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Scientific, Technical and Economic Committee for Fisheries (STECF)

Landing Obligations in EU Fisheries - part 3 (STECF-14-06)

Edited by Norman Graham & Hendrik Doerner

This report was reviewed by the STECF during its 45th plenary meeting held from 24 to 28 March 2014 in Brussels

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Landing obligations in EU Fisheries – part 3 (STECF-14-06)

THIS REPORT WAS REVIEWED DURING THE PLENARY MEETING HELD IN BRUSSELS, BELGIUM, 24-28 MARCH 2014

1.1 Background

The introduction of the landing obligation in the reform of the Common Fisheries Policy (CFP) represents a fundamental shift in the management approach to EU fisheries, switching the focus from the regulation of landings to catches as well as introducing regionalised decision-making into the management of EU fisheries.

A number of scientific and technical issues were examined by an STECF EWG (EWG 13-16) set up with the purpose of providing advice and guidance for the Commission, Member States and the stakeholders to assist in the implementation of the landing obligation. EWG 13-16 provided advice on survivability, *de minimis* and inter-species quota flexibility, discard data issues and control and monitoring issues. A second meeting of this EWG (EWG 13-17) has provided further guidance specifically to assist Member States in formulating joint recommendations that will form the basis of regional discard plans. EWG 13-17 also identified circumstances leading to restrictions in fishing activity associated with restrictive quotas (so-called "choke species"). In combination, both meetings have provided a valuable insight into the implementation of the landing obligation for the Commission, Member States and ACs.

The first timeline in the Basic Regulation of the CFP is the introduction of the landing obligation for pelagic, industrial and also salmon fisheries in the Baltic from 1 January 2015. Other fisheries in the Baltic (other than pelagic, industrial and salmon) also have a start date of 1 January 2015 but with a 2–year transitional period to allow full implementation by 1 January 2017.

In order to further assist regional groups, it is proposed to hold a third STECF EWG in early 2014 to facilitate the development of the joint recommendations and also undertake further analysis of technical issues relating to survivability and the *de minimis* exemption. If available the EWG will use the work carried out to date in the Baltic and for pelagic fisheries as test cases.

In the Baltic Sea, draft joint recommendations have been well advanced by the Baltfish group. These draft joint recommendations would implement the landing obligation in the Baltic Sea from 1 January 2015 for all four species currently subject to TACs: cod, plaice, herring, sprat, salmon and one non TAC species: sea trout. For the pelagic fisheries regional groups of MS and the PELRAC have begun working on the development of discard plans.

Several regional groupings have raised specific issues regarding survivability and the setting of *de minimis* levels. In this regard the EWG is requested to consider survivability in respect of the exemptions being discussed in the Baltic (for salmon) and by the PELRAC (in purse seine fisheries). The EWG is also requested to develop an objective framework for setting *de minimis* levels taking account of F_{MSY} and Precautionary Approach considerations as well as control and monitoring issues

1.2 Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting EWG 14-01, evaluate the findings and make any appropriate comments and recommendations.

1.3 Observations of the STECF

The Report of the STECF EWG 14 -01 represents the findings of the third Expert Group meeting in a series of such meetings planned to address the implications associated with the implementation of the Landing Obligation, the provisions of which are prescribed primarily in Article 15 of the 2013 Reform of the Common Fisheries Policy (Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013).

STECF notes that all the TORs were tackled and efforts were made to provide helpful advice on a number of the additional questions raised by BALTFISH. EWG 14-01 put considerable effort into providing comment and guidance on the BALTFISH plan. Guidance on survivability issues included the identification of existing scientific work relevant to the species concerned. Earlier advice on biological features of some of the stocks was reiterated in the discussion on reducing some MCRSs. The EWG suggested that within the spirit of the basic regulation the problem of seal depredation could in principle be dealt with as a *de minimis* case. The EWG 14-01 considered additional questions, *inter alia*, on the inclusion of sea trout within the plan, on the timing of the introduction of plaice into the plan and on the associated difficulties created by the distribution of plaice quota in the Baltic.

STECF notes that EWG 14-01 developed an 8 point guidance framework for dealing with *de minimis* which considered the requirements of Article 2 of the basic regulation, namely that exploitation rates are consistent with producing maximum sustainable yield (F_{MSY}). The EWG also set out broad principles for achievement of documentation of catches and developed a 4 point 'relative risk score' system to assist in the development of approaches to monitoring and compliance.

1.4 Conclusions of the STECF

The STECF concludes that EWG 14-01 contributed new insight to the understanding of how the landing obligation could work in practise. Importantly, the opportunity to examine a proposed discard plan helped to more clearly identify key elements that regional groups need to consider in developing discard plans and for which supporting justifications are likely to be required. STECF also concludes that the EWG 14-01 adequately addressed the Terms of Reference, but notes that the scope for various interpretations of the Regulation and the emerging descriptions of prevailing circumstances in different fisheries continues to generate challenging questions.

STECF concludes that the information provided in the BALTFISH draft plan is not sufficient to permit a meaningful assessment of the plan's likely impacts. The draft plan largely contained a list of proposed measures with only limited justification. STECF notes the efforts made by EWG 14-01 to provide i) general guidance on the information to include in discard plans sufficient for evaluation purposes and ii) sources of important existing scientific information for the specific case of the BALTFISH plan. STECF further concludes that in order for future evaluations to be made (of the BALTFISH plan or the plans from other regions), Regional Groups will need to focus their efforts in developing plans in line with the guidance provided and with due attention to providing supporting evidence to justify measures.

STECF notes that some items included within the BALTFISH discard plan were considered to be outside the scope of the provisions in Article 15 of the basic regulation and could not be progressed by the Commission by delegated act. Therefore, these were not addressed by EWG 14-01 and STECF has not commented on them.

STECF concludes that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 to fish at F_{MSY} can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from F_{MSY} based advice. If *de minimis* were operated as an addition to the F_{MSY}-advised catch, then mortality rates would be predicted to exceed the F_{MSY} target. Furthermore, depending on the way in which the *de minimis* quantity is calculated and applied (for example 5% of an aggregate catch of several stocks applied as a *de minimis* on one stock), the departure from F_{MSY} could be substantial.

STECF notes that the scope for the provision on interspecies quota flexibility (Article 15(8)) may lead to fishing mortality rates exceeding F_{MSY}. This provision lies outside the scope of discard plans and was not addressed by EWG 14-01. Instead STECF has initiated an advice which is presented in section 4.1 of its spring 2014 plenary meeting report (http://stecf.jrc.ec.europa.eu/reports/plenary).

STECF endorses the findings presented in the report of the EWG 14-01.

REPORT TO THE STECF

EXPERT WORKING GROUP ON
Landing Obligation in EU Fisheries – Part 3
(EWG-14-01)

Varese, Italy, 10-14 February 2014

This report does not necessarily reflect the view of the STECF and the European Commission and in no way anticipates the Commission's future policy in this area

1 EXECUTIVE SUMMARY

The reformed CFP (EU regulation 1380/2013) requires that fisheries for salmon, cod in the Baltic and all fisheries for small and large pelagics will be subject to a landings obligation by 1 January 2015. The Member States with an interest in fisheries in the Baltic region have worked to produce a joint recommendation for implementing the discard ban in the region, the BALTFISH plan. EWG 14-01 was asked to provide comment on the contents the plan and to give comment and guidance where appropriate on specific elements contained within the plan. EWG 14-01 notes that the draft plan largely contained a list of proposed measures with only limited justification. EWG 14-01 reviewed each of the twelve points contained in the plan and provided specific comment on each.

EWG 14-01 considered that a number of the provisions contained within the BALTFISH plan fall outside the scope and the specificities of article 15.5(a)-(e), specifically these related to selectivity; technical measures; control; inter-annual and inter-species quota flexibilities; fixing of fishing opportunities and; allocation of fishing effort. EWG 14-01 provided no comment on these aspects. In general, EWG 14-01 considers that there is a need for more substantial information and data required to support the elements currently being proposed in the plan. These include detail on the stocks (not just the species) to be included, the fleets targeting these stocks, the gears used and their contribution to overall catches; justification for exemptions to fulfil the conditionalites associated with high survival and *de minimis*. General background information on the fleets and fisheries is considered to be particularly important for exemptions (on the basis of high survival and/or *de minimis* provisions), since a clear definition of such fleets or management units will be necessary for operational aspects of management and monitoring.

The BALTFISH plan proposes exemptions for a number of species on the basis of high survivability. However, there is a lack of supporting scientific evidence that demonstrates high survival as stipulated in article 15.4(b). Information has not been provided on the stocks covered, the fisheries or management units which will utilise the exemptions or the technical characteristics of the fisheries involved. EWG 14-01 draws the attention of the BALTFISH group to the guidelines on survival developed by EWG 13-17 to assist in such proposals. EWG 14-01 has provided further guidance and potential sources of information and data that would be pertinent to the BALTFISH plan, this also includes the identification of three existing studies relating to salmon discard survival, all of which indicate that salmon discard survival from trap nets is in excess of 80%. In addition, EWG 14-01 presents a summary of the available literature on survival of pelagic species slipped from purse seines. While the results are quite variable across experiments, a common observations is that fish mortality increases with stocking density and is substantial in many cases.

The proposed BALTFISH plan also indicates that the Minimum Conservation Reference Sizes (MCRS) should be adjusted downwards for both salmon and cod. STECF has previously commented on these proposals (PLEN 13-02) which noted that there may be sound biological reasons for reducing these MCRS to reduce the current levels of discarding. Under the landing obligation, this would reduce the level of catches that may not be sold for human consumption yet deducted from the available quota a situation which would otherwise underutilise available fishing opportunities. EWG 14-01 also draws attention to the guidelines on the setting of MCRS developed by EWG 13-17.

The draft BALTFISH plan outlines an exemption for *de minimis* (article 15.6) to deal with salmon and cod that have been depredated by seals. EWG 14-01 considers that in the strictest sense, the issue of seal depredation is not associated with inability to adjust selectivity or due to disproportionate costs of handling. However, EWG 14-01 considers that exemptions due to seal depredation are in line with the *spirit* of the regulation as seal damaged fish is not fit for human or non-human consumption and as such could be subject to costly disposal means.

EWG 14-01 has developed a series of guidelines and considerations for regional groups when seeking *de minimis* exemptions as part of discard plans. The primary conclusion is that it would be advisable for any *de minimis* catch to be estimated within the draft plans and that this should be deducted from the available catching opportunity arising from a catch forecast (i.e. not added to it) so that total catches remain within levels that are consistent with MSY objectives (article 2, EU regulation 1380/2013). EWG 14-01 notes that estimates of seal depredation are available and that these could be considered when proposing *de minimis* exemptions for seal depredated salmon and cod. EWG 14-01 further notes that seal depredation is considered in the assessment of salmon, but not in the assessment of cod.

EWG 14-01 received additional questions from BALTFISH via the Commission regarding issues surrounding sea-trout and plaice, and the allocation and distribution of fishing opportunities. EWG 14-01 provided feedback where possible but notes that some of the questions were outside the remit of the expert group while there was insufficient data and/or information presented to provide any detailed response to others. The questions essentially revolved around the full inclusion (supported by all MS) or partial inclusion (supported by some MS) of sea-trout, a non-TAC species and therefore not covered by the landings obligation; whether there was any evidence of high survival associated with gill net fisheries and whether there are any benefits in delaying the introduction of plaice into the plan until 2017 (which is legally possible). EWG 14-01 noted that there are a number of advantages in delaying the introduction of plaice given that it is currently classified as a data limited stock. ICES currently only provides landings advice (as opposed to catch advice) due to lack of discard estimates, and therefore there is no scientific basis on which to base [a reliable catch estimate which would inform]any possible future quota uplift (article 16.2, EU regulation 1380/2013). Furthermore, the lack of an analytical assessment and lack of any reference points also precludes the possibility of inter-species quota flexibility. EWG 14-01 notes that both plaice stocks are scheduled for benchmark in 2015 which may resolve these issues and provide fishing opportunities that are more in line with actual catches in the fishery. Inclusion of plaice in the plan where advice is currently based on landings would be likely to choke the fisheries early, particularly if current discard levels turn out to be substantial.

EWG 14-01 was tasked with developing an objective framework for setting *de minimis* levels considering other elements of the basic regulation namely article 2. This stipulates that exploitation rates are consistent with attaining populations that are capable of producing maximum sustainable yield (Fmsy). EWG 14-01 notes that there are several ways in which the *de minimis* rule can be interpreted and the design of the objective framework will depend on that interpretation. EWG 14-01 suggests a number of points to be considered when including *de minimis* exemptions within discard plans following from Regulation 1380/2013. These are:

i) According to recitals 29 and 31 *de minimis* is intended to be an option of last resort;

ii) To operationalise the inclusion of *de minimis* exemptions within the constraints of catch opportunities,, a definition of the management units/fleets that are to avail of the exemption are required within the discard plan;

iii) It is desirable that plans provide the maximum proposed volume of *de minimis* allocated based on Article 15(4) and how that catch has been derived;

iv) In line with Article 15(4) there is a need to outline justification for applying a *de minimis* exemption and to provide relevant supporting information;

v) To comply with the MSY objective in Article 2(2) of the CFP, the *de minimis* allocation would need deducted from the Fmsy advised catches when setting fishing opportunities for the relevant stock to ensure that catches do not exceed the advised levels for that stock;

vi) To ensure that catches do not exceed agreed limits of catch, a robust methodology for monitoring *de minimis* catches is needed. A description of this would permit some evaluation of the risk associated with using the exemption;

vii) Given that *de minimis* catches could be derived from multiple stocks, it is important that the estimation of *de minimis* volumes and the distribution of these catches across fleets/management units is described within the context of the plan;

viii) Where catch advice is not available and where TACs are not applicable, then it is difficult to see how a *de minimis* exemption could be applied.

It is noted that depending on how the *de minimis* allocation is calculated, then it is possible that *de minimis* volumes could be set at the level of the overall catch/landings advice meaning that the entire fishing opportunities for that stock could conceivably be discarded. From a stock perspective this would not result in a change in fishing mortality but would obviously disregard any potential economic benefit from that stock.

EWG 14-01 was asked in the supplementary questions from the BALTFISH group whether invoking the *de minimis* rule could be used to resolve the situation where some MS have no plaice quota and plaice is caught as a by-catch and presently discarded. Under the landings obligation these MS would be immediately choked EWG 14-01 calculated the potential economic impact (as a proxy for technical difficulty) using the CR/BER (Current Revenue/Break Even Revenue) indicator to assess the likely impact under a range of reductions in revenue (20; 30; 40 & 50% reductions). Based on some assumptions regarding gear selectivity and the impacts on catch rates, this demonstrated that revenue reductions due to loss of target catch (associated with improvements in selectivity to reduce the plaice by-catch) were in some cases economically unsustainable. If the CR/CBR indicator is re-calculated using true data and selectivity data (not based on the assumptions presented here) then the approach could be used to determine whether there was a case for *de minimis* or not.

If plaice is included in the landing obligation in 2015 the *de minimis* can only be applied up to a level corresponding to the current TAC (3,409 tonnes), which is calculated on landings only. This is to ensure there would be no additional mortality on the plaice stock through setting catches in excess of the TAC. If so desired, this means that the entire catch of plaice could be discarded i.e. the total landings left after deduction of *de minimis* would be zero. However, if all or part of the TAC is to be discarded under *de minimis* exemptions to negate choke issued associated with lack of quota, then the MS which presently holds the majority of the quota would need to decide whether to redistribute part or their entire quota to cover the discards of other Member States, some of which have no quota allocation under current relative stability arrangements.

EWG 14-01 also explored the potential application of the *de minimis* for a pelagic fishery which catches a small volume of demersal species (whiting) by-catch. Currently, the by-catch is not recorded against any TAC and is being processed as fishmeal. Under the landing obligation, it would be necessary for the pelagic fishery to obtain fishing opportunities for these catches. Alternatively, using quota flexibility, they could count the whiting catch against the herring TAC provided that the whiting stock is within safe biological limits. In the case that the whiting stock falls outside safe biological levels or lack appropriate reference points, a *de minimis* exemption under Article 15(5) could be considered based on the principle that it would be difficult to improve the selectivity in the fishery. However, by strict definition of a discard as included in Article 4(4) of the CFP (i.e., has to be returned to the sea), catches of whiting from vessels without sorting facilities would not be discards and hence the provision for a *de minimis* exemption may not be possible for these vessels.

EWG 14-01 set out broad principles that might apply to the achievement of full documentation of catches and the broad criteria that should be considered for establishing compliance risk and hence the level of documentation and verification that might be applied. EWG 14-01 provided more specific

examples (case studies) relating to Baltic fisheries and pelagic fisheries in general in order to assist in the design of discard plans. It is noted that in parallel to the work described here, the BALTFISH group and experts from the European Fisheries Control Agency (EFCA) are collaborating on specific risk analysis and broader control issues associated with the BALTFISH draft plan.

EWG 14-01 notes that there is no justification in deploying costly monitoring methods to fleet segments that pose little or no risk of non-compliance. Conversely, fleet segments which have a high impact on TAC stocks and where discarding is evident or unknown will require comprehensive monitoring in order to ensure the landing obligation is enforced and that the avoidance of unwanted catches is sufficiently motivated. EWG 14-01 has provided a risk-based framework based on a suite of indicators which could be used to assess the potential impact and likelihood of illegal discarding and the need for fully verified catch documentation.

The relative risk score (1-4) is estimated by assessing various elements of the fishery, including the reliance on TAC (regulated species); current knowledge of discard rates; economic incentives to discard e.g. prevalence of choke species; past compliance performance; ability to improve selectivity; ability to sort and record all regulated and assessment of ability to monitor exemptions.

Given the implementation timescale for Baltic fisheries and for EU pelagic fisheries generally, EWG 14-01 further considered requirements for documentation of pelagic species using the Baltic Sea non-human consumption sprat fishery as a case study. This fishery has a known issue of herring by-catch which provides a strong incentive to slip catches. EWG 14-01 explored a range of options with the intention of ensuring that all catches are retained on board (no slipping). The appropriate level of coverage either through observer or REM systems should be determined taking into account ability to provide assurance and cost-effectiveness.

2 INTRODUCTION

The introduction of the landing obligation in the reform of the Common Fisheries Policy (CFP) represents a fundamental shift in the management approach to EU fisheries, switching the focus from the regulation of landings to catches as well as introducing regionalised decision-making into the management of EU fisheries.

A number of scientific and technical issues were examined by an STECF EWG (EWG 13-16) set up with the purpose of providing advice and guidance for the Commission, Member States and the stakeholders to assist in the implementation of the landing obligation. EWG 13-16 provided advice on survivability, *de minimis* and inter-species quota flexibility, discard data issues and control and monitoring issues. A second meeting of this EWG (EWG 13-17) has provided further guidance specifically to assist Member States in formulating joint recommendations that will form the basis of regional discard plans. EWG 13-17 also identified circumstances leading to restrictions in fishing activity associated with restrictive quotas (so-called "choke species"). In combination these two meetings have provided a valuable insight into the implementation of the landing obligation for the Commission, Member States and Advisory Councils.

The first timeline in the Basic Regulation of the CFP is the introduction of the landing obligation for pelagic, industrial and also salmon fisheries in the Baltic from 1 January 2015. Other fisheries in the Baltic (other than pelagic, industrial and salmon) also have a start date of 1 January 2015 but with a 2–year transitional period to allow full implementation by 1 January 2017.

In order to further assist regional groups, it was proposed to hold a third STECF EWG in early 2014 to facilitate the development of the joint recommendations and also undertake further analysis of technical issues relating to survivability and the *de minimis* exemption. If available the EWG will use the work carried out to date in the Baltic and for pelagic fisheries as test cases.

In the Baltic Sea, joint recommendations have been well advanced by the BALTFISH group. These draft joint recommendations would implement the landing obligation in the Baltic Sea from 1 January 2015 for all species currently subject to TACs: cod, plaice, herring, sprat, salmon and possibly one non TAC species: sea trout. For the pelagic fisheries regional groups of MS and the PEL AC have begun working on the development of discard plans for pelagic stocks in western waters and the North Sea.

Several regional groupings have raised specific issues regarding survivability and the setting of *de minimis* levels. In this regard the EWG is requested to consider survivability in respect of the exemptions being discussed in the Baltic (for salmon) and by the PEL AC (in purse seine fisheries). The EWG is also requested to develop an objective framework for setting *de minimis* levels taking account of FMSY and Precautionary Approach considerations as well as monitoring issues.

2.1 Terms of Reference for EWG-14-01

1. Evaluate the various elements of the BALTFISH draft joint recommendations. Identify areas where additional supporting information may be required.

2. Review the current scientific knowledge on the survival of salmon and identified small pelagic species and where appropriate, provide guidance on additional scientific information that may be required in support of applications for species specific exemptions based on high survival.

3. Develop an objective framework for setting *de minimis* levels taking account of the provisions of article 2 of the basic regulation (e.g. FMSY and Precautionary Approach considerations)

4. Review the control and monitoring issues associated with the documentation of catches to be specified in discard plans.

5. Test this framework using worked examples form Pelagic fisheries and the Baltic Sea.

3 EVALUATION OF THE BALTFISH DRAFT JOINT RECOMMENDATIONS (TOR 1)

The Expert Group notes that the draft BALTFISH plan presented to the group, largely contained a list of proposed measures with little or no justification. The limited supporting data and information meant that the ability of the group to provide an informed opinion on the appropriateness and utility of the proposed plan was restricted. However, the Expert was able to advise on and identify data needs and appropriate sources that would help in the formulation of the discard plan.

3.1 Specific comments and guidance for the points given in the BALTFISH plan

1. Species to be included in the discard ban from 2015

STECF considers that the current draft plan would benefit from a more detailed description of the relevant fisheries and specifically which stocks are to be included i.e. Salmon in Subdivision 32; Salmon in Subdivision 22-31 etc. *Inter alia*, gear type; area of operation; catches of species to be included in the plan; fishing effort etc. This data should be available from existing sources (e.g. DCF; ICES; STECF). By defining the fleets or management units (see EWG 13-17) particularly for which

exemptions are being sought i.e. *de minimis* allocations and/or fleets availing of exemptions for fisheries based on high survival would help in stock assessment and also for monitoring.

2. Exemptions (survival) for certain types of fisheries

The BALTFISH group has proposed exemptions for four species (salmon, plaice, sea trout and cod) based on high survivability. EWG 14-01 note that unless specifically included in the BALTFISH plan, there is no need to apply for an exemption for sea trout as it is not covered under the landing obligation (i.e. a non-TAC species). EWG 14-01 note that article 15.4(b) states that "*The landing obligation referred to in paragraph 1 shall not apply to: species for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystem.*" EWG 14-01 notes that there is no scientific evidence presented in the draft plan. It is felt appropriate by EWG 14-01 that the BALTFISH group provide species and fishery specific evidence to allow evaluation as to whether there is a basis for the species that exemption based on high survival is being sought. EWG 13-17 provided generic guidance on the types of information and data that would be help to undertake such an evaluation.

EWG 14-01 has elaborated on these guidelines using examples pertinent to the BALTFISH group (see section 4.1)

3. Year-to-year flexibility and inter-species flexibility

EWG 14-01 notes that provision for between species and inter-annual quota flexibilities are not specifically required in regional discard plans as specified in article 15.5(a)-(e).

4. Selectivity

EWG 14-01 notes that provision for technical measures are not specifically required in regional discard plans as specified in article 15.5(a)-(e).

5. Minimum landing size/minimum conservation reference size and selective fishing for cod and salmon

EWG 14-01 notes that EWG 13-17 provided general guidance on adjusting MCRS while STECF has provided a specific opinion on adjusting MCRS for both cod and salmon .The guidelines produced by EWG 13-17 notes that it would be appropriate to include justification on the basis of adjusting MCRS.

EWG 14-01 considers that information to demonstrate that the introduction of the proposed MCRS is likely to achieve the stated objectives. Such information, where possible, should include results of simulations, which show the potential impacts on the quantity of fish being retained for human consumption or the potential fleet reactions of adjusting; removing; or introducing MCRS. EWG 13-17 noted that there are a variety of issues that regional groups may wish to take into account when considering the desirability of introducing a MCRS, these include the setting of MCRS for market considerations, limiting the supply of particular size ranges to prevent oversupply; social or ethical reasons e.g. minimizing catches that cannot be sold for human consumption; biological and ecological considerations e.g. to encourage a change in exploitation pattern for example to realise the growth potential of the stock and/or to reduce the fishing mortality on juveniles.

The BALTFISH group has suggested decreasing the MCRS from 38 to 35 cm in Baltic cod. EWG 14-01 notes that it is unclear whether this request applies to either the Western or Eastern Baltic Cod stock or both. STECF has previously concluded that it is likely that such a reduction will have a positive impact on the economic performance of the fisheries while at the same time not leading to increased mortality for the cod stock (STECF Plenary Report, July 2013). Furthermore, it was concluded based on the size composition in the catches, that presently the most efficient way to minimize discard of cod would be to lower the minimum landing size from 38 cm to 35 cm (Lot1 report). Another argument to reduce the MCRS is the fact that cod in the Baltic presently has a different MCRS compared to the Kattegat, Skagerrak and the North Sea, although these stocks are considered more productive. The

maturity ogive and first spawning is appearing at a much younger age / smaller size in the Baltic compared to the adjacent waters and there is therefore no argument in respect to first spawning for having this relatively large MLS in the Baltic (Table 3.1-1, 3.1-2).

	Skagerrak/ Kattegat	North Sea	Baltic
Cod	30 cm	35 cm	38 cm
Flounder	25.5 cm	25.5 cm	23 cm(SD 22-25)
Plaice	27 cm	27 cm	25 cm
Salmon	60 cm	60 cm	60 cm (SD 22-30+32)
			50 cm (SD 31)

Table 3.1-1 MLS for some species in the Baltic Sea

Recent analysis of cod growth suggests reduced growth levels since 2007 (Figure 3.1-1). Consistent with an increasing Eastern Baltic cod stock in the current main distribution area of cod (Subdivision 25, and to a lesser extent Subdivision 26), the mean weight of larger cod has sharply declined in recent years, indicating stock density dependence in a restricted area. Survey data further indicate that whereas fish > 38 cm are currently almost absent in the surveys; the amount of fish below MCRS is still increasing. In an attempt to statistically determine what factors that could explain the reduction in growth it was concluded that cod growth was mainly affected by cod abundance (Pers com J. Hjelm).

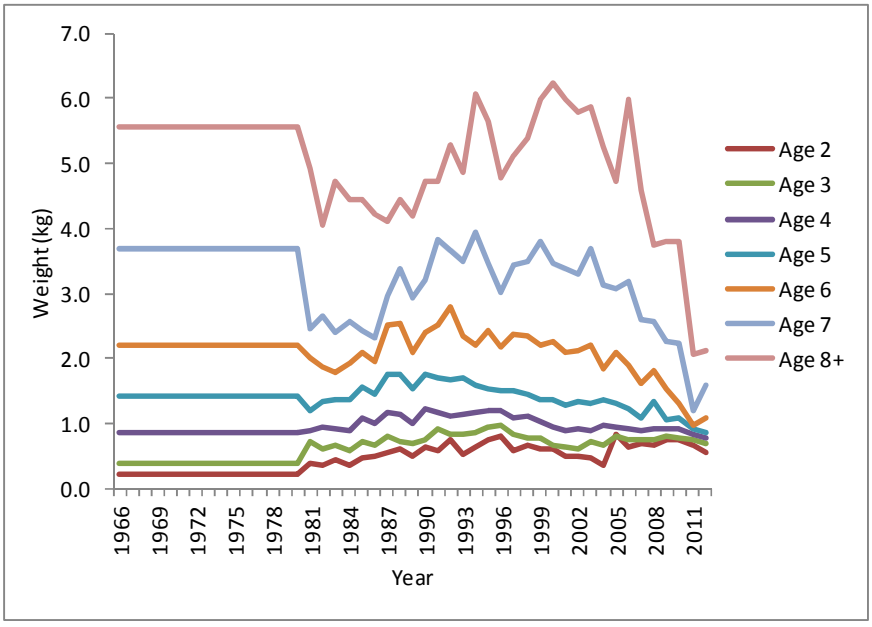


Figure 3.1-1 Weight at age in catch (WGBFAS 2013).

Age group	North Sea / Skagerrak ture	Baltic
1	0.01	-
2	0.05	0.13
3	0.23	0.36
4	0.62	0.83
5	0.86	0.94
6	1.0	0.96
7+	1.0	0.96
8+	-	0.98

Table 3.1-2 Proportion mature in Skagerrak / North Sea and Baltic

The recent slow growth in cod has resulted in dramatic decrease in quota uptake in 2013. In 2013 the proportion of cod > 38 cm was less than 9 % in numbers (based on Q1 BITS; Figure 3.1-1), which is the lowest proportion observed since 1991.

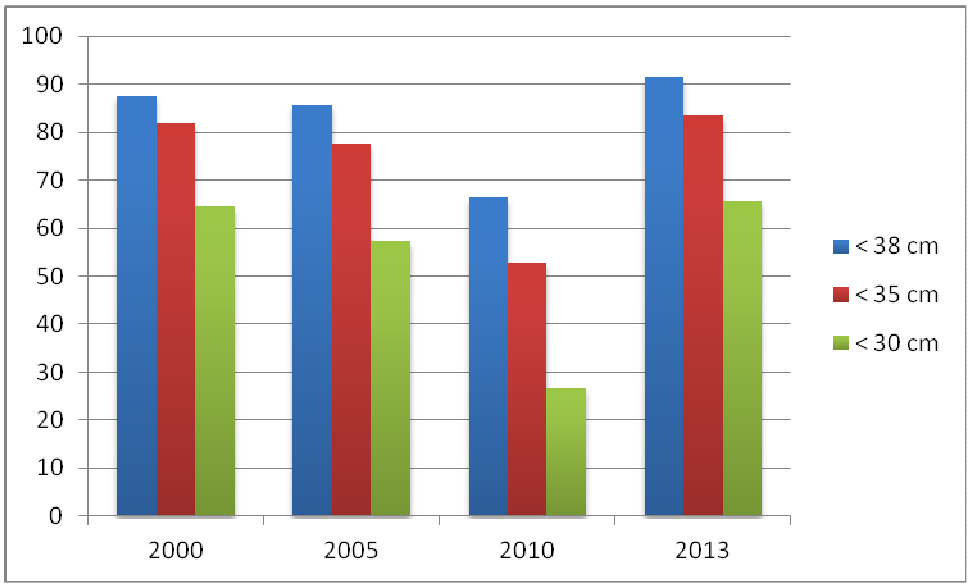


Figure 3.1-2. Proportion (numbers) of cod above 38, 35 and 30 cm based on Q1 BITS survey.

STECF previously provided comment on the potential impact on adjusting the minimum size of salmon on the level of discards. (PLEN 02-13) considered that a more efficient way of reducing discards of undersized salmon would be to reduce the minimum landing size in subdivisions 22 to 31 in the commercial fisheries. The minimum landing size is 60 cm in subdivision 22 – 31 and 50 cm in subdivision 32. The TAC for salmon in the Baltic is expressed in number of salmon. This means that the quota outtake is independent of the size of salmon caught. With no change in minimum landing size salmon currently being discarded because of their size would under a discard ban be landed, counted against the quota and used for other purposes than human consumption. A reduction in minimum landing size would likely result in some of these salmon being used for human consumption. This will however depend on the landings price by size of the landed catch. It is noted however, that discards of undersized salmon play only a minor role (approximately 5% of the total reported catches). This number is even lower when including non-commercial catches (ICES 2013).

The majority of discards of marketable salmon is due to seal damage (ca 5%). Only a small number of smolts are caught in the coastal gillnet fishery. The release of undersized fish is highest in the Polish longline fishery with 2,1%.

6. *De minimis* rule

EWG 14-01 considers that the issue of seal depredation is not really associated with inability to adjust selectivity or due to disproportionate costs of handling. However, EWG 14-01 considers that applying a de minimis exemptions due to seal depredation might be appropriate as seal damaged fish is not fit for human or non-human consumption and to dispose of such fish ashore would be costly.

It is important though such catches are documented to quantify mortality caused by seals. However, EWG14-01 recognises this is not easy and would require at vessel level, seal damaged fish to be recorded in terms of head count as it is typically only the head and part of the that remains. For cod, it would be useful to describe a methodology for raising the piece count of damaged fish to live weight using an appropriate raising factor in the discard plan although this may require further analysis by STECF/ICES to assist in developing such a methodology and in practice, this may be difficult and will depend on the type of body parts that are left in the net.

EWG 14-01 also provided guidance on the application and description of the *de minimis* rules that could be considered by the BALTFISH group when drafting the joint recommendation (see section 4.3).

7. Fishing effort

EWG 14-01 notes that provisions for setting fishing effort allocations are not specifically required in regional discard plans as specified in article 15.5(a)-(e).

8. Fixing of fishing opportunities

EWG 14-01 notes that provisions for setting fishing opportunities are not specifically required in regional discard plans as specified in article 15.5(a)-(e).

9. Technical measures

EWG 14-01 notes that provision for technical measures are not specifically required in regional discard plans as specified in article 15.5(a)-(e).

10. Provision on documentation

The current draft outline discard plan states: All species shall be recorded with the correct species name in order to quantify the exact catches when applying the inter-species flexibility provision catches may be counted against the quota of another species. EWG 14-01 notes that inter-species flexibility is outside the scope of a discard plan.

It is considered that although the MCRS for cod is to be reduced there is still a risk of discarding to preserve quota for high value catches. Current marketing restrictions also prevent the sale of cod above MCRS but below a certain weight which provides a further driver for discarding.

To ensure full documentation of catches in the demersal trawl fishery there is a requirement to effectively verify that discards such as plaice are accurately recorded. If for example discards of plaice are allowed through the *de minimis* exemption, regional groups should ensure that the discard plan provides for sufficient verification of self- reported discards, or implement a monitoring program which promulgates a sound estimate of discard levels against the *de minimis* allowance.

Similarly, if the decision is made to postpone the introduction of plaice under the landing obligation until 2017, the documentation of plaice discards in the interim period should be comprehensive.

11. Control measures

EWG 14-01 notes that control provisions are not specifically required in regional discard plans as specified in article 15.5(a)-(e). However, plans are required to provide information on the provisions for the documentation of catches. See EWG 13-16/EWG 13-17 for general comment.

12. Evaluation

While there are no requirements to include metrics (indicators) to assess the potential impacts and performance of the landings obligation, EWG 14-01 notes that the BALTISH group has described such provisions. EWG 14-01 consider this to be an important and useful inclusion. The BALTFISH group notes *"The discard ban constitutes a new regime in European fisheries management. Consequently, it seems appropriate to evaluate the functioning of the discard plan after one or no later than two years depending on the urgency for amendments and adjustment of the plan in place. In terms of fishing practices the introduction of the landing obligation constitutes an incremental process which most likely will demonstrate needs for adjustments within a relative short period of time.*

EWG 13-17 notes that in particular, the introduction of landing obligation into mixed demersal fisheries managed through multiple, single-species TACs is like to pose particular challenges through the 'choking' of fisheries through exhaustion of one or more individual species quota. EWG 14-01 note that broad scale mixed fisheries analysis aimed at identifying individual metiers where choke issues may be problematic may provide useful information and allow for pre-emptive responses.

EWG 14-01 notes that the introduction of the landing obligation may result in significant changes in fishing patterns, driven by the desire to avoid the capture of fish with no inherent value but are still counted against quota i.e. fish <MCRS. Results associated with fully-documented fisheries elsewhere, have shown both tactical and technical adaptations emanating from the fleets concerned. These can have significant potential benefit e.g. increasing the age at first capture and/or some unintended consequences e.g. re-distribution of effort between fleet segments or towards areas that may have other conservation objectives e.g. spawning aggregations.

It is important that as much information as possible is collected concerning the different elements allowing for swift responses and adjustments for ensuring appropriate implementation of the measures."

EWG 14-01 notes that to facilitate those drafting and evaluating the joint recommendations and also the Commission to make an informed decision about the potential impacts, whether the plans are likely to function as intended, and to assess what the broader economic and social consequences may be. EWG 14-01 notes that the following information would be useful.

- **Status quo analysis:**
    - By MS fleet, stock and metier.

Existing structure, activity, quota allocations and uptakes, current swapping arrangements, discard levels, economic performance, and employment of all the fleets operating within the confines of the plan. (see STECF 14-01 p.14, 25)

- **Potential impacts of high survival exemptions** – (see section 4.1)
- **Choke analysis:**
    - Which stocks/species are going to cause the most problems and for which fleets?
    - Analysis of number of days per fleet before quota runs out – see reference studies from last STECF report (STECF 14-01 p.55-56).

- What will be the likely economic impact on the fleet if none of the flexibilities or exemptions is used? (i.e. impact of doing nothing)
- Is quota leasing available, will it help alleviate potential choke issues? Is there enough unused quota in the system?
- Are quota swapping arrangements available and will they help in alleviating choke issues? Will the same swaps between MS simply continue or will things change?
- Are inter-species quota flexibilities available, what would the impacts be in terms of lost revenue of target-species, to what extent would flexibilities alleviate choke issues?
- Are *de minimis* allocations available, to what extent could they resolve choke issues and what are the broader impacts e.g. transfer of fishing opportunities between MS, generation of a market for *de minimis* discard allocation? (see section 4.3)
- What is the scope and potential impacts of deploying exemptions and flexibilities (see EWG 13-16)?
- What is the likelihood of the fleet(s) of going out of business regardless of which flexibilities and exemptions are used, and how might this incentivise non-compliance?
- Assuming full compliance, will the number of vessels within the fleet need to reduce in size in order to maintain viability? What would be the employment and value added implications of that?.

- **Tactical and Technical improvements/changes:**
  - What are the potential options for improving selectivity in the fisheries covered in the plans?
  - Is it likely that selectivity improvements will solve or reduce choke problems?
  - Is there a notable change in the age structure in landings composition?
  - Is there any evidence of changes in the population structure?
  - Is there any evidence of changes in fleet activity through VMS analysis e.g. avoid areas of small fish

3.2 Additional request for comment from the BALTFISH group

EWG 14-01 received additional questions from BALTFISH via the Commission regarding issues surrounding sea-trout and plaice, the allocation and distribution of fishing opportunities. EWG 14-01 notes that in general, more information (and time) would be required to address these fully given that a number of the questions were quite detailed and that some questions are outside the remit of STECF e.g. fixing and distribution of fishing opportunities.

EWG 14-01 has provided some initial comment where possible to these additional questions, but in the majority of cases, the limited supporting evidence and the time available during the meeting precluded a full analysis.

BALTFISH has suggested including sea trout as one species subjected to the landing obligation. STECF notes that the sea-trout are being considered for inclusion although there is no legal obligation to do so (non-TAC species). It is unclear why only sea trout is included and not for example flounder or any other non-TAC regulated species. Including a non-TAC regulated species also requires elaboration and additional supporting information on the other aspects of the discard plan if *de minimis* and survival exemptions are to be considered for these species for example. Furthermore, if exemptions are being sought, then the objective of including a non-TAC species in the first instance and then applying for a subsequent exemption e.g. based on high survival is unclear. There may however, be advantages for including sea-trout in the discard plan given its association with salmon. While it is mandatory to land salmon, which is caught in the same fishery, not having sea-trout specified in the plan may present problems given that it is difficult to distinguish between the two species which may result in salmon being misreported as sea-trout (a non TAC species). This difficulty in species differentiation has led to observed problems with the current high-grading ban which would most likely continue under the landing obligation.

WGBAST (2013) note that misreporting salmon as sea trout is considered substantial. It is estimated that accounting for misreporting of salmon as sea trout would increase the discard estimates of salmon sixfold.

EWG 14-01 has also been asked to comment on applying the landing obligation for sea trout in only specific geographic areas (waters of several Member States), e.g. outside coastal waters territories, instead of the whole Baltic Sea Basin. EWG 14-01 notes that there is no supporting documentation or objectives outlining why a partial inclusion would be considered and as such is not able to comment. The objectives behind the proposed exemptions are not fully explained. If different countries would like to increase the protection of sea trout in territorial waters, there are studies suggesting that sanctuaries and regulation of fishing time/periods may be more effective.

EWG 14-01 is unable to comment on the potential survival of sea-trout discarded from gillnets but considers that the survival is likely to be considerably lower when compared to fish that have been discarded from fixed trap nets. If there is a desire to exclude sea-trout caught in gillnets from the landing obligation in certain fisheries based on high survival (assuming the species is to be included in the overall plan), then survival studies would be required. EWG 13-16 has provided guidance on such studies required and further information will be available from the ICES Expert Group (WK Methods for Estimating Discard Survival)

EWG 14-01 notes that the BALTFISH group sought additional opinion on deferring the inclusion of plaice under the landings obligation until 2017. EWG 14-01 notes that both plaice stocks (PLE21-23 and PLE24-32) are scheduled for benchmark by ICES in 2015 and a data complication workshop is planned by ICES for autumn 2014. Presently, there is limited data and of variable quality on the levels of plaice discards between MS. These data are not presently included in the assessment, and therefore ICES provides advice on landings only (rather than catch advice). Inclusion of plaice under the landing obligation in the absence of discard data could severely restrict fishing activity if actual catches are in excess of the present TAC as plaice would then become a “choke” species. Presently both plaice stocks are considered as data limited and do not have Blim or Flim reference points, as needed to be considered “within safe biological limits” (article 4.18, EC regulation 1380/2013). This indicates that the 9% rule (article 15(8)) in which the Member State with no quota, could deduct from the quota of the target species cannot be applied. However, again a benchmark could produce new reference points, which would allow the use of this flexibility in the future.

It is also noted that in at least one member state, fishermen are obliged to discard spawning female plaice and delaying introduction of plaice in the discard plan may allow time for this regulation to be harmonized or for work to be undertaken to assess the level of survivability as the national regulation will inconsistent with the landings obligation.

EWG 14-01 was also asked to comment on the potential application of the *de minimis* exemptions to allow continued discarding of unwanted plaice by-catch for member states without plaice quota following the introduction of the landing obligation. ToR 2 of EWG 14-16 specifically asks for the development of an objective framework for setting *de minimis* levels and ToR 4 asks for this framework to be tested using worked examples from the Baltic region. To provide a response to the supplementary questions raised by BATLFISH, EWG 14-01 has used the plaice by-caught in the targeted cod fishery as a worked example. This is shown in Section 4.5 but it is stressed this is purely for guidance.

4 REVIEW THE CURRENT SCIENTIFIC KNOWLEDGE ON THE SURVIVAL OF SALMON AND SMALL PELAGIC SPECIES (TOR 2).

4.1 Survival issues relating specifically to BALTFISH plan, including Salmon

EWG 14-01 considers that in cases where an exemption(s) under 'high survival' are included in joint recommendations, the need for supportive information is specified in Article 15 and was elaborated on by EWG 13-17. EWG 14-01 has provided further guidance and detail is issued on the supportive information suggested. This additional guidance can be applied to all future Discard Management Plans proposing a 'high survival' exemption. EWG 14-01 has provided examples of specific relevance to the BALTFISH draft joint recommendations in this context.

4.1.1 Guidance notes for the BALTFISH Discard Management Plan – specifically on exemptions for high discard survival

EWG 13-17 identified a list (11 points) that could be considered and included in any supporting information when seeking exemptions based on high survival. Article 15.4(a) states that, the landing obligation shall not apply to "species for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practice and of the ecosystem". EWG 14-01 considers that this requires that scientific evidence and information is presented to undertake an evaluation and that exemptions are fishery specific meaning that sufficient evidence on the specific characteristics of the fishery are presented.

While the on first inspection, the necessary requirements to satisfy these points may seem overly prescriptive, much of the data and information is readily available and would be required for other provisions (e.g. *de minimis* exemptions).

There are eleven questions put forward to provide a justification for a 'high-survival' exemption to be fully evaluated. These questions are detailed below and contain some suggested "Guidance" as to how these may be appropriately answered ("in italics"). However, EWG 14-01 stresses that the choice of whether a species/fishery should be exempted is a decision for managers as outlined by STECF in earlier reports (EWG 13-17).

Q1. Define the selected species for which the exemption is being sought.

Guidance

Provide common and Latin names of the fish species of interest

E.g.

Atlantic salmon (Salmo salar)

Plaice (Plueronectes platessa)

Cod (Gadus morhua)

Q2. Define the stock or stocks of the selected species for which the exemption is being sought.

Guidance

This should be consistent with the stock(s) as defined in the management context and include the assessed status of the stock.

E.g.

Atlantic salmon Baltic Sea subdivisions 22-31

Atlantic salmon Baltic Sea subdivision 32

Plaice Baltic Sea subdivision 21-23

Plaice Baltic Sea subdivision 24-32

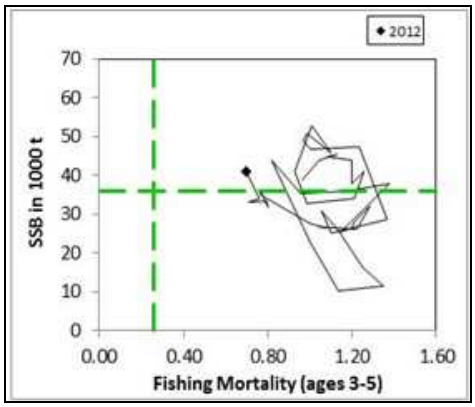
Cod Baltic Sea subdivision 22-24

Cod Baltic Sea subdivision 25-32

Sea trout Baltic Sea subdivision 22-32

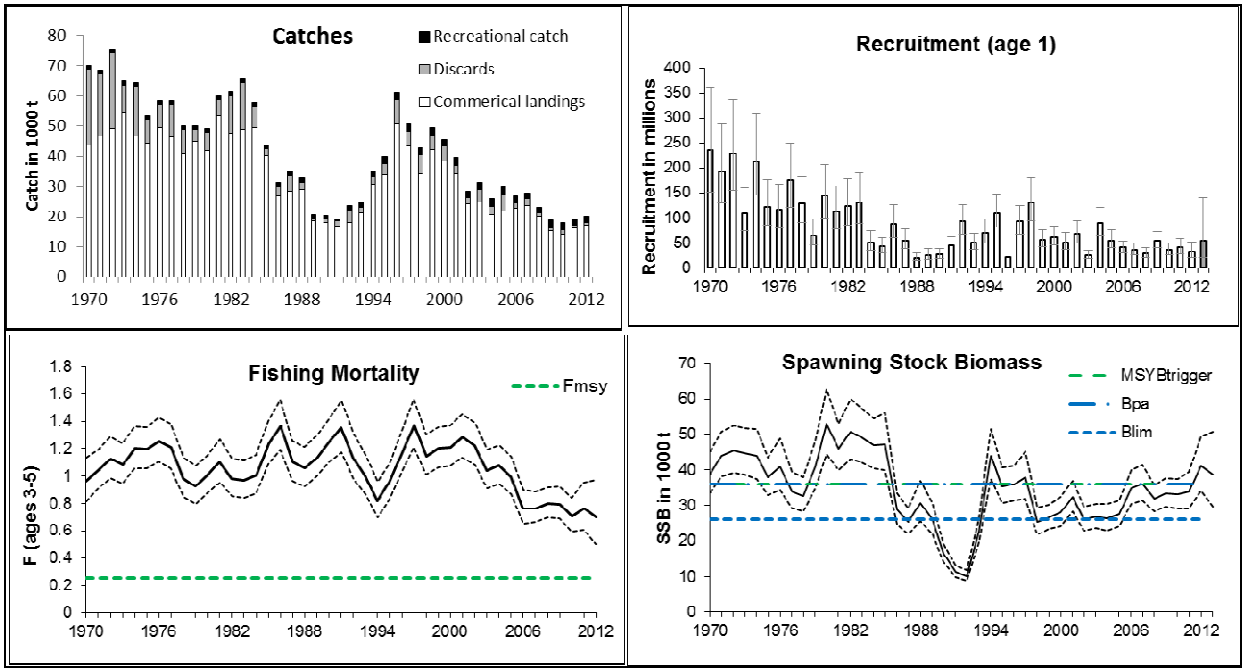
Etc.

Please also include some text on the stock status summary as described in the latest ICES assessment. An example is given below.



F (Fishing Mortality)			
	2010	2011	2012
MSY (F_{MSY})	✗	✗	✗ Above target
Precautionary approach (F_{pa},F_{lim})	?	?	? Undefined
Management plan (F_{MGT})	✗	✗	✗ Above target

SSB (Spawning Stock Biomass)			
	2011	2012	2013
MSY ($B_{trigger}$)	✗	✓	✓ Above trigger
Precautionary approach (B_{pa},B_{lim})	o	✓	✓ Full reproductive capacity
Management plan (SSB_{MGT})	?	?	? Undefined



Q3. Define the management unit (group of vessels) for which the exemption is being sought.

a) The gear types employed (fishing method, net configuration, mesh sizes, selective devices etc)

Guidance

Use the DCF gear classifications. Make sure that the exemption requested is for all fishing activity that is categorised by these gear codes.

E.g.

Trap-nets/pound-nets (DCF gear type classification FPN)

Creels/pots (DCF gear type classification FPO)

Fyke-net (DCF gear type classification FYK)

b) The catch composition (volumes and proportions of species caught, categorised by discards and retained, including variability in catches where possible)

Guidance

Provide available data derived from observer programmes and self-sampling that is collected through the DCF and other initiatives (for example Danish and German data collected within the Fehmarn Belt Fish and Fisheries Investigations project covering pound net samples from 2008-2011, German pound net data from 2013 which contain data about cod and plaice)

A potentially useful source of information is the report: ICES. 2013. Report of the Baltic Salmon and Trout Assessment Working Group (WGBAST), 3–12 April 2013, Tallinn, Estonia. ICES CM 2013/ACOM:08. 336 pp.

c) The operational characteristics of the management unit, for example, trip durations, tow durations or soak times, deck handling and catch sorting practices;

Guidance

Example text that might be used to describe the operational characteristics:

***Fyke nets, pound nets and trap nets** are considered here to be the same fishing method, with some differences in the size and the constructions used: A typical fishing pattern for these fishing methods are:*

- *Net are staked out perpendicular to the coast in permanent location for the season*
- *Nets can be used to target pike-perch, eels, salmon, herring, whitefish*
- *If quota reached for one species, then it will be subsequently discarded (typically salmon)*
- *Nets are emptied every day or for more days (? Up to a week) if it is poor weather*
- *Designed to not gill fish and keep seals out as far as possible*
- *Fish are always underwater until the trap is emptied*

- *No baits are used with this fishing method*

Pots: *Clarification will be required on the requested exemption for pots: i.e. does this refer only to the cod pots used in Sweden?*

d) The variability within the defined management unit in the above.

Guidance

A description here might include such information on:

- *The mechanism by which the nets are emptied (air, hand, machinery lift etc)*
- *Pontoon traps*
- *Variations in the seasons during which the gear is employed*
- *Species targeted (pike-perch, eels, salmon, herring, whitefish)*
- *Depth of water*
- *Does trap construction significantly differ between areas? (See paper below)*

Fisheries Research 73 (2005) 99–109. Temporal and regional patterns in seal-induced catch and gear damage in the coastal trap-net fishery in the northern Baltic Sea: effect of netting material on damage. Tiina Kauppinen, Antti Siira, Petri Suuronen

Q4. Describe the discard profile of the selected species including discard rate, age composition, seasonal and temporal patterns, confidence and variability in the data.

Guidance

Provide available data derived from observer programmes and self-sampling that is collected through the DCF and other initiatives (for example Danish and German data collected within the Fehmarn Belt Fish and Fisheries Investigations project covering pound net samples from 2008-2011, German pound net data from 2013 which contain data about cod and plaice)

A potentially useful source of information is the report: ICES. 2013. Report of the Baltic Salmon and Trout Assessment Working Group (WGBAST), 3–12 April 2013, Tallinn, Estonia. ICES CM 2013/ACOM:08. 336 pp.

Q5. Describe any selective measures developed, implemented, taken up and having potential to reduce catches of the selected species, including the provision of evidence of success and impact of these measures.

Guidance

There is scope to include some text on modifications that have been made to the fyke, trap and pound nets, which have been developed to reduce depredation by seals. For example the inclusion of outer cages around the 'fish house', use of netting, blockage lines, grids at the entrance to the 'fish house'. Could also mention here that traps are designed not to mesh the fish but to guide them to the 'fish house'.

Q6. Provide an evaluation of the effects of the landing obligation on the stock of the selected species compared with the effect of exemption under the high survival provision. This could include reference to the status of the stock in the context of management plans/objectives for this stock.

Guidance

Should aim to answer the two questions below:

- *What is the proportion of the total catch of the selected species that can be attributed to the fishing gears requested for exemption?*

- *What are the implications for meeting stock targets for having an exemption under the survival exemptions versus having a landing obligation for the selected species and gears, quantified where possible?*

A stock assessment scientist might be needed to help with this. Where stock assessments are in place, scenarios can be run to forecast the impact on the stock of implementing the landing obligation compared with having an exemption under the survival provision. This requirement is likely to be increasingly important in situations where larger quantities of the stock/ total catch are potentially affected by the metier covered by the 'high survival' exemption request. This may not be required if the only a small or insignificant part of the total catch is caught by the gear type requesting a high survival exemption.

Q7. What independent evidence can be supplied to support the request for the 'high survival' exemption?

Guidance

- *Provide details of the source of the information, for example, published papers, reports, newly acquired data.*

- *Provide details of the experimental approaches applied to estimate discard survival, for example, captive observation, vitality assessment, tagging, biotelemetry etc., and justification of the selected methods. Such information may be detailed in the study reports or the papers themselves.*

- *Provide a description of the experimental design, including the treatment of experimental and control specimens, and the level of replication. Such information may be detailed in the study reports or the papers themselves.*

- *It is preferable to provide more than one publication / study as supporting evidence of high survival.*

- *Peer reviewed work is preferable but all relevant sources of information may be submitted as supporting evidence.*

- *Relevant studies detailing survival rates are particularly useful. Include such supporting evidence with the discard plan.*

- *Provide executive summaries of the technical details and principal findings from such studies, for example:*

Salmon: Example summaries of some relevant papers on the survival of salmon

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Paper 1. **Siira et al (2006) Fisheries Research 80 280- 294 Survival of Atlantic salmon captured in and released from a commercial trap net: Potential for selective harvesting of stocked salmon.**

Salmon, tagging, long-term survival, Baltic Sea (Gulf of Bothnia), traps, peer reviewed, no controls so model assumptions used. The survival rate was estimated to be a maximum of 89% (79-96%).

Paper 2. **Fjalling (2013) Litteraturgenomgang och radgivning gallande skonsamma och selektiva redskap for laxfiske. SLU Internal Report DNR SLU.aqua.2014.5.5-4. 17pp (in Swedish).**

Salmon, review paper, reviewed different global fishing methods and salmon survivability, 39 peer-reviewed articled examined plus 12 grey articles. Concludes that survivability of salmon released from traps is high (89-93%), assuming gentle capture and handling. NB: Excludes pontoon traps.

Paper 3. **Hindrances to upstream migration of Atlantic salmon (Salmo salar) in a northern Swedish river caused by a hydro-electric power station. Peter Rivinoja Skip, McKinnell and Hans Lundqvist. Regulated rivers: Research and management. Regulated. Rivers: Res. Mgmt. 17: 101–115 (2001). DOI: 10.1002:rrr.607**

Salmon, long term survival, Baltic river, radio tagging, 80 salmon tagged having been previously trapped were then released. Survival rate of 85% was recorded within the released salmon.

Guidance

The validity and credibility of such survival references are likely to be assessed in relation to the 'high survival' exemption currently being sought. Typical assessment criteria to be used would be:

- *The **representativeness** of the experimental trials and data relative to the management unit as defined. This will include whether the data were obtained from the management unit as it is defined, from which components of the management unit were data generated and, the level of extrapolation of the results to enable the inclusion of the all components and activities of the management unit.*

- *Details of the **analyses and statistical methods** used to generate estimated discard survival rates. This will include the methods used to decipher data generated by data storage tags (DSTs) and methods to identify factors influencing variability in survival rates.*

- *Considerations given to estimating discard survival rates across the full **age/length structure** of the catch.*

- *The identification of **factors influencing survival** (biological, environmental and operational), and the potential to introduce measures to enhance survival, including the cost implications for these measures.*

- *The **variability and confidence** in the **discard survival rate estimates**.*

- *A description of the **potential limitations of the study**, this will include details and implications of underlying assumptions.*

- *A **comparison of the results** from new studies presented with outputs from other relevant studies.*

Q8. How would an exemption be monitored to ensure that it is applied only to vessels within the management unit as defined?

Guidance

Explain how will the exempted management unit (fishery) be defined and monitored for control purposes? This might need some input from control agencies.

Q9. How would discarding under an exemption be recorded?

Guidance

Explain or describe the methods to be used to record discarded individuals if the exemption were to be issued. Explain how this information will be made available to feed into the relevant stock assessments.

Q10. Are there any relevant studies on survival planned for the future?

Guidance

Provide a description of future planned work relevant to this exemption.

Q11. Are there any other expected benefits or known risks (economic, environmental) of the provision of an exemption from the landing obligation on the basis of high discard survival?

Guidance

Here is the opportunity to provide any other supporting information that is considered to be of relevance.

4.2 Synthesis of survival experiments focussing on small pelagic.

There are a number of peer-reviewed papers on the survival of herring, mackerels, sardines and vendace from purse seines. Seventeen (17) papers are briefly reviewed here and provide a degree of both qualitative and quantitative insight on the issue of discard survival of these species. EWG 14-01 considers that any proposals for exempting pelagic species on the basis of high survival could consider the outcomes of the studies listed below, plus any additional sources of information that may be available.

Pelagic survival references examined:

Goncalves, J. M., Bentes, L., Monteiro, P., Coelho, R., and Corado, M. 2004. Reducing discards in a demersal purse-seine fishery , ICES CM: 2004.

Demersal purse seine (shallow water) caught and discarded *Scomber japonicus* and *Sardina pilchardus* - reported "that in all sets most, if not all, animals were discarded dead or in such a condition that their survival was unlikely". The inclusion of a large mesh BRD in the purse seine was reported as improving survivability but no quantitative details were given.

Huse, I., Vold, A. (2010). Mortality of mackerel (Scomber scombrus L.) after pursing and slipping from a purse seine. Fisheries Research, 106:54-59.

Atlantic mackerel. Five experiments (with controls) that simulated purse seine crowding and subsequent slipping. 3-6 day monitoring of survival. 0-20% survival among the crowded fish compared to 54-100% survival for controls.

Suuronen, P., Erickson, D. L., Orrensalo, A. (1996). Mortality of herring escaping from pelagic trawl codends. Fisheries Research, 25:305-321.

Mortality of Baltic herring (*Clupea harengus* L.) escaping through the meshes of 26 and 36 mm diamond mesh codends attached to pelagic trawls and those escaping through open codend after 30 min towing was studied in cages during 1.5-9 days. No differences between survival rate of escapees from 26 and 36 mm codends and those who escaped through open codend were detected. For all three codend types combined the 7-day post-capture survival was 28% for small (<12cm) herring whereas the estimate for large (12-17 cm) herring was 70%. The predicted 14-day survival rate were 9% and 38% respectively. Authors suggest that skin injures and exhaustion occurring while fish are inside the rear part of the trawl are the most likely causes of escapee mortality.

Tenningen et al. The response of herring to high crowding densities in purse seines: survival and stress reaction. ICES Journal (2012), 69(8), 1523-1531.

Herring, slipping in purse seines, captive experiments, peer reviewed. Survival of herring was 72% at low crowding densities but decreases as crowding increases. Smaller herring and herring of poor quality were more vulnerable to the effects of crowding.

Olsen et al. Physiological response and mortality caused by scale loss in Atlantic herring. Fisheries Research 129–130 (2012) 21–27.

Herring, slipping in purse seines, captive experiments, scale loss, peer reviewed. Survival was reduced as de-scaling increased. Most mortalities occurred between 1 and 4 days post de-scaling. Larger fish with good condition had better survival than smaller fish

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A. Marcalo, J. Ara'ujo, P. Pous˜ao-Ferreira, G. J. Pierce,Y. Stratoudakis and K. Erzini Journal of Fish Biology (2013). Behavioural responses of sardines Sardina pilchardus to simulated purse-seine capture and slipping

Sardine (*Sardina pilchardus*). Behavioural responses simulated purse seine slipping. Laboratory experiment. 6-7 days monitoring. Significant effect of crowding time and density on the survival and behaviour of slipped sardines. 30-99% survival but additional delayed mortality likely. Peer reviewed.

Stratoudakis and Marcalo. Sardine slipping during purse-seining off northern Portugal. ICES Journal (2002) 59:1256-1262

Sardine (*Sardina pilchardus*). levels of slipping on purse seines, qualitative assessment of survival based on multiple observations, peer reviewed. Observations indicated that only a small fraction of the catch were dead after slipping but slipped fish had high levels of scale loss and exhibited signs of stress in their escape behaviour.

Misund O.A., Beltestad, A.K. 1995. Survival of herring after simulated net bursts and conventional storage in net pens. Fisheries Research, 22 : 293-297.

Two experiments:

1. Herring survival rate in purse seine fishery was estimated during two simulated net bursts by pulling up net pens until they split by the weight of the herring. In both cases, herring suffered a high mortality and few herring survived for more than 120 h.

2. The storage trials revealed that the size of the net pen is a major determinant of the survival of herring. None of these herring had been subjected to net bursts, but just kept in pens for observation purposes. After 120 h, survival varied from 2% to 30% in the 30 m3 net pens, from 20% to 90% in the 1000 m3 net pens, and from 80% to 100% in the larger net pens.

Peleteiro, B. ; Marcalo, A.; Olmedo, M.; Pousao-Ferreira, P.; Sanchez, J.; Garrido, S.; Porteiro, C.; Stratoudakis, Y. Sardine tagging off the Iberian Peninsula: laboratory experiments and operations at sea. ICES Council Meeting documents (2004)

Tagging experiments and operations at sea were used to study the movements of sardine (*Sardina pilchardus*) off the Iberian Peninsula. In the summer of 2003, around 2000 fish were caught and transferred alive to aquaculture tanks. Survival of sardines ranged between 70-90% in the first week, mortality was caused mainly due to stress and scale loss associated to fishing and handling. Subsequent mortality has been close to zero for almost a year.

Lockwood, S.J., Pawson, M.G., Eaton, D.R. 1983. The effects of crowding on mackerel (Scomber scombrus L.) — Physical condition and mortality. Fisheries Research Vol.2, Issue 2, September 1983: 129–147.

Series of trials in which mackerel (*Scomber scombrus* L.) were confined in keep nets at different stocking densities are described. From simple confinement trials it was found that 50% of the fish died after 48 h at a stocking density of 30 fish m^3 (6.5 kg m^3). Trials in which fish were held at stocking

densities, and for duration, comparable to those experienced in a “dried up” purse seine prior to “slipping”, showed that up to 90% of “slipped” fish died within 48 h of release. The primary cause of death was probably skin loss, caused by abrasion.

Ana Marcalo Luısa Mateus, Jose´ Henrique, Duarte Correia, Pedro Serra, Rob Fryer, Yorgos Stratoudakis Sardine (Sardina pilchardus) stress reactions to purse seine fishing. Marine Biology (2006) 149: 1509–1518

Sardine (*Sardina pilchardus*) Physiological stress reactions during typical commercial purse seining operations. A linear trend with time spent in the net was observed for most stress variables, which indicate that the duration of the fishing operation is an important stressor in purse seine fishing. Values for some of the stress variables corresponded to levels known to cause acute stress reactions for teleosts.

Misund and Beltestad (2000) Survival of mackerel and saithe that escape through sorting grids in purse seines. Fisheries Research 48 (2000)

Atlantic mackerel (*Scomber scombrus*). Norway/North Sea. Survival after size-sorting by rigid grid in purse seines. Four replicate experiments with controls. 18-56% survived after one month of monitoring.

Marçalo, A., Pousão-Ferreira, P., Erzini, K. ,Stratoudakis, Y. 2007. Physiological, physical and behavioural responses of sardine to purse seine fishing: Implications for the survival of escapees. Comparative Biochemistry and Physiology, Part A 146 (2007)

Observations of the purse seine fishery targeting sardines (*Sardina pilchardus*) off Portugal demonstrated that post-capture mortality due to physical damage peaks 3–5 days after fishing. The analysis of sardine blood and muscle samples collected during ten commercial trips for physiological parameters suggests that the duration of the fishing operation (but not the catch volume) is an important stressor for sardine. Physiological responses of survivors show inverse temporal trends to those reported during fishing and recovery from blood and plasma acidosis is delayed.

Rahikainen, M., Peltonen, H., Pönni, J. 2004. Unaccounted mortality in northern Baltic Sea herring fishery - magnitude and effects on estimates of stock dynamics. Fisheries Research 67 (2004). 111–127.

The length-specific selection and escapee mortality functions were applied to estimate escape mortality and the actual total removals from the herring (*Clupea harengus* L.) stock in the northern Baltic Sea. The analysis showed that at ages 0 and 1 herring are discarded underwater in larger numbers than landed. The estimates show that the landings have been only 30% of the total actual removals at age 0 year, 40% at age 1 year, but nearly 90% at age 2 years herring during 1980–1999. The effect of fishing induced mortality decreases as a function of age and size so that the impact on estimated recruitment and fishing mortality at age 1 year is considerable, but irrelevant at age 2 years and older.

Suuronen, P., Turunen, T., Kviniemi, M.,and Karjalainen, J. 1995. Survival of vendace Coregonus albula) escaping from a trawl cod end. Can. J. Fish. Aquat. Sci. 52: 2527-2533

Survival of 0-group vendace (5-10 cm) after escaping from a 24-mm square mesh trawl cod end was studied in a Finnish lake. Escapees were collected in netting cage released from the cod end after the

tow, and left at the depth of capture for 3-7 days. On average, 50% of the escapees vendace died probably due to scale loss and exhaustion experienced by vendace during trawl capture. Most of mortality occurred during the first day after escaping. Hauls conducted in the late evening and at night produced the highest mortality (60-80%). Mortality was 30-40% in the afternoon hauls.

Jorge M. S. Goncalves, J. Araujo, L. Bentes, P. Monteiro, R. Coelho, M. Corado and K. Erzini Evaluation of survivorship of fish that have escaped through a demersal purse seine BRD. (ICES CM 2005/ X 18 Poster)

Survival of demersal and pelagic species (after simulated escape through selection panel in a demersal purse seine. 25 and 58 % survival for the pelagic species chub mackerel (*Scomber japonicus*) and sardine (*Sardina pilchardus*), respectively after 8 days. Higher survival for the demersal species.

Suuronen, P., Lehtonen, E. Tschernij, V. Orrensalo, A. 2006. Survival of Baltic herring (Clupea harengus L.) escaping from a trawl codend and through a rigid sorting grid International Counc. for the Exploration of the Sea.

The survival of Baltic herring (*Clupea harengus*) escaping from a 36 mm diamond mesh codend and through a rigid sorting grid (12 mm bar spacing) was studied in the northern Baltic Sea proper. Escapees were captured into a netting cage which was transferred into a holding cage for two weeks. Most deaths occurred 3-8 days after escape and the mortality was negligible after 10-12 days. The survival rate of codend escapees (length 8-17 cm) after two weeks caging was around 10- 15%, and that of fish escaped through the sorting grid 15-25%. The mortality rate among the smallest individuals was higher during the first days after escape. Control fish caught by handline suffered little mortality during a three weeks caging period.

4.3 Develop an objective framework for setting *de minimis* levels taking account of Fmsy and Precautionary Approach considerations (ToR 3)

EWG 13-17 noted that there are a number of ways in which article 15 (5) could be interpreted. Depending on interpretation, this will influence the design and application of any objective framework. EWG 14-01 has suggested a number of points that should be considered when including *de minimis* exemptions within discard plans following the logic of Regulation 1380/2013.

According to Article 15 (5), *de minimis* exemptions of up to 5 % (7% in the first and second and 6% in the third and fourth years of application) of total annual catches of all species subject to the landing obligation referred to in paragraph 1 can be specified in discard plans in the following cases:

(i) where scientific evidence indicates that increases in selectivity are very difficult to achieve; or

(ii) to avoid disproportionate costs of handling unwanted catches, for those fishing gears where unwanted catches per fishing gear do not represent more than a certain percentage, to be established in a plan, of total annual catch of that gear.

Catches under the provisions referred to in this point shall not be counted against the relevant quotas; however, all such catches shall be fully recorded.

The Expert Group notes that application of *de minimis* provisions in the context of the landing obligation must ensure that the objectives stated in Article 2 of the basic regulation (EU regulation 1380/2013) are adhered to, namely that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield Furthermore, 1380/2013 specifies that in order to reach this objective of progressively restoring

and maintaining populations of fish stocks above biomass levels capable of producing maximum sustainable yield, the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and on a progressive, incremental basis at the latest by 2020 for all stocks.

Taking into account the objectives of Article 2, and Recitals 29 and 31, the Expert group suggests that any proposals for *de minimis* exemptions in discard plans, should take account the following elements.

i) According to recitals 29 and 31 *de minimis* is intended to be an option of last resort;

ii) To operationalise the inclusion of *de minimis* exemptions within the constraints of catch opportunities,, a definition of the management units/fleets that are to avail of the exemption are required within the discard plan;

iii) It is desirable that plans provide the maximum proposed volume of *de minimis* allocated based on Article 15(4) and how that catch has been derived;

iv) In line with Article 15(4) there is a need to outline justification for applying a *de minimis* exemption and to provide relevant supporting information;

v) To comply with the MSY objective in Article 2(2) of the CFP, the *de minimis* allocation would need deducted from the Fmsy advised catches when setting fishing opportunities for the relevant stock to ensure that catches do not exceed the advised levels for that stock;

vi) To ensure that catches do not exceed agreed limits of catch, a robust methodology for monitoring *de minimis* catches will be needed and a description of this would permit some evaluation of the risk associated with the exemption;

vii) Given that *de minimis* catches could be derived from multiple stocks, it is important that the estimation of *de minimis* volumes and the distribution of these catches across fleets/management units is described within the context of the plan;

viii) Where catch advice is not available and where TACs are not applicable, then it is difficult to see how a *de minimis* exemption could be applied.

These are elaborated on further here:

1. **Use of *de minimis* provisions in discard plans**

Recital 29 of the basic regulation clearly indicates that *inter alia*, in the management of the landing obligation, it is necessary that Member States do their utmost to reduce unwanted catches. To this end, improvements of selective fishing techniques to avoid and reduce, as far as possible, unwanted catches must have high priority. Furthermore, Recital 31 states "*In order to cater for unwanted catches that are unavoidable even when all the measures for their reduction are applied, certain de minimis exemptions from the landing obligation should be established for the fisheries to which the landing obligation applies, primarily through multiannual plans*." Hence the Expert Group understands that provisions for *de minimis* exemptions should be applied in this context.

2. **Defining management units**

The Expert Group re-iterates that the regional groups clearly define the management units and stocks to which they wish to provide for a *de minimis* exemption to facilitate stock assessment, the documentation of catches and how *de minimis* allocations are to be distributed.

3. **Specifying the *de minimis* catch**

In the same context EWG 14-01 is of the opinion that also the maximum catch (weight or numbers) that may be discarded under the *de minimis* provision and how that catch has been derived should be specified in joint recommendations to allow evaluation of its likely impact on stocks.

4. Justification for applying *de minimis*

The Expert Group re-iterates that it is appropriate that regional groups review all the available options for reducing unwanted catches ahead of applying de mi nimis under the conditionalities specified in the Article 15.

To test the first conditionality it is suggested regional groups compile background information supporting the use of *de minimis*. It is suggested that they then make use of the "current revenue to break even (CR/BER) indicator" described by STECF EWG 14-01 to evaluate whether the available technical solutions are economically too difficult. STECF has provided guidance on this and is prepared to assist regional groups further on this conditionality.

For the second conditionality it is suggested regional groups document the cause of the disproportionate costs and the measures taken to reduce these costs in terms of improvement in selectivity/avoidance measures or to on board handling systems.

5. Derivation of *de minimis* allocations

The expert group notes to comply with the objectives of Article 2(2), the total catches (the sum of the landings and discards) from a given stock should not exceed the advised catches for that stock. Hence any volume of catch derived from the application of *de minimis* exemptions in discard plans will need to be deducted from the advised total catches. The Expert groups notes that there is more than one way to interpret and apply the *de minimis* provisions which could give rise to vastly differing outcomes.

Table 4.3-1 illustrates the potential outcome from two different interpretations.

Advised catches for the fishery	
Total advised catches (combined stocks)	150,000t
Advised catch for the stock X to which *de minimis* is to be applied	583t
Example (a) - de minimis (5%) applied within stock X	
5% of advised catch for the stock X to which *de minimis* is to be applied	29t
Total landing available for stock X after removing the *de minimis* catch (583 t - 29 t)	554t
Example (b) - de minimis (5%) applied across stocks	
5% of Total advised catches (combined stocks)	7,500t
Total landing available for stock X after removing the *de minimis* catch	0t
Total discard available for the stock	583t

Table 4.3-1 Example of potential outcomes of two different interpretations of *de minimis* provisions.

In example A, the *de minimis* exemption is limited to 5% of the catch advice for stock X, and the available landings are decreased by 5% to account for the volume discarded (e.g. 29 t). Hence to comply with the objectives of Article 2(2) and the provision for 5% discards, the total catches from stock X should not exceed 583 t, of which up to 29 t may be discarded. If the full 5% provision for discards is utilised, total landings should not exceed 554 t.

In example B, the *de minimis* exemption is computed from a combined advised catch of several stocks, and in that case the volume available for the *de minimis* exemption is higher than the catch advised for stock X. In this example, and to comply with Article 2(2), Member States have the option to discard up to 583 t of the catches from stock X, which if fully utilised, would mean that the available landings for stock X would be zero.

6. Calculation of *de minimis* and its allocation

The Expert group suggests there is no need to prescribe a methodology to determine the level of the *de minimis* catch which can be discarded, provided that the proposed level does not exceed the maximum percentages prescribed in the regulation and the resulting *de minimis* allocation for a given stock does not exceed the advised catch for that stock.

The Expert group notes that how *de minimis* is allocated amongst the relevant fleets is a matter for Member States. For stock assessment purposes, however, EWG14-01 notes that where the *de minimis* catch is derived from the combined catch advice for several stocks and it is the intention of regional groups to allocate the *de minimis* catch to a number of different stocks, then which stocks are to receive an allocation and the corresponding catch volumes to be allocated should be specified. The Expert group also notes that because regional discard management plans will apply for three years, regional groups should consider how the *de minimis* catch will be allocated for that period, in response to annual changes in advised catches for each of the stocks concerned.

7. Application of *de minimis* for the Mediterranean

The Expert Group considers that for stocks in the Mediterranean Sea, which are subject to minimum sizes as defined in Annex III to Regulation EC No 1967/2006 and for which TAC are not set, *de minimis* could be estimated from the catch advice in line with the provisions of Article 2(2) provided by relevant scientific bodies. For stocks in the Mediterranean Sea, for which catch advice is not available, there is no means to assess whether the allocation of the *de minimis* would be in line with the provisions of Article 2(2) so the setting of *de minimis* is potentially problematical.

4.4 Review the issues associated with the documentation of catches to be specified in discard plans (ToR 4).

This term of reference required extensive discussions to define the issues surrounding catch documentation requirements. As acknowledged from the onset, given the broad range of possible scenarios and interpretations the definition of such requirements is not straight forward.

EWG 13-17 set out broad principles that might apply to the achievement of full documentation of catches and the broad criteria that should be considered for establishing compliance risk and hence the level of documentation and verification that might be applied.

EWG 14-01 seeks to work through more specific examples relating to Baltic fisheries and pelagic fisheries in general in order to assist in the design of discard plans.

Risk Analysis

The likelihood of non-compliance with the landing obligation and the confidence in full catch documentation, will be heavily influenced by economic and practical drivers such as the ease with which unwanted catch avoidance can be achieved and the incentives or otherwise for doing so (EWG 13-16). These elements are primary considerations when assessing the risk of non-compliance.

Efficiency and proportionality are key values to be taken into account. In simple terms there is no justification in deploying costly monitoring methods to fleet segments that pose little or no risk of non-compliance with the landing obligation and where the impact of non-compliance is considered to be minimal. Conversely, fleet segments which have a high impact on TAC stocks and where discarding is

evident or unknown will require comprehensive monitoring in order to ensure the landing obligation is enforced and that the avoidance of unwanted catches is motivated.

The proportionality of monitoring programs should also take account of the potential benefits which may include a degree of simplification, increased operational flexibility and increased accreditation as well as the potential economic benefits to be gained from possible uplifts in the TACs.

An effective risk evaluation methodology can form the basis of implementation of a level playing field where fishermen should benefit from transparency across competing fleets.

This risk model can be developed and utilised in conjunction with fleet modelling of pelagic and demersal fisheries.

In line with the work initiated by BALTFISH with the assistance of EFCA, risk analysis should be the first step in determining how likely the occurrence of an illegal discard event is or the incorrect recording of discards could take place. To this end, catch composition, average catch rates, reference fleets, and cross-checks should be used as a part of the risk analysis intelligence. Any gaps in the current knowledge should be identified and rectified where possible.

A risk analysis methodology should provide a common basis for the identification of the likelihood and impact of discard behaviours in the BS area. The methodology will be used to identify the likelihood and impact on a continuous basis. The following prerequisites are proposed for the methodology to be developed:

- All fisheries should be clearly identified to facilitate their assessment in accordance the common risk analysis methodology. Factors such as target species, catching areas, active periods, gear and any specific rules that apply to a particular segment of fleet could be the main points of reference for the identification of the fisheries in the BS.

- Take into account current knowledge concerning the observed discards level in each identified fishery (e.g.: STECF data, discard range and average)

- Define and take into account the possible impacts (e.g.: % catches, Fmsy, economic factors)

A progressive approach should then be considered when deciding control measures. The high risk vessels or high risk fleet segments may require more substantial control measures to be implemented (e.g. CCTV, observers).

The tables below set out some of the indicators which can be used to determine the level of risk.

Relative risk score	Impact (of illegal discarding and need for fully verified catch documentation) indicators.
1	• Fishery is for non-TAC species with minimal or no catch of TAC species. • Discards have high survival rate. • Landings data is considered sufficient for scientific evaluation.
2	• Fishery takes a small by-catch of TAC species in relation to overall TAC. • Discard rates are low (e.g.<10%). • Discards are exempt because of high survival but are required to be fully documented.
3	• Fishery targets TAC species or TAC species make up a significant by-catch. • Fishery has a significant discard rate for TAC species (e.g. >10%). • Fishery would benefit from enhanced scientific data. • Selectivity and avoidance measures require evaluation.
4	• Fishery takes a high proportion of target TAC species per vessel. • Fishery has a very high discard rate for TAC species (e.g. >20%) or the discard rate is data-limited. • Target TAC species are subject to recovery measures or are outside safe biological limits. • Fishery has potential for de-regulation (e.g. effort regimes) and enhanced technical flexibility as a result of full accountability for fishing mortality. • Corroborative data required to justify TAC uplift.

Table 4.4-1 Risk indicator relative to the potential **impact** of non-compliance

Relative risk score	Likelihood (of illegal discarding and need for fully verified catch documentation) indicators.
1	• No improvements to selectivity necessary. • Little or no incentive to discard TAC species.
2	• Selectivity measures can be adopted and checked by inspection. • Some high-grading/discarding is expected. • High confidence in self-reported data.
3	• Economic incentive to high-grade or discard unwanted catch. • Selectivity measures can be checked on inspection. • Self-reported data requires robust corroboration. • Exemptions may be open to abuse.
4	• Strong economic incentive to high-grade or discard unwanted catch. • Vessels are/can be equipped to grade out unwanted catch. • Species or size selectivity difficult to achieve, or unproven. • Self-reporting of accurate discard data is considered to be difficult to achieve or pose a disproportionate burden on crews. • High likelihood that discards exemptions are open to abuse. • Fleet segment has a history of non-compliance.

Table 4.4-2 Risk indicator relative to the potential **likelihood** of non-compliance

4.4.1 Requirements for pelagic documentation (towed nets and purse seines)

Assumptions;

- Slipping of catches is to be considered as discarding unless authorised under exemption through proven high survival or for safety or *force majeure* reasons.
- Current drivers for slipping include incorrect catch composition or quota restriction, undesirable fish quality or size, lack of hold capacity and compromised safety.
- Documentation of catches will be dependent on the specific risks associated with each pelagic fishery.

4.4.2 Baltic Sea sprat (Subdivisions SD 22-32) case study

A key issue in this fishery is the limited quota set aside for the by-catch of herring which remains unsorted in the catch and is sampled on landing. Monitoring at sea aims to ensure that the catch does not exceed 45% herring; this can be achieved by sampling the catch as it is brought on board. More comprehensive sampling is carried out ashore by sampling the catch as it is processed.

Under the landing obligation it will not be permissible to discard herring in order to meet this limitation on bycatch in this industrial fishery. Any catch taken will have to be brought on board, landed and counted against quota.

The industrial herring bycatch in the Baltic is set at 8% of the herring TAC. The risk of slipping high herring content hauls is therefore driven by the need to keep within the overall bycatch quota to allow the sprat quota to be taken in full.

The key monitoring requirement in this fishery is likely to constitute full retention monitoring; i.e. ensuring that all catches are taken on board. It is considered unlikely and impractical for crews of most vessels in this fishery to be able to discard catches after they have been brought on board.

The following points should be considered as a means to fully document this fishery;

1. Establish what exemptions apply to the industrial sprat fishery if any.
2. Current control measures should remain in place; i.e. logbook completion, VMS etc.
3. Reference shore based sampling of industrial catch to determine quota uptake should continue.
4. Requirement to log and report incidents and reasons for slipping events (general provision?).
5. Effective means for monitoring the bringing on board and retention of all catches.

High resolution electronic monitoring such as that required to determine species or to quantify catch is not necessarily needed for full retention monitoring and a low cost system could be considered. However, such a system needs to be weighed against the compliance risk. The level of fleet coverage subject to monitoring should ideally be 100% given the high level of volatility of catch composition. A low level of fleet coverage with EM may not achieve the monitoring aim because of the ‘observer effect’ where the reference fleet may be compliant but not necessarily be representative of the whole fleet. For this reason, costs need to be carefully analysed.

An alternative means of control may be established through a network of observers at sea and ashore to encourage the fleet to minimise the uptake of herring bycatch; possibly along the lines of real time avoidance measures.

A protocol should be established to deal with reported or observed slipping events. For example, a deemed quota uptake based on the best available evidence of catch composition could be considered.

Under the landing obligation, slipping of catches in this fishery is thought to be rare; nevertheless the regional group should consider how to manage this type of event.

The deployment of surface surveillance assets should be reassessed in the light of the fact that under the landing obligation all catches should be landed and catch composition rules will effectively no longer apply. Whilst at sea inspection is still necessary to determine catch on board and verify mesh size and information in the log books, the ability of air and surface surveillance assets to detect slippage events is questionable as some fish is inevitably released during fishing operations and under the surface. Surface real time surveillance could potentially be used to provide a system of real time closures based on high herring bycatch and to broadcast at-sea or shore-based sampling results to the fleet. Haul by haul catch documentation should also assist in providing real time information on catch composition. This information can also be cross-referenced with VMS data to test expected catch reporting against fishing.

3.4.3 Reference fleets

In addition to the considerations of EWG 13-16 on the use of a reference fleet, the key question relates to how reference fleet data could be used and how it will be compared to non-reference data. Consideration should be given as to how any apparent disparity between reference and non-reference data is dealt with. This could potentially lead to a re-evaluation of the level of fleet coverage required. Sea going inspection of catch at last haul on non-reference vessels may provide a good indicator of previous discarding and serve to augment the reference data.

Any decision to implement a reference fleet should take account of the likelihood that the selected vessels would be representative of the fleet as a whole. Risks associated with a reference fleet strategy might include the following;

- The selection of vessels for a reference fleet is not based on a documented, probability-based procedure.
- The coverage in terms of vessel numbers is too low to be representative.
- The ‘observer effect’ results in compliance only by reference vessels.
- It fails to be cost effective because the data gathered is not used for scientific purposes as well as control purposes.

4.5 Test the *de minimis* framework using worked examples form Pelagic fisheries and the Baltic Sea (ToR 5)

EWG 14-01 has provided two examples to illustrate the type of supporting information to support a de minimis exemption. However, they also illustrate some of the difficulties asscoiated with the use of this pro ision thst may be faced by Member States.

4.5.1 Baltic Plaice Example – de minimis based on technical difficulty

Point 4 of the guidelines provided in section 3, notes that “*Regional groups need to provide the justification for the de minimis provisions in line with the conditionalities of “selectivity difficult to achieve” and/or “disproportionate costs of handling*”. This is in accordance with the requirements of article 15.5.c (i)-(ii), EU regulation 1380/2013. EWG 13-16 noted that the opportunities to utilise the *de minimis* condition only apply if certain conditions are met. The first of the two conditions requires that ‘improvements in selectivity are considered to be very difficult’. The conditionality stipulated in article 15.2.c.ii: “improvements in selectivity are considered to be very difficult” might firstly be interpreted as a technical restriction in that the gears cannot be improved to become more selective. EWG 13-16 considered that on purely technical grounds there were numerous ways in which gears or spatial distribution of fishing could be used to avoid unwanted fish. The basic problem for fishermen

in relation to selectivity, however, is that any change in fishing practices is likely to lead to a change in their economic performance, either by leading to lower revenues and or increased costs. This is particularly the case when applying more selective fishing gear to avoid by-catch. In several cases this may not only reduce unwanted catches, but it may also reduce wanted by-catch. So it is more likely to be the economic implications of improving selectivity (lower revenues and/or higher costs) rather than a technical issue that leads to 'difficulty'

EWG 14-01 considered if one option to invoke the application for the *de minimis* for plaice would be to demonstrate that increases in selectivity would likely result in the fleet or fleets in question moving from a viable economic performance situation to an unviable one using the Current Revenue to Break Even Revenue (CR/BER) indicator, as detailed in STECF EWG working group report 14-01 (Landings obligation in EU fisheries part II).

BALTFISH may therefore wish to consider applying this indicator using available data on the Baltic fleets that currently catch plaice.

A selectivity study has already been carried out for Baltic cod, flounder and plaice under "*Lot1 - Collaboration between the scientific community and the fishing sector to minimise discards in Baltic cod fisheries MARE/2010/11*" which gives estimates of changes in catches of these species under different selectivity options (different cod-end and mesh size designs e.g. Freswind Bacoma etc). With further elaboration (e.g. length frequency distribution) this information, coupled with the available economic and transversal data under the EU fisheries Data Collection Framework (DCF), could be used to carry out the calculations. This would require the application of various selectivity options on the most recent data on the length distributions of cod caught in the area. This would then allow to calculate the potential differences in retention at length for both the target and by-caught species. This can be then translated into weight through the application of a weight-at- length function for the particular species which finally provides an estimate in the potential change in catch volumes when switching to a more selective gear.

It was beyond both the scope and resource of EWG 14-01 to undertake these specific calculations on behalf of BALTFISH, however, some purely illustrative calculations were carried out on the Polish demersal trawl 12-18m fleet segment (Figure 4.5-1, Figure 4.5-2) who have landings of plaice (and therefore do have some plaice quota) and the Latvian demersal trawl 24-40m segment (Figure 4.5-3, Figure 4.5-4) who don't have landings (and therefore quota) of plaice.

The results presented below are for illustrative purposes only as a more detailed analysis of the likely impact that the gear modifications may have on the retention of marketable cod (cod >MCRS) would be needed if this indicator were to be used in an attempt to justify *de minimis* for plaice on the grounds of selectivity being too difficult to achieve..

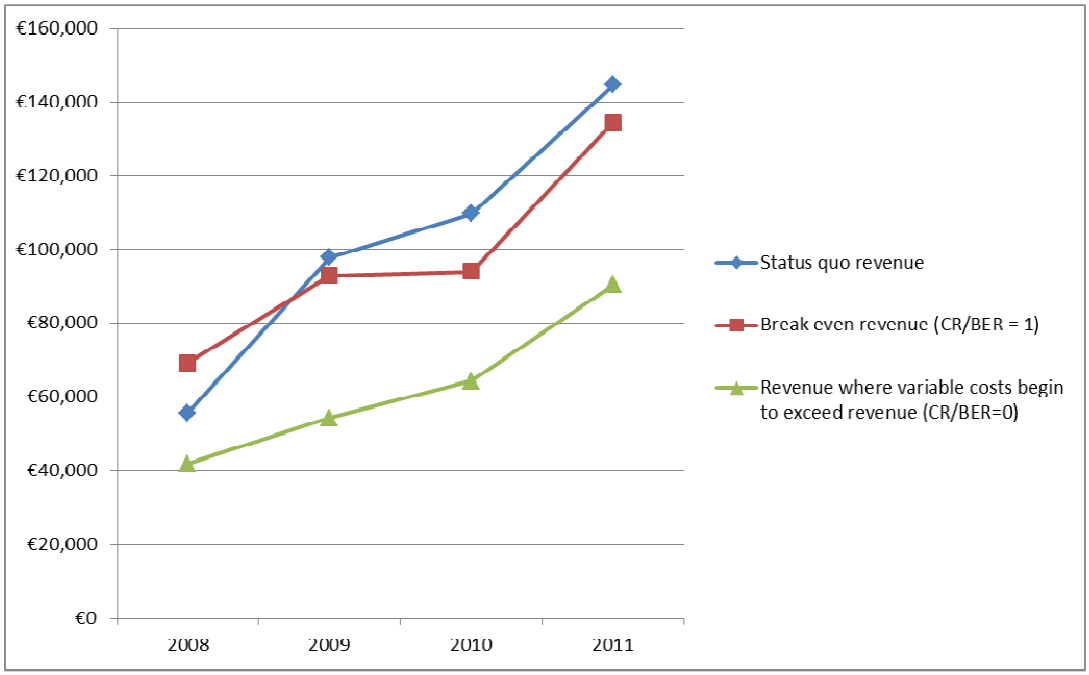

Figure 4.5-1 Polish demersal trawl 12-18m status quo revenue per vessel and CR/BER thresholds

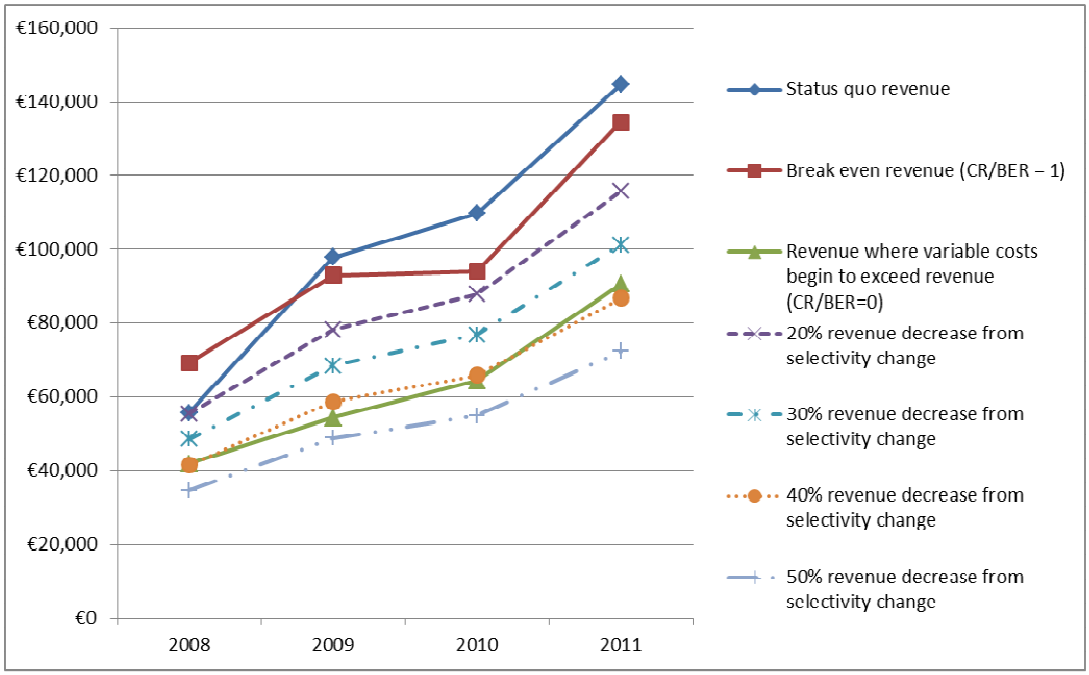

Figure 4.5-2 Polish demersal trawl 12-18m status quo revenue per vessel, CR/BER thresholds and assumed revenue scenarios following selectivity improvements N.B. These are not real changes in revenue from increased selectivity, they are assumed changes for illustration only.

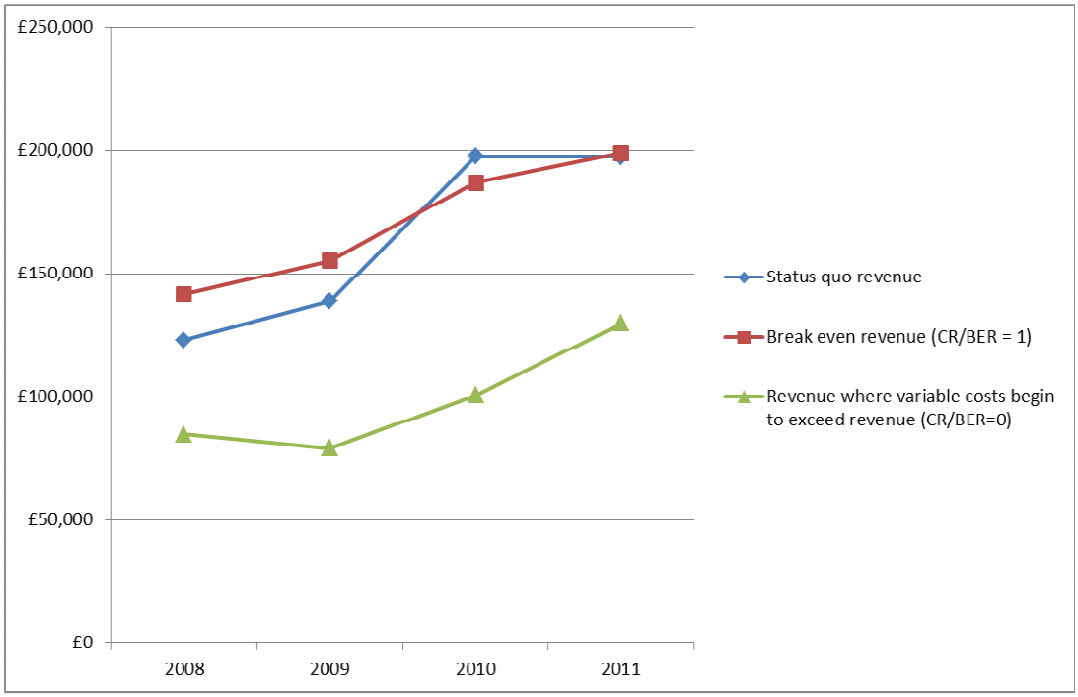

Figure 4.5-3 Latvian demersal trawl 24-40m status quo revenue per vessel and CR/BER thresholds

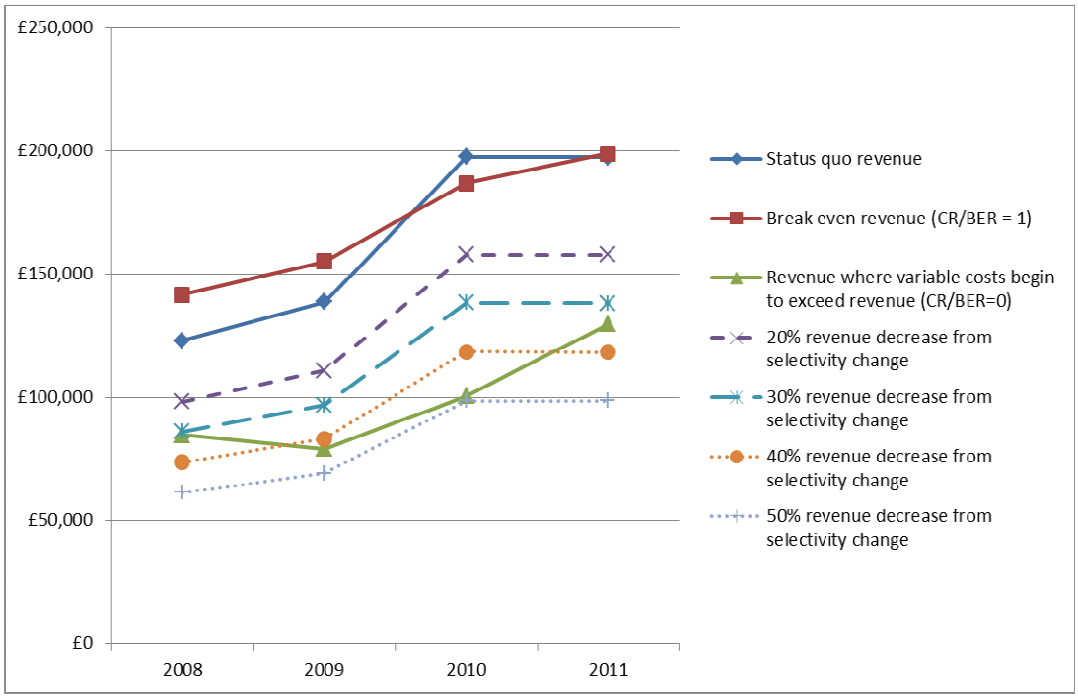

Figure 4.5-4 Latvian demersal trawl 24-40m status quo revenue per vessel, CR/BER thresholds and assumed revenue scenarios following selectivity improvements N.B. These are not real changes in revenue from increased selectivity, they are assumed changes for illustration only.

4.5.2 Baltic Plaice Example –other issues

De minimis required to cover discards of plaice on the basis that increasing the selectivity to release plaice will result in unacceptably high economic costs (conditionality supported by the above example). However regardless of how you calculate the actual volume of the de minimis the allocation amongst Member States will be problematic. Denmark currently has 72% of the total TAC (based on landings only) but other Member States (Germany, Sweden and Poland) have either small allocations

or no quota allocation whatsoever (Latvia, Lithuania, Finland and Estonia). If plaice is included in the landing obligation in 2015 the *de minimis* can only be allocated up to a level corresponding to the current TAC (3,409 tonnes), which is calculated on landings only. This is to ensure there would be no additional mortality on the plaice stock (i.e. the total landings left after deduction of *de minimis* would be zero. This follows from Article 2(2) of the Regulation 1380/2013. If this is the case then Denmark would have to decide whether to transfer part or all of their quota to cover the discards of other Member States.

This would provide a good reason not to include plaice under the landing obligation in 2015 (until 2017) as allowed under Article 15 (1b) as the plaice stock is due to be benchmarked in 2015 and it is likely that the new catch advice will include discards in 2016. The TAC will be uplifted accordingly to reflect catches of plaice that would have been discarded. This new increased level will include discards from Member States who do not currently have quota allocation. If discards are at a rate of 100% as has been observed for some MS, Denmark will have a significantly increased quota but is not obliged to share this amongst other Member States. Alternatively BALTFISH may wish to request that the Council consider whether it would better to adjust the TAC area for plaice or even remove it altogether if there is a scientific justification to do so.

An alternative solution would be to use the provisions of Article 15(8) and transfer up to 9% of the quota from another stock or stocks to permit by catch of plaice to be landed. However, this provision can only apply where the stock of the non-target species is within safe biological limits and presently for Baltic plaice stocks, there are no reference points (Blim or Flim) available.

4.5.3 Seal Damage in the Baltic salmon fishery and cod fishery in the eastern Baltic

To assist BALTFISH, EWG 14-01 has provided some background information that may be useful in formulating a case for a de minimis for seal damged fish. This is purely for guidance and should not be considered as a definitive assessment.

1. Description of the problem

Seals affect the small-scale coastal fisheries and offshore longline fisheries for salmon and cod negatively and seriously in the Baltic. Catches from gillnets, longlines, trapnets and also anchored floating gillnets are impacted. In the Baltic these seal-fisheries interactions are severe and losses are considerable. Modifications of fish traps have reduced damages to catch and gear but predation remains a problem.

a. Management units

The Baltic Sea salmon fishery is split into a commercial offshore fishery, using longlines. The breakdown of vessels by Member States is shown in Table 4.5-1. There is also a commercial coastal fishery using principally trapnets but also anchored floating gillnets are used to some extent. Finland, Poland and Sweden are the predominant Member States in the coastal fishery with small numbers of fishermen from Latvia, Lithuanian and Estonia involved. The main fishing season for longlines is January and February, but some fishing takes place also during November, December, March and April. The main fishing season for the coastal fishery is June and July. There is also a growing recreational fishery using commercial gear-types which are not considered here.

Member State	**No of Vessels SD 22-31**	**No of Vessels SD 32**

Denmark	16	-
Finland	12	7
Poland	57	-
Sweden	23	-
Total	**108**	**7**

Table 4.5-1 Breakdown of Baltic salmon fleets by Member State involved in the offshore fishery (Source: ICES, 2013)

The eastern cod stock (ICES subdivisions 25 to 32) fisheries are dominated by Poland, Sweden, and Denmark, with rest of the catches taken by Latvia, Lithuania, Russia, Germany, Finland and Estonia (Table 4.5-2). The majority of landings are made using trawlers (84%) and gillnetters (16%). Most catches by gillnets are made by vessels from Denmark, Poland, Latvia and Sweden. The majority of these vessels are < 12m.

Catches are mainly taken by trawlers, gillnetters and to a small degree by Danish Seines in subdivisions 22-24 (western cod stock). The main part of the catches is taken by trawlers (65%) with gillnetters accounting for the other 35%. In 2012, most of cod landings in SD 22-24 were taken in SD 24. The importance of SD 24 for cod fisheries in the Western Baltic has substantially increased in recent years. Presently, around one third of the cod catches is taken in SD 22, where fishery mainly takes place in the first quarter of a year. Catches with gillnets are predominantly by Danish, German and Swedish vessels, with smaller amounts occasionally reported by other Baltic coastal states.

Member State	**No of Vessels**
Denmark	~500
Estonia	Na
Germany	471
Latvia	636
Lithuania	Na
Poland	537
Sweden	467
Total	**108**

Table 4.5-2 Breakdown of cod gillnets fleets by Member State (Source Fleet Register)

b. Target species and bycatch species

The target species are salmon with a bycatch of sea trout and cod with bycatch of flatfish species.

c. Cause of disproportionate costs

Seals affect the small-scale coastal fisheries and offshore longline fisheries for salmon and the gillnet fisheries for cod negatively and significantly. Currently such catches are discarded because the damage caused renders the catch unsellable. To count such catches against quotas would seem to be disproportionate as such catches have no economic value.

d. Measures taken to reduce disproportionate costs

With continued problems from seals predating on salmon captured in fishing gears, the use of trapnets that protect the salmon from seal predation has increased. In Gulf of Bothnia and Gulf of Finland, trapnet fisheries have been developed using new netting material that the seal cannot bite through. Also fixed fences at the entrance of the traps, preventing the seal from entering the traps, has been developed. In Sweden a new type of trap has been developed in recent years, the so called 'push‑up trap', with fixed walls that protect the catch from seals. These devices are now used extensively by fishermen.

In the cod gillnet fishery there are no known effective mitigation measures.

2. Total annual catches by species for the management units to which the exemption is to apply.

Total catches in the Baltic salmon fishery including commercial and recreational landings, discards (includes sea damaged salmon) and unreported catches are 239,300 individuals (Table 4.5-3, ICES, 2013).

Member State	Total Catches 22-31	Total Catches SD 32	Total Catches both areas
Denmark	20,175	-	20,175
Estonia	376	717	1,093
Finland	42,563	9,296	51,859
Germany	272	-	272
Latvia	1,056	-	1,056
Lithuania	568	-	568
Poland	5,600	-	5,600
Sweden	38,148	-	38,148
Total	**108,758**	**10,013**	**118,771**

Table 4.5-3 Breakdown of commercial catches by by number by Member State in SD 22-31 and 32. (Source: ICES, 2013)

Total catches in the eastern Baltic cod fishery including Russia are estimated at 57,800 tonnes while in the western Baltic that are estimated at 19,376 tonnes. Table 4.5-4 provides a breakdown of these catches by country.

Member State	Total Catches All gears (eastern)	Total catches Passive gears (eastern)	Total Catches All Gears (western)	Total catches Passive gears (western)
Denmark	12,102	678	9,113	2,806
Estonia	686	240	3	0
Finland	1,405	0	260	0
Germany	2,432	0	4,522	1,472
Latvia	4,269	1,308	11	11
Lithuania	2,260	80	0	0
Poland	14,007	4,702	818	432
Sweden	10,109	1,169	2,345	1,184
Russia	3,954	393	0	0
Discards	**6,819**	**Not estimated**	**905**	**Not estimated**
Total	**58,043**	**8,570**	**17,977**	**5,905**

Table 4.5-4 Breakdown of cod catches by Member State for the eastern and western cod cod stocks (Source ICES, 2013)

3. Total levels of discards and damaged catches in the salmon and cod fisheries.

Total discards are estimated at 10,240 salmon (range of 7,202-17,460). Of these discards 60% (6,144) are estimated to be as a result of seal damage. Most damage by seals damaged occurs in the costal trapnet fishery but damage also occurs in the offshore longline fishery.

Total discards in the eastern Baltic cod fishery are estimated at 6,936 tonnes (12% of the total catches). These discards do not contain any estimate for seal damaged cod.

4. Discard Rate in terms of total annual catches in the management unit.

Not applicable.

5. Contribution damaged catches for all management units

Seal damaged salmon make up approximately 4% of total catches and 5% of commercial catches. The extent of seal damage in the cod fishery is unknown although is reported as significant in the gillnet fishery. There is no estimate for the level of seal damage in the cod fishery although given that the gillnet fishery accounts for 16% of the total annual catches of cod in the Baltic then it is reasonable to assume that seal damage is no more than 5% of the total annual cod catches. However, further monitoring is required to establish the true extent of the problem.

4.5.4 Use of de minimis for whitefish by-catch in pelagic herring fishery

The work presented below was initially intended to explore the use of *de minimis* using a 'real life' pelagic example provided from industry sources and being considered as a candidate for *de minimis* exemption. However, on closer inspection EWG 14-01 considered that *de minimis* in fact may not be appropriate for the reasons outlined below. The example is retained as it provides a useful illustration of some of the unforeseen issues that can arise when detailing and articulating the specific rationale and justifications for the application of *de minims* in the formulation of discard plans.

The pelagic fleet catching herring in the North Sea has a small by-catch of demersal fish which are subject to catch limits. Only a small number of vessels are allowed to have sorting facilities at sea, but for the bulk of the catches the unsorted catch has to be landed and processed ashore. Currently, these fish are not recorded against any TAC and are being processed as fishmeal. These catches are thus in excess of the quotas for the demersal stocks. Article 15(8) makes provision for a derogation from the obligation to count catches against the relevant catch limits set for the demersal fish and the catches of demersal fish can be deducted from the quota of the target species, in this case herring, provided it do not exceed 9% of the herring quota and the by-catch stock is inside safe biological limits.

Provisional sampling data, which maybe not be representative, indicate that the magnitude of the whiting by-catch in the North Sea herring fishery, for example, could be ~600 tonnes or 2% of the catch advice for whiting. For the case that the whiting stock falls outside safe biological limits, a *de minimis* exemption under Article 15(5) could be considered based on the principle that it would be difficult to improve the selectivity in the fishery. However, by strict definition of a discard (i.e., has to be returned to the sea), catches of whiting from vessels without sorting facilities are not discards and hence the provision for a *de minimis* exemption may not be possible for these vessels.

Article 15(8) only applies if the whiting stock is within safe biological limits. If the stock is considered outside safe biological limits and the *de minimis* cannot be applied, the only option is for the pelagic sector to obtain whiting quota to allow the fishery to continue. This example would be applicable to numerous other pelagic fisheries, e.g., western Baltic herring fishery that takes a small amount cod by-catch (0.2% of the cod catch advice).

4 CONCLUSIONS AND OBSERVATIONS

- The draft BALTFISH plan contains a list of proposed measures with only limited justification. To provide a proper scientific evaluation of the draft plan further detail on the species and stocks covered, a detailed breakdown of the fleets involved and the justification for any exemptions is required.

- To facilitate the point above, EWG 14-01 has provided guidance on the types and sources of data that the EG considers important for any future evaluation of the BALTFISH discard plan.

- A number of elements, e.g. setting of fishing effort, fishing opportunities, technical measures etc are identified in the draft BALTFISH plan. EWG 14-01 has not provided comment on these are they are outside the scope of the elements to be contained within discard plans as specified in article 15.5(a)-(e) of EU reg. 1380/2013.

- The BALTFISH plan identifies a number of species caught in a range of gears where the intent is to exclude these species from the landing obligation on the basis of high survival. EWG 14-01 note that no supporting scientific evidence is presented although Article 15(4(a) specifically mentions "scientific evidence" . EWG 14-01 would like to draw attention to the guidance notes presented in EWG 13-17and the further information provided by EWG 14-01..

- Although not explicitly required, the draft BALTFISH plan notes that there is a need to develop indicators to evaluate the impact of the plan. EWG 14-01 considers this is an important inclusion and further notes that an initial analysis of the likely impacts prior to introduction would be useful to identify potential areas of concern e.g. choke issues, consider the options available to alleviate these issues and to assess what the broader implications may be.

- WG 14-01 received additional requests for advice from the BALTFIH group regarding the delayed introduction of plaice into the discard plans and the full or partial inclusion of sea-trout. EWG 14-01 has only been partially able to address these requests.

- EWG 14-01 concludes that it may be better to delay the introduction of plaice as ICES currently only provides landing advice for this stock. ICES does plan to benchmark this stock in 2015 which should lead to more accurate catch forecasts with the inclusion of discard data..

- The rationale behind including sea-trout (a species not covered by the landings obligation) either fully or partially is unclear to EWG 14-01. There are certain advantages from a monitoring perspective, by removing the ability for species misreporting between salmon and sea-trout, but there are also a number of other management considerations if sea-trout were to be included including the need for additional supporting information for possible survival exemptions.

- EWG 14-01 has identified a risk based approach when considering the distribution of resources and tactics for control and compliance purposes. The risk based approach considers the potential impact and likelihood of non-compliance using a score card based on the characteristics of the fishery, including the

potential for chock issues, the ability to adjust selectivity, past compliance performance, information on current levels of discards.

- There are a number of ways in which the estimation of *de minimis* catches can be calculated and interpreted. Depending on interpretation, this will influence the design and application of any objective framework. EWG 14-01 has suggested a number of points that should be considered when including de minimis exemptions within discard plans following the logic of Regulation 1380/2013.

1. According to recitals 29 and 31 *de minimis* should only be used as last resort;
2. To assist the inclusion of *de minimis* exemptions in catch forecasts discard plans should define the management units/fleets that are to avail of the exemption;
3. It is desirable that plans should state the maximum volume of *de minimis* allocated based on Article 15(4) and how that catch has been derived;
4. In line with Article 15(4) the justification for applying a *de minimis* exemption should be included;
5. To comply with the MSY objective in Article 2(2) of the CFP the *de minimis* allocation should be factored into catch forecasts for the relevant species to ensure that catches do not exceed the advised levels for that stock;
6. To ensure that catches do not exceed advised catches the methodology for monitoring *de minimis* catches should be included;
7. Given that *de minimis* catches could be derived from multiple stocks, the estimation of *de minimis* volumes and the distribution of these catches across fleets/management units should be described within the context of the plan;
8. Where catch advice is not available and where TACs are not applies, then it is difficult to see how a *de minimis* exemptions could be applied.

- By way of guidance EWG 14-01 has looked at three example fisheries, the catch of plaice in the Baltic cod; the North Sea pelagic fishery for herring with a by-catch of whitefish and the issue of seal depredation in Baltic cod and salmon fisheries. These examples have identified issues relating to the use of *de minimis* that Member States should be aware of in relation to allocation and the impact on fishing opportunities in the context of the MSY objective of the CFP.

5 CONTACT DETAILS OF STECF MEMBERS AND EWG-14-01 LIST OF PARTICIPANTS

1 - Information on STECF members and invited experts' affiliations is displayed for information only. In some instances the details given below for STECF members may differ from that provided in Commission COMMISSION DECISION of 27 October 2010 on the appointment of members of the STECF (2010/C 292/04) as some members' employment details may have changed or have been subject to organisational changes in their main place of employment. In any case, as outlined in Article 13 of the Commission Decision (2005/629/EU and 2010/74/EU) on STECF, Members of the STECF, invited experts, and JRC experts shall act independently of Member States or stakeholders. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and invited experts make declarations of commitment (yearly for STECF members) to act independently in the public interest of the European Union. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: http://stecf.jrc.ec.europa.eu/adm-declarations

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6 LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on:

https://stecf.jrc.ec.europa.eu/web/stecf/ewg1401

List of background documents:

1. EWG-14-01 – Doc 1 - Declarations of invited and JRC experts (see also section 5 of this report – List of participants)

European Commission

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Abstract

The Expert Working Group meeting of the Scientific, Technical and Economic Committee for Fisheries EWG-14-01 on Landing obligation in EU fisheries – part 3 - was held from 10-14 February 2014 in Varese, Italy. The report was reviewed and endorsed by the STECF during its plenary meeting held from 24 to 28 March 2014 in Brussels (Belgium).

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As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle. Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new standards, methods and tools, and sharing and transferring its know-how to the Member States and international community.

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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