

ICES does not provide short term forecasts however, the ICES WG does include deterministic short term forecasts which may be being considered by readers as indicative of the current situation. It is possible that these have been run with an over optimistic recruitment scenario, as they appear to assume recruitment be greater than any observed in the last 4 years. These stock projections show a rapid recovery in SSB and may be over optimistic, particularly as ICES reports that the stock is likely to be below possible biomass reference points and has suffered from low recruitment since 2000 which may be due to the low stock size

STECF Conclusions

1) STECF is requested to assess if the proposed rules in the plan are appropriate for ensuring the management of this stock consistent with MSY by 2015 and beyond

STECF is unable to provide an explicit estimate of whether management under the plan is consistent with reaching Fmsy by 2015. ICES indicates that recent F is unknown, but is likely to be above FMSY (0.25). Given that there is currently no assessment, implementation of the plan is likely to consist of a fixed TAC of 4471t for a number of years. ICES advice indicates that in recent years the TAC has been exceeded and under these circumstances STECF is concerned that such a fixed TAC cannot be relied upon to reduce F sufficiently.

2) STECF is requested to evaluate if the plan is compatible with the precautionary approach, in particular with regard to rules applied in case of lack of assessment and forecast in any given year.

STECF considers that the proposed rule cannot be classed as precautionary without an assessment the provisions of the plan which does not provide for a closure of the fishery.

STECF considers there are a number of aspects that should be considered to improve the proposed plan

Addition of a clause to close the fishery if necessary.

Amendment of clause 5 to give an explicit reduction of F to levels below Fmsy if SSB is thought to be below Blim.

To assure that performance of the plan is adequately understood it is necessary for it to be evaluated under the following set of conditions in addition to normal recruitment and implementation.

1) recent low recruitment (since 2000), including a S-R relationship with declining recruitment with SSB
2) Implementation error at or above the previously observed level (last 13 years, last year) as both an absolute amount in tonnes or as a proportion of TAC
3) Operation of the plan for at least 10 years without an accepted assessment

The evaluation should estimate the probability of stock decline under the above circumstances including no assessment, low recruitment and higher implementation error simultaneously.

9. BALTIC SEA

9.1. Assessment of cod catches in Baltic Sea subdivisions 27 & 28

Background

Article 296 of Council Council Regulation (EC) No 1098/2007 of 18 September 2007 establishing a multiannual plan for the cod stocks in the Baltic Sea and the fisheries exploiting those stocks, requires the Commission to decide on an annual basis about the application of the fishing effort management limits defined in Article 8 of the same regulation to Subdivisions 27, 28.1 and 28.2.

Terms of Reference

The Commission requests STECF to advise if catches of cod in the period 1 October 2010 to 30 September 2011 in Subdivisions 27 and 28.2 were lower than 3% of the total catches of cod in Subdivisions 25 to 28 and if the catches of cod in Subdivision 28.1 were higher than 1.5 % of the total catches of cod in Subdivisions 25 to 28.

STECF response

STECF received catch data from the Commission for all Member States fishing in the Baltic. It is not stated clearly weather the reported data relate to landings only or to total catch of cod (including estimates of discards). However, STECF consider the reported data being landings and not catches of cod. The reported data are summarised in Table 1.

The data in Table9.1.1 indicate that between 1 October 2010 and 30 September 2011, less than 3 % of the reported landings of cod from Subdivisions 25 to 28 were taken in Subdivisions 27 and 28.2 and less than 1.5 % was taken in Subdivision 28.1. However, according to ICES WKEID (2010), discards of cod represents in average around 10% of the catches.

Table 9.1.1. Baltic Sea cod: Reported landings by country for SD27+28.1 and SD 28.1 in % of the total catches in SD25-28 for the period 1 October 2010 to 30 September 2011.

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6 *Article 29*
ICES Subdivisions 27 and 28

1. Each year, and no later than 31 October, Member States fishing in Area B, shall submit a report of all catches and bycatches of cod taken during the preceding 12 months in Area B as well as the discards of that species specified by ICES Subdivision and by gear types referred to in Article 8(1) to the Commission.

2. Each year, and no later than 15 December, the Commission shall decide in accordance with the procedure laid down in Article 30(2) of Regulation (EC) No 2371/2002 and on the basis of the report from Member States referred to in paragraph 1 and the advice from the Scientific, Technical and Economic Committee for Fisheries to exclude ICES Subdivisions 27 and/or 28.2 from the restrictions provided for in Article 8(1)(b), (3), (4) and (5) and Article 13 if there is evidence that catches of cod in these ICES Subdivisions are lower than 3 % of the total catches of cod in Area B.

3. The exclusion of ICES Subdivisions 27 and/or 28.2 shall take effect from 1 January to 31 December of the following year.

4. Article 8(1)(b), (3), (4) and (5) shall not apply to ICES Subdivision 28.1. However, if there is evidence that catches of cod are higher than 1,5 % of the total catches of cod in Area B, Article 8(1)(b), (3), (4) and (5) shall apply and paragraphs 1, 2 and 3 of this Article are applicable.

Country	27+28.2 (%)	28.1 (%)
SWE	0.48	0
ES	0.09	0.03
LIT	0.38	0
GER	0	0
POL	0	0
DAN	0	0
FIN	0	0
LAT	1.01	0

STECF conclusions

For all MS, landings of cod in the period 1 October 2010 to 30 September 2011 in Subdivisions 27 and 28.2 were lower than 3% of the total landings in Subdivisions 25 to 28. Also, landings of cod in Subdivision 28.1 were lower than 1.5 % of the total landings in Subdivisions 25 to 28. Assuming an average discard of about 10% of the catches Eastern for Baltic cod, STECF concludes that for all MS, catches of cod were lower than the thresholds defined in Article 29 of Council Regulation (EC) No 1098/2007 of 18 September 2007.

10. MEDITERRANEAN AND BLACK SEAS

10.1. Request on the Maltese plan for fisheries with trawlers and the Spanish management plan for sandeel, transparent goby and other gobies in the waters of Catalonia

Background

Member States are expected to adopt management plans for fisheries conducted by trawl nets (demersal and pelagic), boats seines (including both towed and surrounding seines), shore seines, surrounding nets and dredges (i.e. towed gears for molluscs bivalves, gastropods or sponges) within their territorial waters.
The plans shall include conservation reference points such as targets against which the recovery to or the maintenance of stocks within safe biological limits for fisheries exploiting stocks at/or within safe biological limits (e.g. population size and/or long-term yields and/or fishing mortality rate and/or stability of catches).
The plans shall ensure the sustainable exploitation of stocks and that impact of fishing activities on marine eco-systems is kept at sustainable levels.
The Management plans may incorporate any measure included in the following list to limit fishing mortality and the environmental impact of fishing activities: limiting catches, fixing the number and type of fishing vessels authorized to fish, limiting fishing effort, adopting technical measures

(structure of fishing gears, fishing practices, areas/period of fishing restriction, minimum size, reduction of impact of fishing activities on marine ecosystems and non-target species), establishing incentives to promote more selective fishing, conduct pilot projects on alternative types of fishing management techniques.

Moreover, with a view to carry out some specific fisheries exceptions to some rules may be granted as stipulated by Articles 4(1) second subparagraph, 4(5), 9(7) (not applicable to trawl-nets), 13(5), 13(9), 13(11), 15(3) respectively of the Mediterranean Regulation (Council Regulation EC No 1967/2006; OJ L36 of 8.2.2007).
In order to benefit of either of such derogations, the fisheries concerned, in addition of being managed within an adequate management plan (Article 19), shall respect some conditions including, *inter alia*, to be highly selective, in order to ensure that catches of species mentioned in Annex III are minimal, to have a negligible effect on the marine environment and shall be carried out neither above coralligenous habitats and mäerl beds nor above seagrass beds of *Posidonia oceanica* or other marine phanerogames.

For the latter issue, derogation to operate above seagrass beds is available under either Article 4(1)second subparagraph or Article 4(5) provided that the purse-line, the lead-line and/or the hauling ropes of boat seines do not touch the seagrass bed during the fishing operations and that the surface of affected habitat does not exceed certain levels (10% of seagrass beds in territorial waters and 33% of seagrass beds within the area covered by the management plan).

Member States are expected to provide up-to-date scientific and technical justifications for such derogations.

Spain submitted the scientific basis for a management plan and justifications for derogations for the boat seine fishery 'sonsera" for sandeel, transparent goby and other gobies in the waters of Catalonia.

Malta submitted the scientific basis for a management plan and justification for derogations covering the period 2011-2015 for several fisheries: bottom trawlers including also "gangmu" for shrimps, "lampara" purse-seine, dolphinfish surrounding net without purse line (i.e. boat seine), and "tartarum" surrounding net without purse line (i.e. boat seine)

Terms of Reference

STECF is requested to review and scrutinize both management plans.

STECF is in particular requested to evaluate the findings, to make appropriate comments, also with respect to the elements/measures included in the management plan and to advise whether it contains elements that account for the state of the exploited resources and if the fishing pressure of concerned fisheries is expected to exploit the stocks in line with their production potentials so that the plan is expected to maintain or to revert fisheries productivity to higher levels and low risk of stocks depletion.

STECF is also requested to evaluate whether the fisheries carried out are highly selective, both in terms of species and sizes, have a negligible effect on the marine environment and if the fishing gear risk damaging the seagrass beds during the fishing operations. Attention must be given to advice whether the catches of species subject to minimum size are minimal with respect to the catch composition of fisheries carried out with the same/similar fishing gear at distances from the coast and depths where no derogation is needed.

STECF response

A. Management plan for artisanal fishing with boat seines (Sonsera) in Catalonian waters

A previous version of the management plan had been submitted to the European Commission in May 2010. The Spanish Deputy Directorate General for the Conservation of Coastal Resources asked the Catalan Administration further information on specific issues as requested by the European Commission in July 2010. The document is composed by the previous version of the plan plus an addendum that includes more information on the fisheries and in particular on the by-catch composition, regulatory text, justification of the maximum catches, evaluation of the economic impact of the sonsera fishery, further data on the fishery, limitations on the maximum by-catch fraction and on the spatial distribution of goby species in the area.

Management plan objectives
The MP states that fishing activity has no significant impact on the marine environment and involves a limited number of boats. Furthermore, the species targeted by the Sonsera (sandeels and gobiids) cannot be caught by any other gear and the fishery was legally carried out prior to the entry in force of the Mediterranean Regulation. The MP also alleges that, maintenance of this fishery is likely to have a positive effect on the status of other resources because it precludes the shift of fishing pressure towards other stocks.

The first objective of the MP is to keep fishing mortality of the sandeel stock to a rate that makes it possible to maximise a sustainable yield in the long-term. In this regard, the MP sets a series of technical measures aiming to ensure annual landings no greater than 400 t for the entire fleet of the Catalan coast. No catch limits, nor any other objective are fixed for the gobiids.

The second objective of the MP is a 50% reduction of by-catch of other species from the 6% to 3% by weight. This reduction will ensure that the impact of the fishery on the remainder fish species is trivial.

STECF general comments

STECF observes that the Sonsera fishery targets different groups of species in different periods of the year, i.e. two species of sandeels (*Gymnamodytes cicerelus* and *G. semisquamatus*) from spring to autumn, and three species of gobiids (*Aphia minuta*,. *Crystalogobius linearis* and *Pseudaphya ferreri*) from November to May.

The current characteristics of the fishery (description of the gear, activity calendar, fishing areas, changes in target species along the year, landings by species) are well described in the MP. The socio-economic importance of the proposed management measures have been evaluated.

When targeting sandeels, the by-catch of Sonsera is composed of many species. The list of by-catch species is provided in the MP but there is no information on the numbers caught, the size compositions of by-catch species and the respective changes along the fishing season. Such information is necessary for assessing the sustainability of this activity regarding the target species as well as the impact on by-catch.

During late autumn-winter, the 3 gobiid species -mainly *Aphia minuta*, comprise the target species of Sonsera. The fishing vessels operate close to the coast (<3 miles) and the mesh size of the gear is smaller than the legal size for towed gears. The schools of gobies are located with echosounders

and the catch consists mainly of the target species. There is no information in the MP concerning the exploitation status of the Gobiidae stocks, nor on the respective by-catches.

During summer, the targets of the vessels using Sonsera are the two *Gymnamodytes* stocks. The latter have a good commercial value and are sold fresh for human consumption. Sandeels are also caught in shallow waters and schools are localized with acoustic devices.

The number of vessels using Sonsera is limited to 25. The fleet consists of small-sized vessels

Even though there is complete lack of quantitative information on the status of the stocks of the target species in the MP, it is alleged that the current rates of exploitation are consistent with the productivity of the stocks and are sustainable. An annual catch limit of 400 t was defined as the maximum sustainable limit, considering landings of recent years, but this limit is not supported by a scientific analyses of available data. A limitation in fishing time for each day and time period when the fishery is authorized are defined in the plan. Seasonal fishing bans have been defined for the two groups of species, but the defined periods do not coincide with the periods where the species are mostly available.

STECF observes that the MP proposes to keep the current number of vessels and fishing pressure at current levels, without any room for expansion. However, the sustainability of current fishing pressure either on the target species or on by-catch species, are not supported by scientific evidence. Such evidence is necessary to support the application for derogations from two legal restrictions related to the fishing activity, namely fishing within the 3 miles coastal stripe and using very small mesh sizes.

STECF conclusions

The two derogations requested, related to the use of "Sonsera", are required because the target stocks are only found concentrated very close to the shore and only grow to a small maximum size.

The MP lacks the necessary information to assess the impacts of the fishing activity on the status of the target stocks and on associated species.

The way the gear is used and the occurrence of targeted stocks over 'clean', sandy-muddy grounds, where marine phanerogams are not present, suggest that the activity does not impact the *Posidonia* beds.

In the MP, there is no information on the numbers and size structure for the species that constitute the by-catch or on their current exploitation status. It is therefore not possible to assess the impact of the fishery on these stocks.

Considering that there is a complete lack of analysis of the exploitation status of the target species nor on the impact on other species, it is not possible to evaluate whether the proposed limits in fishing effort and landings (which are fixed exclusively for the two sandeel species, with no mention on catch limits for gobids) can guarantee a sustainable use of these resources and an acceptable impact on the other resources in the area.

B. <u>Malta's Management Plan</u>

The STECF received a document entitled 'Malta's Fisheries Management Plan 2011-2015'. The Plan (MP) covers the following fisheries: (a) Bottom otter trawlers, (b) FAD + boat seine fishery for dolphinfish, (c) Lampara purse seiners, (d) 'Tartarun' (small-meshed boat seines targeting the transparent goby), and (e) 'Gangmu' (small dredges targeting the shrimps *Processa* and *Palaemon*).

Furthermore, according to Council Regulation (EC) 1967/2006, the MP includes three of requests for derogations, in order to retain the use of the traditional boat seine 'Tartarun':
(i) Derogation from Article 4.1, to authorise the use of Tartarun on *Posidonia oceanica* beds.
(ii) Derogation from Article 13.5, to authorise the use of the gear at a distance of less than 3 nautical miles or 50 m depth.
(iii) Derogation from Article 9.7, to authorise the use of a mesh size smaller than 14 mm, due to the small size of the target species, *Aphia minuta*.

The MP includes all fishing activities listed in Article 19 of Council Regulation (EC) No 1967/2006. It was initially evaluated in the 2008 STECF summer Plenum in Helsinki (PLEN-08-02) and a second, revised version of the MP was evaluated in the 2009 summer Plenum in Copenhagen (PLEN-09-02). The current, third version of the Maltese MP has been initially evaluated by STECF EWG 11-12 (Assessment of Mediterranean Sea stocks - part 2) that met in Larnaca, Cyprus, 26-20 September 2011.

STECF reviewed the Maltese MP and the STECF EWG 11-12 report and endorses the comments and conclusions of the STECF EWG 11-12 report.

In particular, STECF notes that:

The current characteristics of the fisheries included in the MP (fleet, activity, target species, landings by species) are well described. Priority is given to ongoing and future monitoring programs and stock assessments aiming to improve the information on the status of the target stocks and on fishing impacts of the fisheries in question. STECF agrees that such information is urgently needed if the likely impact of the MP is to be evaluated.

A number of management measures are suggested in the MP, especially for the bottom trawlers. However, it is not clear if these measures will be adopted at the national (25 miles zone) or the international level (GFCM). The MP states that many of the proposed measures will be negotiated at the GFCM level and in particular with the governments of Tunisia, Libya, Italy and Cyprus.

A major drawback in the MP is that the stock status of many of the species targeted by the five fisheries is unknown. Furthermore, most demersal and pelagic stocks exploited by the Maltese fleets are shared with other countries (Italy, Tunisia, Libya and possibly others). To assess the stock status and any impact of the proposed MP, STECF notes that stock assessments of shared stocks should be carried out and management actions be defined in close coordination with other GFCM countries exploiting the same resources. For example, *Coryphaena hippurus*, has a wide geographic distribution and management of this resource has to be coordinated at the GFCM level.

In the case of bottom otter trawling, reference points ($F_{0.1}$) are defined for the shared stocks of *Parapenaeus longirostris, Merluccius merluccius, Aristaeomorpha foliacea, Mullus barbatus* and *Mulllus surmuletus*. In all cases, except for *Mullus surmuletus*, which is currently being exploited at F0.1, the stocks are currently being exploited at a rate greater than F0.1. A management plan for the demersal resources of the central Mediterranean should include actions to reduce fishing mortality, supported by appropriate scientific analysis, including analysis of the socio-economic impacts. There are no such provisions in the proposed MP.

The MP reports that bottom trawling is carried out during night at depths of 50-150 m over hard and rocky bottoms. Although such 'rocky' habitats might be vulnerable to trawling no particular management actions are planned to reduce the impact of otter trawling.

No information is provided on the status of the stock of the dolphinfish (*Coryphaena hippurus*), which is one of the most important resources for Malta, targeted by the FAD + boat seine fishery. With regard to the Lampara purse seiners, the status of the stocks of the main target species (*Scomber* spp., *Alosa* spp., *Trachurus* spp.) is also unknown.

The Tartarun is a traditional surrounding net operating very close to the coast and targeting the transparent goby *Aphia minuta*. Available information on the operation of this gear indicates that the percentage of total Maltese *Posidonia* grounds potentially exposed to this fishery is 1.1%. Furthermore, STECF notes that this specific gear is unlikely to affect *Posidonia* as fishing operations take place over sandy substrates where *Posedonia* is not present.

The Tartarun fleet consists of 12 vessels that operate in a restricted area. The gear is used in waters less than 3 miles from the coast and mesh size is smaller than the one allowed by the Regulation (1967/2006). No information is provided regarding the status of the *Aphia* stock in order to assess the sustainability of the Tartarun fishery. STECF notes that, according to information provided in the MP, the Tartarun fishery has low by-catches (95% of the catch is *Aphia minuta*).

The Gangmu is a bag net with metal frame, operated at 2-5 m depth over *P. oceanica* beds, to catch the shrimps *Processa* and *Palaemon*. The fishery supplies live bait for use in other fisheries. No scientific data are provided in the MP on the impact of this activity on the target species, habitats or communities.

The MP states that the Maltese fishing fleet encompasses 1097 professional and 1871 recreational vessels. STECF notes that catches by the recreational vessels of the stocks targeted by the professional fleet have to be monitored for the proper assessment of target stocks.

Immediate additional management measures are proposed in the MP to be put in place before the end of 2011. The potential effects, in socio-economic terms, of these measures have not been evaluated. However STECF notes that limitations in fishing days, closed seasons, scrapping programmes and other technical measures proposed for the bottom trawlers as well as measures proposed for the Lampara purse seiners are likely impacts on profitability and the employment in the fisheries sector.

STECF conclusions

The revised (2011) version of the Maltese Management Plan still lacks evaluations of the status of most stocks targeted by the five fisheries as well as adequate information on environmental impacts. Nevertheless, a priority is given in the MP to establishing monitoring programs and providing stock assessments in the near future.

Regarding the derogations requested for the traditional boat seine 'Tartarun', STECF notes that the gear is hauled by hand and that the effects on *Posidonia* beds are low. The gear is used over a very small area, a short period of the year (mid-June to end- August) and the fishery is highly selective (95% of the catch is *Aphia minuta*). However, no assessment of the transparent goby is provided in the Plan for STECF to be able to assess whether the management plan for the fishery will ensure that the resource is exploited sustainably.

The management plan reports that otter trawling is carried out by a number of vessels over 'rocky' bottoms (50 - 150 m). STECF points out that there is no information on the type of habitats impacted by this activity and no action is foreseen in the MP to prevent possible damage to sensitive habitats. It should be demonstrated that protected habitats, e.g. coralligenous substrates, are not impacted.

STECF notes that the MP should include analysis of socio-economic impacts for any management measure proposed.

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European Commission

EUR 25033 EN – Joint Research Centre – Institute for the Protection and Security of the Citizen
Title: 38rh PLENARY MEETING REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-11-03)

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Luxembourg: Publications Office of the European Union
2011 – 101 pp. – 21 x 29.7 cm
EUR – Scientific and Technical Research series – ISSN 1831-9424 (online), ISSN 1018-5593 (print)
ISBN 978-92-79-22036-4
doi:10.2788/98352

Abstract

The Scientific, Technical and Economic Committee for Fisheries hold its 38th plenary on 7-11 November 2011 in Brussels (Belgium). 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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LB-NA-25033-EN-N

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Publications Office

ISBN 978-92-79-22036-4

9 789279 220364