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Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) - Evaluation of the landing obligation joint recommendations (STECF-17-08)

Edited by D. Rihan and Hendrik Doerner

This report was reviewed by the STECF during its 55th plenary meeting held from 10 to 14 July 2017 in Brussels

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Joint Research Centre

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Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. This report contains reviews of joint recommendations from Member States regional groups for the implementation of the landing obligation in 2018.

Authors:

STECF advice:

Ulrich, C.., Abella, J. A., Andersen, J., Arrizabalaga, H., Bailey, N., Bertignac, M., Borges, L., Cardinale, M., Catchpole, T., Curtis, H., Daskalov, G., Döring, R., Gascuel, D., Knittweis, L., Malvarosa, L., Martin, P., Motova, A., Murua, H., Nord, J., Prellezo, R., Raid, T., Sabatella, E., Sala, A., Scarcella, G., Soldo, A., Somarakis, S., Stransky, C., van Hoof, L., Vanhee, W., Vrgoc, Nedo.

EWG-17-03 report:

Rihan, D., Bellido, J., Bertignac, M., Borges, L., Catchpole, T., Fitzpatrick, M., Grati, F., Lloret, J., Pereira, J., Quetglas, A., Sbrana, M., Uhlmann, S. S., Valentinsson, D., Van Helmond, E., Zolubas, T.

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

Evaluation of the landing obligation joint recommendations (STECF-17-08)

THE EWG-17-03 REPORT AND ADDITIONAL INFORMATION WAS REVIEWED DURING THE PLENARY MEETING HELD IN Brussels, 10-14 JULY 2017

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting and the additional information received from the Regional Groups after the EWG, evaluate the findings and make any appropriate comments and recommendations.

STECF Response

Background of the EWG 17-03

The report of the Expert Working Group 17-03 (STECF EWG 17-03) represents the findings of the meeting convened to review the joint recommendations (JR) from Member States regional groups for the implementation of the landing obligation (LO) in 2018. Joint recommendations for discard plans represent the agreement among Member States (MS) cooperating regionally on the elements for the preparation of Union law (Commission delegated act) in accordance with Article 15.6 of the Common Fisheries Policy. These elements are: definitions of fisheries and species; *de minimis* and high survivability exemptions; fixation of minimum conservation references sizes; additional technical measures to implement the landing obligation; and the documentation of catches. EWG 17-03 reviewed the new or amended joint recommendations from the North Sea, North-western waters (NWW), South-western waters (SWW) Baltic Sea and Western Mediterranean. EWG 17-03 also carried out an analysis of the progression in implementing the landing obligation, following the terms of references.

STECF EWG 17-03 was requested to:

1. Screen any changes in the defined fisheries to be subject to the landing obligation in 2018 for potential anomalies which may create difficulties for managers and fishermen.
2. Review the supporting documentation underpinning exemptions on the basis of high survivability in respect of:
   - Exemptions agreed for 2017 on the basis of high survivability where there was a requirement for further information to be supplied.
   - New exemptions based on high survivability. In data poor situations, assess what further supporting information may be available and how this be supplied in the future (e.g. survival studies, tagging experiments).
3. Review the supporting documentation (biological, technical and/or economic) for the *de minimis* exemptions on the basis that either increasing selectivity is very difficult to achieve, or to avoid handling unwanted catches would create disproportionate cost in respect of:
   - *De minimis* exemptions agreed for 2017 where there was a requirement for further information to be supplied.

- New *de minimis* exemptions. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. discard data collection, selectivity studies).

4. Review whether there is sufficient information to support proposed minimum conservation reference size(s) that deviate from existing minimum landing sizes, and whether they are consistent with the objective of ensuring the protection of juveniles.
5. Review the supporting documentation provided for technical measures aimed at increasing gear selectivity for reducing or, as far as possible, eliminating unwanted catches.
6. Where Joint recommendations have not been put forward by the Member States for relevant sea basins, STECF will need to provide input on the preparation of discard plans.
7. In addition, EWG 17-03 was asked to evaluate additional requests on the following:
   - A *de minimis* request for combined species under the landing obligation for vessels using bottom trawls > 80mm in the Celtic Sea and the English Channel (NWW)
   - Additional scientific information provided by France, supporting the survivability exemption from the landing obligation for Norway lobster provided caught in the Bay of Biscay by bottom trawling (SWW).

STECF observations

There is a large number of JRs analysed by the EWG 17-03. The STECF response is therefore structured as follows: General observations first, then observations on ADRIATICA and SUDESTMED joint recommendations (sent to STECF plenary and not reviewed by EWG 17-03), STECF comments on the EWG 17-03 report when NO new information is available, and STECF comments on the EWG 17-03 report when SOME new information is available to the PLEN STECF 17-02

Regarding the ADRIATICA and SUDESTMED JR, STECF underlines that JR that are dealt with by plenary cannot receive the same amount of scrutiny and consistency check than those addressed in the dedicated EWG. STECF emphasises that JR should be submitted in time for the EWG.

STECF general observations

STECF acknowledges that the EWG 17-03 has addressed all the Terms of Reference.

STECF observes that the EWG is of the opinion that the quality of the preparation of the joint recommendations has improved, including:

- the completion of new high quality survival experiments, considering differences in survivability related to seasonality and following *ICES guidelines for conducting survival experiments* based on ICES WKMEDS (Catchpole et al.);
- Member State Regional Groups have used the templates developed by STECF in 2016 to supply fisheries and fleet descriptors.

Regarding the request to suggest additional information in data poor situations, EWG 17-03 provided information on potential studies/projects that could be used to justify the requested exemptions. For example, the EWG referred to the Solemon project regarding the survivability of common sole; ADRIATICA sent two reports of this project for STECF consideration during the Plenary meeting, and STECF reviewed it (see Table 6 for details). However, other studies/papers may exist that could be used by MS to support the requested exemptions. STECF encourages MS to systematically investigate potential studies and existing scientific articles, and review their main findings before any request is sent out to the EWG.

Notwithstanding these progresses in analyses and reporting, STECF notes that many challenges remain in implementing the landing obligation fully:

- Currently 97 out of 174 stocks subject to LO (excluding the Med) will be covered in discard plans in 2018 if all JR are implemented. This means that 77 stocks (45%) will have to be brought under the LO at the beginning of 2019.
- Survival experiments do not cover all complex "situations" and therefore many gaps of knowledge remain regarding differences in survival rates concerning different areas, seasons & temperature, handling practices, habitat (discarding bottoms), experimental conditions vs commercial conditions, etc.;
- The subjective nature of the conditionalities for exemptions (high survival, disproportionate costs, *de minimis* & economic data) means that the observations and conclusions are based on many assumptions;
- Many of the requests for *de minimis* exemptions remain of a "national nature" rather than regionally focused;
- While many regional groups use the template developed by STECF, there are still limitations in the information provided (landings, fleets, speculative assumptions). Often information is provided for one fleet but not for other fleets using similar gears and which would be also affected. In these cases, further clarification may be required;
- There is a need to improve the collection of catch documentation data as highlighted by STECF PLEN 17-01 and by EWG 17-03. The joint recommendations would benefit from containing provisions that strengthen data collection in this respect. Progressive implementation of innovative monitoring measures, e.g. remote electronic monitoring and CCTV is still absent;

STECF reiterates the position of the EWG 17-03 that when using the provisions of the *de minimis* under Article 15, the requirements of Article 2 of the Common Fisheries Policy (CFP) 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.

STECF also supports EWG 17-03 point of view that article 15.5(c)(ii) states that where continued discarding is permitted through the application of *de minimis* provisions, whilst these catches "shall not be counted against the relevant quotas"; however, all such catches should be fully recorded.

STECF observations on ADRIATICA and SUDESTMED joint recommendations

STECF notes that after the completion of EWG 17-03, two joint recommendations were received from the Member State regional groups in the Mediterranean:

- For the Adriatic Sea EU Member States (ADRIATICA) (Discard Plan for Certain Small Pelagic Fisheries in the GFCM/GSAs 17 and 18 (2018) and the accompanying letter (dated 03-07-2017));
- For certain small pelagic fisheries in the South Eastern Mediterranean Sea GFCM /GSAs 15, 16, 19, 20, 22, 23 and 25 (SUDESTMED).

STECF notes that the ADRIATICA JR states that it is necessary to put in place a new discard plan for the small pelagic fisheries, in order to ensure that the existing measures remain in place for an additional three year period or until a relative multiannual plan is approved. The JR states that the discard management plan will be implemented in GFCM GSAs 17 (northern Adriatic) and GSA 18 (southern Adriatic).

STECF notes that in addition to the objectives, the definitions, the duration and the areas covered, the JR also includes two general principles that:

a) any technical, control or compliance measures adopted for the pelagic fisheries in the Adriatic Sea be efficient, proportional, and enforceable upon all vessels operating under this discard plan.

b) increased selectivity, where possible, is the most desirable way to deliver compliance with the landing obligation

STECF notes however that there is no indication or any detail within the JR as to how these principles will be met.

In the accompanying letter from ADRIATICA, it is stated that "*Relating to the high survivability exemption in purse seine fisheries when the catch is released before the purse seine is closed, we consider that as in the Mediterranean Sea this practice is not forbidden by the technical measures regulation, there is no sense of asking for a high survivability exemption*". STECF highlights that this describes the process of slipping. 'Slipping' occurs when fish are intentionally released from fishing gear before being brought on-board, and before the purse seine is closed. While STECF acknowledges that this practice is not prohibited in the Mediterranean, 'slipped' catches of regulated species are essentially discards and therefore subject to the Landing Obligation. Following Article 15(1) of Basic Regulation (EU) No 1380/2013, regulated species must be landed unless exemptions are granted. Therefore, STECF points out that catches taken by purse seine vessels, even before the purse seine is closed, can only be released if an exemption from the Landing Obligation has been granted.

Existing Commission Delegated Regulations for the NWW, SWW and the North Sea define survivability exemptions for slipped catches from purse seines (Regulations (EU) 1393/2014, (EU) 1394/2014 and (EU) 1395/2014 These Delegated Regulations authorise catches to be slipped where the following conditions are met:

- the catch is released before a defined percentage of the purse seine is closed ('the point of retrieval');
- the purse seine gear is fitted with visible buoys clearly marking the limit for the point of retrieval;
- the vessel and the purse seine gear are equipped with an electronic recording and documenting system monitoring when, where and the extent to which the purse seine has been hauled for all fishing operations.

STECF notes that the JR requests a *de minimis* exemption of up to 5 % of the total annual catches of species subject to minimum sizes in the small pelagic mid-water trawl and purse seines fisheries. This percentage is different from the exemptions currently included in the Regulation (EU) 1392/2014 which state:

-in the northern Adriatic Sea, up to 5 % of the total annual catches of species subject to minimum sizes in the small pelagic mid-water trawl and purse seines fisheries;

-in the southern Adriatic and Ionian Sea: (i) up to 3 % of the total annual catches of species subject to minimum sizes in the small pelagic purse seines fisheries; and (ii) up to 7 % in 2015 and 2016 and up to 6 % in 2017 of the total annual catches of species subject to minimum sizes in the small pelagic mid-water trawl fisheries.

In particular, STECF notes that the JR *de minimis* request (5%) implies an increase from the 3% threshold given in the Delegated act in the case of small pelagic purse seines fisheries in the southern Adriatic.

STECF notes that there is no justification for this change in the *de minimis* volumes included in the JR, and that the current discard rates are not indicated, so STECF cannot comment on this change.

STECF notes that the JR from the SUDESTMED HLG is very similar to the Adriatic and Western Mediterranean plans. The JR states that the discard management plan will be implemented in GFCM GSAs 15, 16, 19, 20, 22, 23 and 25 of the South Eastern Mediterranean Sea.

STECF notes that regarding the species and fisheries covered, the JR states the specific discard plan will be applicable to pelagic fisheries subject to minimum conservation reference size in

South Eastern Mediterranean (GFCM GSAs 15, 16, 19, 20, 22, 23 and 25). GSA 18 (southern Adriatic Sea) is not included in the JR because it is included in the ADRIATICA JR.

STECF further notes that the JR includes GSA 25 (Cyprus) which was not included in article 2 (definitions) of Regulation (EU) No 1392/2014.

STECF notes, as with the Adriatic plan, there are differences in the *de minimis* exemption requested in the new JR compared to the existing Regulation. The new JR requests a *de minimis* exemption of 5% for small pelagic fisheries in the South eastern Mediterranean whereas Regulation (EU) 1392/2014 states that:

-in the southern Adriatic (GSA 18) and Ionian Sea (GSA 19, 20 and 21), (i) up to 3 % of the total annual catches of species subject to minimum sizes in the small pelagic purse seines fisheries; and (ii) up to 7 % in 2015 and 2016 and up to 6 % in 2017 of the total annual catches of species;

-in the Malta Island (GSA 15) and South of Sicily (GSA16): (i) up to 3 % of the total annual catches of species subject to minimum sizes in the small pelagic purse seines fisheries; and (ii) up to 7 % in 2015 and 2016 and up to 6 % in 2017 of the total annual catches of species subject to minimum sizes in the small pelagic mid-water trawl fisheries, set out in point 4 of the Annex;

-in the Aegean Sea (GSA 22) and Crete Island (GSA 23), up to 3 % of the total annual catches of species subject to minimum sizes in the small pelagic purse seines fisheries set out in point 5 of the Annex.

In particular, STECF notes that the JR *de minimis* request (5%) implies an increase from the 3% threshold given in the Delegated act in the case of small pelagic purse seines fisheries in (i) the Ionian Sea, (ii) the Malta Island and South of Sicily and (iii) the Aegean Sea and Crete Island.

STECF notes, as with the Adriatic plan, that there is no justification or supporting information to explain the difference in *de minimis* requested, and that the current discard rates are not indicated, so STECF cannot comment on this change...

STECF comments on the EWG 17-03 report when NO new information is available

For the case of the Baltic Sea (Table3.1) and North-Western Waters (Table 2) and Pelagic plans (Table 3), STECF notes that no additional information has been submitted after the EWG. STECF comments are summarized in Table 1, 2 and 3, respectively.

Some new information has been provided for some South-Western Waters (SWW), North Sea, Mediterranean and Black Sea fisheries, so the discard plans for these regions are treated further below (Tables 4 to 8).

Table 1. Main findings of the STECF EWG 17-03: **Baltic Sea**.

High Survivability	
Fishery	Cod, plaice and salmon caught with trap-nets, creels/pots, fyke-nets and pound net
Main findings of the EWG 17-03	Existing exemption extended to include plaice. Fleet and fishery descriptions are incomplete. Reference only to 4 German vessels but EWG aware that many other countries participate in these fisheries. Supporting study is rather limited and more detailed information would be useful to assess the representativeness and quality of the discard survival estimate attained. However, the fishing gears used are relatively benign and all available information indicates mortality of discarded fish is likely to be low in such fisheries.
Comments STECF PLEN 17-02	STECF notes that no additional information on the fleets from other Member States has been provided. STECF is unaware as to whether this information was requested by the Commission.

MCRS	
Fishery	Baltic Cod
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Technical measures	
Fishery	Modifications to T90 codend
Main findings of the EWG 17-03	New. Proposal to derogate from existing technical measures regulations allowing the use of a modified T90 codend. Results from a series of catch comparison experiments provided which show the modified codend to provide positive benefits in terms of reducing unwanted catches of cod below mcrs. New codend has a smaller mesh size, larger number of meshes in the codend circumference and is longer. Two of these changes intuitively would be expected to decrease selectivity. Therefore if the derogation to allow the use of this modified gear is granted then it should be conditional on further experimentation to demonstrate that the presented results are correct.
Comments STECF PLEN 17-02	STECF is aware that additional selectivity trials are currently being performed in Denmark, and the results could be included in a future evaluation

Table 2. Main findings of the STECF EWG 17-03: **North-Western Waters**.

De minimis	
Fishery	Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Common sole caught with beam trawls with a mesh size of 80-119mm with increased mesh sizes in the extension of the beam trawl
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03. The definition for the Flemish panel proposed by the NS group should also be included in any new version of the NWW discard plan.
Comments STECF PLEN 17-02	STECF has no further comments
Fishery	*Nephrops* caught with bottom trawls with a mesh size of 80-99mm in ICES subareas VI and VII
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Channel
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Whiting caught with bottom trawls and seines ≥100mm and pelagic trawls to catch whiting in the Celtic Sea and the Channel

Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Celtic Sea
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Combined *de minimis* for species under the landing obligation for vessels using bottom trawls >80mm in the Celtic Sea and the English Channel
Main findings of the EWG 17-03	Not part of JR but EWG asked to consider a standalone proposal. No new information is presented to support the proposal and justification is based on previous experiments used to support existing *de minimis* exemptions for whiting in the Celtic Sea and Channel. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. However, MS should be aware it will mean the eventual TAC will be much lower. Combining catches effectively means the volume of *de minimis* for any individual species can be in excess of 5%.
Comments STECF PLEN 17-02	STECF notes that to respect the precautionary approach, under a combined *de minimis*, the separate *de minimis* volume for each individual species within the combined species can only be accounted for in respective stocks TACs by discounting the maximum possible amount of *de minimis* for each species that could potentially be discarded. STECF notes that this is likely to reduce the fishing opportunities for all other fleets catching these stocks.
High Survivability	
Fishery	*Nephrops* caught with Pots, Traps or Creels in ICES subareas VI and VII
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Common sole (undersized only) caught with trawl gears in area VIId
Main findings of the EWG 17-03	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional information has been supplied including the results from new experiments which show no effect of seasonality on survival between trips in August and October. Information relating to the location of nursery areas as referred to in the Delegated Act is missing. These areas are not defined so it is not possible to monitor whether fishing is occurring outside such areas
Comments STECF PLEN 17-02	STECF has no further comments but re-iterates the observations of EWG 17-03 that the nursery areas referred to in the Regulation should be defined.

Table 3. Main findings of the STECF EWG 17-03: **Pelagic plans**.

De minimis	
Fishery	Artisanal pelagic trawl fisheries using OTM and PTM in ICES sea area

	IV b,c and VIId
Main findings of the EWG 17-03	Existing. Extension of existing exemptions contained in the North Sea and NWW discard plans to include PTM gear. The transition from the current discard rate to the 1% (*de minimis* level) will be challenging without significant changes of fishing pattern, either by improvements in selectivity or by avoiding areas of higher unwanted catch. This may provide an incentive for the fleets involved to adapt their behaviour and continue research on ways to improve selectivity and is a reasonable justification to retain the exemption.
Comments STECF PLEN 17-02	STECF has no further comments.
High Survivability	
Fishery	*Mackerel and Herring in the ring net fishery in ICES areas VIIe and VIIf*
Main findings of the EWG 17-03	New exemption for 2019 but previously assessed by STECF in 2015. The basis for the exemption is similar to other exemptions included under the existing *de minimis* plans and there are certain similarities between the fisheries.
Comments STECF PLEN 17-02	STECF has no further comments.
Technical measures	
Fishery	Sprat fisheries in the North Sea
Main findings of the EWG 17-03	New derogation. Given the fact that the supporting study for this derogation request only covered two years further research would be useful in evaluating the validity of the conclusions reached by ICES.
Comments STECF PLEN 17-02	STECF has no further comments.

STECF comments on the EWG 17-03 report when NEW information is available to the PLEN STECF 17-02

South West Waters

STECF notes that in relation to the main findings of the EWG, the Commission has requested additional information from the Member States regional groups. In most cases this information has been provided to the Commission.

For the case of South-Western waters the following additional documents were made available to the PLEN STECF 17-02:

- Informe: asesoramiento para aportar información científica a una solicitud de información complementaria sobre el estudio de la merluza para la solicitud del "de mínimis" y la de las cigalas. IEO.
- Study of the Portuguese Fleets catching hake (*Merluccius merluccius*) in area IXa. Directorate-General for Natural Resources, Safety and Maritime Services
- Additional information for the *de minimis* exemption consolidation request for hake (*merluccius merluccius*) of 6%, for 2017 and 2018 and 5% thereafter proposed) from Spain for trawlers catching hake in the Bay of Biscay (ICES VIIIa,b,d). Anon.
- A scientific paper titled: Bio-economic assessment of a change in fishing gear selectivity: the case of a single-species fleet affected by the landing obligation. Scientific paper.
- A table for the *Nephrops* survivability exemption where additional information of the fleets subject to this exemption is provided.

In light of this new information the following comments apply in addition to the observations from STECF EWG 17-03 (Table 4).

Table 4. Main findings of the STECF EWG 17-03 and summary of additional information received relating to exemptions presented: **South-Western Waters**.

DE MINIMIS	
Fishery	Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Common sole caught with beam trawls and bottom trawls in directed fishery in ICES subareas VIIIa,b
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake caught with trawls in directed fisheries in ICES subareas VIII and IX
Main findings of the EWG 17-03	Data missing in respect of number of vessels, catches, discards and *de minimis* volumes already recorded and for other fleets which have significant catches of hake. Baseline selectivity data for the standard gears used in the fisheries not supplied. EWG cannot assess if the additional workload created by the landing obligation represents a disproportionate cost for the fisheries covered by this exemption.
COM comments to Regional Groups	A request for more information of the economic impact of increasing selectivity and of sorting and handling catch. Information about the fleets and fisheries concerned by the exemption are requested.
Response by Regional Groups	Additional information of fleets and métiers definition for vessels operating in the Bay of Biscay (VIIIabd) is provided, including: • Additional information on the increased workload required to meet LO requirements. It includes physical and economic estimations for fleets operating in the VIIIabd and VIIIc. • Additional information on the likely economic consequences of increasing the selectivity in for Portuguese fleets (IXa) and Spanish Pair trawlers (VIIIabd), demonstrating the economic losses from improvements in selectivity.
Comments STECF PLEN 17-02	STECF notes that no new information is provided in terms of *de minimis* volumes already recorded. STECF notes that no information has been provided for French fleets, which have significant catches of hake. STECF notes that further information on the baseline selectivity data for the standard gears is needed to provide a full assessment. STECF notes that from the studies provided no economic gain is obtained from increasing the selectivity (Pair trawler), and an economic loss of 71% is reported for Portuguese trawlers. STECF notes that according to the information provided, there is a likelihood of increasing of effort on board being required in sorting catches and deteriorating safety conditions even if mitigation measures to reduce unwanted catches are adopted. STECF cannot

	assess whether this is specific to these fisheries or generic to all fisheries subject to the landing obligation. STECF reiterates the conclusion of the STECF EWG 17-03 that selectivity experiments presented were not successful in reducing catches of unwanted hake, but comparative information of the selectivity with larger mesh size is not available
High survivability	
Fishery	*Nephrops* caught with trawls in ICES subareas VIII and IX
Main findings of the EWG 17-03	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional studies have been completed and have largely addressed the issues raised by STECF in 2016 regarding the duration of the original experiments. The fleet descriptions provided are detailed for French and Portuguese fleets but there are other relevant fleets, notably Spanish, for which no information has been provided.
COM comments to Regional Groups	Not available
Response by Regional Groups	A table including the details of Spanish vessels affected by this exemption has been provided
Comments STECF PLEN 17-02	STECF notes that according to the additional information provided there are up to 191 French, 198 Spanish and 24 Portuguese vessels that fall under the existing exemption. STECF further notes that this new information addresses the observation from EWG 17-03 and that the full scope of fisheries to which the exemption could apply is now known. STECF agrees with the observations of EWG 17-03 that the evidence provided for the survival of discarded *Nephrops* gives robust scientific estimates of discard survival. The derived survival rates were calculated as 36.9% (20.9-52.9%) for individuals with the "standard" sorting process and 51.2% (30.9-71.5%) for individuals sorted with the "chute system". These survival estimates should be interpreted as the maximum discard survival estimates as they do not account for induced experimental mortality, and exclude marine predation.
MCRS	
Fishery	Horse mackerel in ICES VIIIc and IXa
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.

North Sea

For the case of the North Sea the following additional documents were made available to the PLEN STECF 17-02:

- Information has been provided by the UK on the numbers of vessels, catch etc. for *Nephrops* grounds outside the Farn Deeps in respect of the high survivability exemption for *Nephrops* caught with trawl gears in area IV. Limited information has also been provided for relevant NL vessels in respect of this exemption.
- Fleet and fishery information has been provided by DE and NL in respect of the high survivability exemption for fish bycatch in pots and fyke nets in area IIIa and IV.
- Fleet and fishery information has been provided by DE, NL and the UK in respect of the *de minimis* exemption for whiting and cod caught using bottom trawls < 100mm (TR2)

Table 5. Main findings of the STECF EWG 17-03 and summary of additional information received relating to exemptions presented: **North Sea**.

De minimis	
Fishery	Fish bycaught in *Nephrops* targeted trawl fishery
Main findings of EWG 17-03	Existing but NS regional group propose to include cod catches in the calculation of *de minimis* volume. There are no additional studies provided to support this exemption over and above what was presented in 2016. The only additional information is a re-calculation of the volumes with cod catches added. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. However, MS should be aware it will mean the eventual TAC will be much lower. A detailed description of the fleets and fisheries is provided
COM comments to Regional Groups	None
Response by Regional Groups	No action required
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	*Nephrops* caught by bottom trawls with a mesh size of 80-99mm
Main findings of EWG 17-03	Existing provision by NS regional group propose the level of *de minimis* from 6% to 2%. There are no issues with this exemption
COM comments to Regional Groups	None
Response by Regional Groups	No action required
Comments STECF PLEN 17-02	No additional comments
Fishery	Whiting and cod caught using bottom trawls < 100mm (TR2)
Main findings of EWG 17-03	Existing provision with cod added. No additional supporting information is supplied and the exemption is based on the justification provided in 2016 for the French fleet. An additional Dutch Fleet has been included under the exemption but no information describing this fleet is provided. No information is also provided for justifying the inclusion of this fleet under the exemption With cod and whiting catches now combined for the *de minimis* there is a possibility that the volumes of *de minimis* requested could exceed the actual volume of cod discards particularly for the Dutch fleet. MS should be aware it will mean the eventual TAC will be much lower as the increased volumes of *de minimis* will need to be taken account of in the catch advice and deducted from the available fishing opportunities. Very little information on the economic impact of increasing selectivity and of sorting and handling catch is provided for either the French or Dutch fleets.
COM comments to Regional Groups	Information on other fleets that may avail of this exemption in addition to the French fleet.
Response by Regional Groups	Fishery and fleet descriptor data has been supplied for UK, Netherlands (NL) & Germany (DE). • UK report 22 TR2 vessels in area IVc targeting sole and landing more than 5 tonnes of species other than

	Nephrops. These vessels had catches of 19.2 tonnes of cod and 4.7 tonnes of whiting of which 1.3 tonnes of cod and 2.2 tonnes of whiting were discarded. Discard rates for cod and whiting were 7.5%and 91% respectively. A *de minimis* volume of 1.15 tonnes of cod and 281kg of whiting is requested. • NL report 38 TR2 vessels not targeting *Nephrops.* These have very small catches of cod and whiting are recorded and a *de minimis* of 93kg of whiting is requested, equating to 4% of the total catches of whiting. • DE report 3 vessels operated in IVc with TR2 gear mainly in a mixed fishery targeting plaice. Landings data is provided shows landings of cod of 151kg with no landings of whiting. No discard data is provided.
Comments STECF PLEN 17-02	Fisheries and fleet descriptor data has been provided for FR, UK, NL and DE. For NL is not clear what the actual landings and discards were from the vessels reported. The DE data is incomplete as no estimates of discards are included. Therefore STECF is not able to comment on the total level of *de minimis* volume being requested under this exemption. However, given that the catches of cod and whiting by the UK, NL and DE (landings only) are negligible and provided discarding under the exemption is monitored, the impact from these fleets is likely to be minimal. The FR fleet has much higher levels of catches of cod and whiting. STECF re-iterates the observations of EWG 17-03 that the potential maximum volumes of *de minimis* for whiting and cod, taking account of the limitation of 2% on cod discards, should be deducted from the catch advice and deducted from the available fishing opportunities. STECF also observes that economic information to support the exemption is still lacking but notes that the Member States were not asked by the Commission to provide any further information.
Fishery	Fish bycaught in Northern prawn trawl fishery with a sorting grid, with unblocked fish outlet
Main findings of EWG 17-03	Existing but NS regional group propose to include cod catches in the calculation of *de minimis* volume. There are no additional studies provided to support this exemption over and above what was presented in 2016. The only additional information is a re-calculation of the volumes with cod catches added. Levels in the case of this exemption are quite low reflecting the relatively low discards of undersized fish in this fishery. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. A detailed description of the fleets and fisheries is provided.
COM comments to Regional Groups	None
Response by Regional Groups	No action required
Comments STECF PLEN 17-02	No additional comments
Fishery	Whiting caught in bottom trawls ≥ 90mm in IIIa
Main findings of EWG 17-03	New. A combination of previous studies and ongoing studies are used to justify the exemption based on difficulties in increasing selectivity. Limited economic data based on prices for whiting are provided for the fisheries involved. This data shows the handling costs exceed the selling price for the landings of all whiting. The 2% *de minimis* volume requested is higher than the current discard volume of whiting below MCRS so in effect the exemption encourages high-grading by allowing for the discarding of otherwise marketable whiting. This may also act as an incentive not to try to improve selectivity in the fishery any further. The request covers one fishery where there are no reported

	discards. The fisheries and fleets are well described.
COM comments to Regional Groups	None
Response by Regional Groups	No action required
Comments STECF PLEN 17-02	No additional comments
Fishery	Bycatch of plaice in fisheries caught in the *Nephrops* trawl fishery with a mesh size ≥ 80-99mm with a SEPNEP in ICES area IIa and IV
Main findings of EWG 17-03	New. Detailed information is provided to support this exemption which is based on the use of a selective gear to reduce plaice discards. The case is well presented and the information provided is reasonable. It shows plaice discards can be reduced by up to 80% and the *de minimis* is requested to cover residual discards that cannot be released. A definition of the SEPNEP gear modification is provided in the JR which is useful. The definition would benefit from some re-drafting as it is not altogether clear.
COM comments to Regional Groups	None
Response by Regional Groups	No action required
Comments STECF PLEN 17-02	No additional comments
High survivability	
Fishery	*Nephrops* caught with trawl gears with a Netgrid selectivity device in area IV
Main findings of EWG 17-03	Existing. Delegated act required submission of additional scientific information supporting the exemption. No new studies have been completed although additional information relating to two of the factors known to affect discard survivability was provided; catch composition and environmental variables (ambient air and water temperature) on different *Nephrops* grounds. These studies increase the knowledge regarding the representativeness of the underpinning survival study for the current exemption. They show survival is unlikely to differ due to environmental conditions between the *Nephrops* grounds in the Farne deeps and Firth of Forth and Moray Firth but not whether differences in fisheries and catch compositions is likely to differ between the Farne deeps and these two areas. The information does not support a survival exemption in the whole of area IV at all times of the year.
COM comments to Regional Groups	Provision of information on the numbers of vessels, catch etc. for *Nephrops* grounds outside the Farne Deeps, using the STECF template.
Response by Regional Groups	Detailed information on the number of vessels, catch, discard rates and estimated survival rates for *Nephrops* by FU's excluding the Farne Deeps has been provided by the UK. Limited information has been provided for the NL that reports that 1 vessel fished in the Farne Deeps and caught 3 tonnes of *Nephrops*
Comments STECF PLEN 17-02	Fisheries and fleet information is now completed for the UK. Limited information is provided for NL but only 1 vessel is involved with very limited catches.

	STECF re-iterate the observations of EWG 17-03 that there is insufficient evidence to support applying this exemption for the whole of area IV and at all times of the year.
Fishery	Common sole (undersized only) caught with trawl gears in area IVc
Main findings of EWG 17-03	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional has been supplied including the results from new experiments which show no effect of seasonality on survival between trips in August and October. Information relating to the location of nursery areas as referred to in the Delegated Act is missing. These areas are not defined so impossible to monitor whether fishing is occurring outside such areas.
COM comments to Regional Groups	Clarify the location of the nursery areas referred to in the JR (if at all applicable for area IVc).
Response by Regional Groups	No information provided
Comments STECF PLEN 17-02	STECF re-iterates the comments of EWG 17-03 that it is important that the position of these nursery areas is clearly indicated in the relevant Regulation. These nursery areas have been identified for VIId in an earlier STECF plenary meeting (15-02). It is not clear whether such nursery areas have been identified in the North Sea.
Fishery	Fish bycatch in pots and fyke nets in area IIIa and IV
Main findings of EWG 17-03	Exemption is intended to replace existing *de minimis* exemption included in the Delegated Act. No direct evidence is presented on the survival rates of the discarded species in the proposed fisheries. The exemption applies to pot fisheries targeting crustaceans but the evidence is based on the survival of discarded cod from pots used to target fish (consistently >75%). Increasing depth has a negative effect on the health of released cod. The exemption assumes that haddock, whiting, cod, plaice, sole, hake and saithe released from crab and lobster pots and *Nephrops* creels have the same survival chances as cod released from pots used to target fish. There is no direct evidence to support this but it is reasonable to infer that, at the point of release, and assuming environmental and technical operations are comparable, the likelihood of survival is high. The risk of substantial avian predation of discarded fish needs to be considered in such an exemption. Fleet and fishery descriptions are detailed for Sweden, less clear for UK, and there may be other countries associated with the proposed exemption that have not been described.
COM comments to Regional Groups	Fleet and fishery information for all fleets that potentially will avail of this exemption, using the STECF template.
Response by Regional Groups	Limited data has been provided for DE and NL. • DE reports that between 1-3 vessels used pots to target edible crab in area IIIa and IV. There was no fish bycatch landed and there is no discard data available. • NL reports that 67 vessels (< 10m) target Chinese river crab and lobster in coastal and estuarine waters with pots. There is no reported bycatch of species subject to the landing obligations. Other Member States – UK, DK, BE and FR - are not affected by this exemption.
Comments STECF PLEN 17-02	The information provided helps to clarify which fleets intend to avail of this exemption. In this regard STECF re-iterates the

	observations of EWG 17-03 that given these gears are relatively benign, all information available indicates that mortality of discarded fish is likely to be low and that the actual catches are negligible, the impact of this exemption is minimal.

Mediterranean

For the case of Mediterranean, the following additional documents were made available:

- A document provided by PESCAMED high level group with information on fishery of Norway lobster (*Nephrops norvegicus*) in Spain, France and Italy;
- Two reports provided by Italy on behalf of ADRIATICA on Solemon project (2015 and 2016) with preliminary results on survivability of common sole caught with rapido trawl in GSA17 in the Adriatic Sea, together with data on the fishery: Report of the Adriatic Beam Trawl Survey (SoleMon) in GSA 17 – 2015 and Report of the Adriatic Beam Trawl Survey (SoleMon) in GSA 17 – 2016.

On the light of this new information the following comments apply in addition to those coming from the STECF EWG 17-03 (Table 6).

Table 6. Main findings of the STECF EWG 17-03 and summary of additional information received relating to exemptions presented: **Mediterranean**

De minimis	
Fishery	Hake and red mullet by vessels using trawl nets in the Western Mediterranean
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet by vessels using gillnets in the Western Mediterranean
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet using trawls in the Adriatic
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet using gillnets in the Adriatic
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet using rapido (beam trawls) in the Adriatic
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Common sole using trawl nets in the Adriatic
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03

Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Common sole using gillnets in the Adriatic
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet by vessels using trawl nets in the south-eastern Mediterranean
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Hake and red mullet by vessels using gillnets in the south eastern Mediterranean
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Deep-water rose shrimp in the south eastern Mediterranean
Main findings of the EWG 17-03	Existing provision and was therefore not evaluated by EWG 17-03
Comments STECF PLEN 17-02	STECF has no further comments.
High survivability	
Fishery	Scallop caught with mechanised dredges in GSAs 1, 2, 5 and 6;
Main findings of the EWG 17-03	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Carpet clams caught with mechanised dredges in GSAs 1, 2, 5 and 6
Main findings of the EWG 17-03	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	Venus shells caught with mechanised dredges in GSAs 1, 2, 5 and 6
Main findings of the EWG 17-03	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Comments STECF PLEN 17-02	STECF has no further comments.
Fishery	*Nephrops norvegicus* caught with trawls in the western Mediterranean
Main findings of the EWG 17-03	The JR from the PESCAMED high level group (HLG) requested a new exemption for *Nephrops norvegicus* caught with trawls in the western Mediterranean on the basis of high survivability The PESCAMED HLG provided a report of survivability experiments carried out as part of the EU funded Minouw project - "Survival of discarded *N. norvegicus* from the Catalan Sea bottom trawl fishery". EWG 17-03 noted that the discard survival estimates generated were not representative, as samples for observation were taken only at the beginning of the sorting process. PESCAMED HLG did not provide any data for the fisheries

	affected (Spain, France and Italy).
COM Comments to Regional Groups	Not available
Response by Regional Groups	PESCAMED HLG has provided a document with information on the fisheries for *N. norvegicus* in Spain, France and Italy
Comments STECF PLEN 17-02	STECF notes that the fisheries and fleet information provided for Spain and France is brief and not fully homogeneous. These countries provide a brief summary of the *Nephrops* fishery in these countries regarding gear characteristics, fishing grounds, associated species in the catch, number of vessels and, in the case of France, landings data. No catch information is provided for Spain. Regarding the information provided by Italy, STECF wondered whether there could be an error in the information supplied. The reported information relates to lobster, but STECF emits some concerns that it may not be Norway lobster (*Nephrops*) but probably spiny lobster, *Palinurus elephas*, instead of *Nephrops*. The reasons for these concerns relate to the description of the gear used and the price. The Italian information refers to trammel nets and not to trawls. In the Mediterranean, including in Italy, the main gear to catch *Nephrops* is trawls whereas spiny lobster is fished mainly with trammel nets. In conclusion, is this sufficient/insufficient, check the template with regards to other areas/JR, EWG 16-17
Fishery	Common sole (*Solea solea*) caught with rapido (beam trawl) in GSAs 17 and 18
Main findings of the EWG 17-03	Commission Delegated Regulation (EU) 2017/86 includes an exemption on the basis of high survivability for common sole caught with rapido trawls in the Adriatic Sea GSA 17 and GSA 18. This exemption was granted for one year on the provision that the Member States concerned in the fishery should submit relevant data to the Commission to allow STECF to further assess the justification for this exemption. However, this information was not provided to EWG 17-03 so the working group was unable to carry out an evaluation. EWG 17-03 noted that survivability studies for the common sole in the GSA 17 were in progress in the framework of the SOLEMON project carried out by the CNR-ISMAR (Ancona, Italy). It also noted that there exist other published studies on the survivability of this species in other areas. EWG 17-03 stated that these studies may provide supporting information for the requested exemption.
COM Comments to Regional Groups	Not available
Response by Regional Groups	Italy on behalf of ADRIATICA provided two reports of the Solemon project (2015 and 2016) with preliminary results on survivability of common sole caught with rapido trawl in GSA17 in the Adriatic Sea, together with data on the fishery.
Comments STECF PLEN 17-02	STECF notes that results of the Solemon project are preliminary and that the project was not designed to specifically evaluate the survival rates of Common sole caught with rapido trawl in the Adriatic. Results are based on two experiments conducted in 2015 and 2016 comprising a total of 8 hauls and about 150 individuals, covering common sole below the MCRS (20 cm TL). STECF notes that the experiments were only conducted in GSA 17 (i.e. GSA 18 was not covered), and that the methodology used in the experiments is not fully explained (there is reference to van Beek FA et al. 1990; On the survival of plaice and sole discards In the otter trawl and beam trawl fisheries in the North Sea. Neth J Sea Res 26: 151 – 160) STECF notices that preliminary results of the Solemon project show that survival at the point of release is between 83.2% and 72.3%, and between 69.7 and 57.4% after 72 hr observation. However, it is not known whether mortalities had ceased by this time, but based on other studies, additional mortalities are likely to have occurred beyond 72 hr, therefore an absolute discard survival estimate cannot be determined

In		from the evidence provided. STECF notices that the surveys were done in winter (late November) and therefore it is likely that the reported survival rates are higher than the rates that could have been estimated in summer months when temperatures are much higher. STECF notes that the surveys were done in shallow waters (8-14 m depth) and therefore it is likely that the reported survival rates are higher than the rates that could have been estimated if individuals would have been caught in deeper waters. STECF further notes that the experiments were conducted as part of research cruises. It is not clear how representative the gear used and the conditions under which the sole were collected are of commercial practice. In particular, STECF observes the tow times were of a very short duration and this may be a factor in the high survival rates observed. In conclusion, there are some indications of potential survival in this fishery, but the method used was not sufficient to derive robust and representative estimates of survival.

conclusion, the information provided by France is quite complete in relation to fisheries data, but not the information provided by Spain, whereas Italy still has to present data on that fishery. Regarding survival rates of *Nephrops*, only Spain has submitted data. A table summarizing all existing information (fishery + survival rates), which updates table 10.1.1 shown in EWG 17-03 report, is given below in Table 7. This updated table shows the information by country that is still missing.

Table 7. Update of Table 10.1.1 given in STECF EWG 17-03 report: Summary of high survivability exemptions submitted as part of the Mediterranean Joint Recommendations (restricted to new of re-assessed exemptions)

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Country	Exemption applied for (species, area, gear type)*	Species as bycatch or target	Number of vessels subject to the LO	Landings (by LO subject Vessels)	Estimated Discards*	Estimated Catch	Discard Rate	Estimated discard survival rate	from provided studies
France	Norway lobster caught with trawls	GSA7: bycatch GSA8: target	50 (but <10 really targeting *Nephrops*, mainly in GSA 8)	GSA7: 9t GSA8: 7-18t	<10% of total catch	unknown	unknown	unknown	Fisheries: https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/annex_en.pdf
Spain	Norway lobster caught with trawls	target	608	unknown	unknown	unknown	unknown	- Winter 74% - Spring 36% - Summer 6%	Survival rates: MINOUW project
Italy	Norway lobster caught with trawls	target	unknown	unknown	unknown	unknown	unknown	unknown	

- * The information given here should be disaggregated by exemption applied

Black Sea

For the Case of Black Sea, the following additional documents were made available:

- A letter from Bulgaria explaining the motivations for the exemption of turbot (*Psetta maxima*) caught with bottom set gillnets (GNS) in the Black Sea on the basis of high survivability.

In light of this new information the following comments apply in addition to those coming from the STECF EWG 17-03 (Table 8).

Table 8. Main findings of the STECF EWG 17-03 and summary of additional information received relating to exemptions presented: **Black Sea**

High survivability	
Fishery	Turbot (*Psetta maxima*) caught with bottom-set gillnets (GNS) in the Black Sea
Main findings of the EWG 17-03	Commission Delegated Regulation (EU) 2017/87 established a discard plan for turbot fisheries in the Black Sea. This discard plan is valid until 31 December 2019 and includes an exemption on the basis of high survivability for turbot caught in bottom set gillnets (GNS). This exemption was granted for one year on the provision that the Member States concerned in the fishery should submit relevant data to the Commission to allow STECF to further assess the justifications for this exemption. However, no information was provided to EWG 17-03 therefore the working group was unable to carry out an evaluation. STECF also notes that according to the Delegated Act, by 1 May 2017 Member States having a direct management interest in the turbot fisheries in the Black Sea shall submit to the Commission additional discard data to those provided for in the Joint Recommendation of 4 July 2016 and any other relevant scientific information supporting the exemption laid down in paragraph 1. The Scientific, Technical and Economic Committee for Fisheries (STECF) shall assess those data referred in paragraph 3 by July 2017 at the latest.
COM Comments to Regional Groups	Not available
Response by Regional Groups	Bulgaria provided a letter explaining the motivations for the exemption of turbot caught in bottom set gillnets (GNS) on the basis of high survivability.
Comments STECF PLEN 17-02	STECF notes that the letter provided by Bulgaria does not provide any discard data. The reason stated in the letter for not providing this information relates to the provisions included in Recommendation GFCM/37/2013/2 on the establishment of a set of minimum standards for bottom-set gillnet fisheries for turbot and conservation of cetaceans in the Black Sea. STECF understands that (i) if member states ensure that mesh size of the GNS is greater or equal to 400 mm as stated in the GFCM recommendation, and (ii) if turbot with a size less than 45 cm measured from the tip of the snout to the end of the tail fin (Total length) is not caught (as it is also stated in the GFCM Recommendation), then discards may be low. It is stated in the letter that gillnets use mesh size ≥ 400mm, but STECF notes that no data are presented to support this statement, and that no length distributions are provided either.. STECF notes however that the letter from Bulgaria acknowledges that a pilot study is currently being implemented to assess the discards of turbot caught with GNS, and that data will be submitted when available. Furthermore, the letter acknowledges that discard data will be also evaluated in the frame of the DCF work plan in 2018 through on board sampling. STECF recognizes the potential value of these sampling programs that should provide discard information. STECF notes that the letter from Bulgaria does not provide any results on survival rates of turbot caught with GNS. The letter simply states

	that the Bulgarian scientists support the survivability exemption for turbot caught with GNS in the Black Sea, and on the basis of this statement, the Bulgarian authorities request an extension of the exemption. STECF points out that the exemption should supported by experimental studies demonstrating high survivability as with all other exemptions currently in place in other sea basins. STECF notes that according to the current discard plan, not only Bulgaria but also Romania have a direct fisheries management interest in the exploitation of turbot in the Black Sea. Romania has not provided any background on discards or justification for the high survivability exemption for turbot. In conclusion the information that would support a high survival exemption has not been provided and STECF cannot evaluate it.

STECF conclusions

Conclusions about the EWG 17-03 report

STECF concludes the EWG 17-03 has addressed all the terms of references and has also provided information on the progress in implementing the LO.

STECF supports the EWG 17-03 observations that avoidance of unwanted catch through improved selectivity or other means should be the primary focus in implementing the landing obligation. STECF notes though that none of the JR received contain any concrete measures to promote an increased selectivity.

STECF notes similarly that none of the JR received contain any concrete measure for the control and documentation of catches. STECF understands that several regional groups of Member States have set up control expert working groups working with the European Fisheries Control Agency (EFCA) to consider this element and they have put forward a number of proposals for appropriate measures. STECF urges the regional Member States to consider these findings and implement the measures proposed where relevant and appropriate

STECF also supports the EWG 17-03 observations that the decision to accept or reject an exemption proposal based on the survival value presented is a decision for managers. STECF cannot adjudicate on whether exemptions should be accepted or not.

STECF concludes that it is necessary to better understand the complex variables affecting the survival rate of species (e.g. area, temperature, season, handling times and procedures, habitat where individuals are discarded), as well as the socioeconomic justification for the *de minimis* exemptions. This will support future evaluations of proposed exemptions, and assist managers in drawing up future discard plans.

In this regards, STECF recalls also the conclusions made by STECF PLEN-16-02 and reported in STECF 16-06 regarding the impact of the survival vs. *de minimis* exemptions in terms of discard mortality. STECF highlights that what constitutes high survival needs also to be seen in relation with the relative amount of fish that die, and not only in consideration of those that survive, and this relates not only to the survival rate but also to the discard ratio in the fishery. STECF PLEN 16-02 had provided examples of this, highlighting that for example an exemption based on a survival rate at 51% with a discard ratio at 15% (Figure 1) implies a discard mortality of 0.51*0.15=7.6%, which might be higher than with a corresponding *de minimis* exemption.

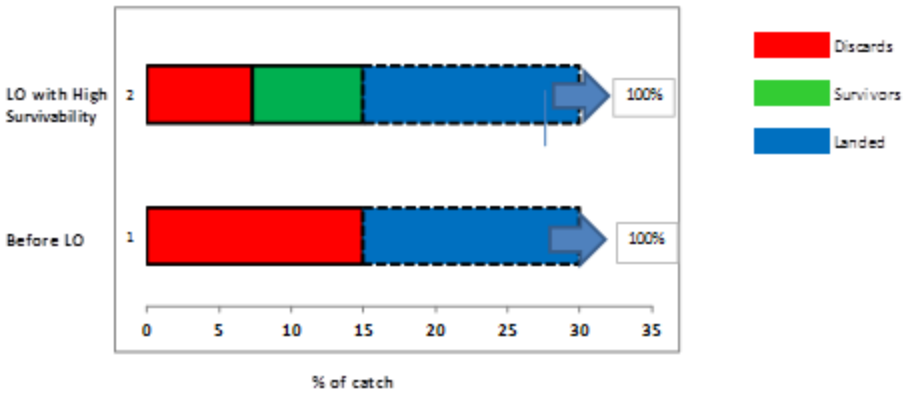

Figure 1. Discards, survivors and landed proportion using a discard rate = 15% and a survival rate = 51%

STECF highlights that there is a difference in the speed of implementation between regions. STECF notes that all stocks in the Baltic are now subject to the landing obligation. Implementation progresses vary between 74% of the number of TACs being at least partly under the landing obligation in 2018 in the North Sea to around 50% in the NWW. For the TACs which straddle two or more regions, around 50% of stocks are now covered. In non-Union waters only the Highly Migratory species are subject to the landing obligation. It is understood that other TAC species in non-Union waters will be subject to the landing obligation in 2018 but no details were available to EWG 17-03 on the number of stocks affected. STECF concludes that based on Joint Recommendations for 2018 if implemented, 55% of the TAC species will be subject to the landing obligation.

Regarding the suggestion for a combined *de minimis* for cod, haddock and whiting in trawl fisheries in the Celtic Sea and Western Waters, STECF concludes that this approach offers a degree of flexibility which may help fishermen adapt to the landing obligation in mixed fishery situations. However, STECF agrees with EWG 17-03 that for any *de minimis*, discard quantities should be deducted from the catch opportunities arising from F_{MSY} based catch advice. In this context and to respect the precautionary approach, under a combined *de minimis*, the separate *de minimis* volume for each individual species within the combined species can only be accounted for in respective stocks TACs by discounting the maximum possible amount of *de minimis* for each species that could potentially be discarded. STECF notes that this is likely to reduce the fishing opportunities for all other fleets catching these stocks. As such, any flexibility granted to some groups of vessels could have negative implications for other groups of vessels. Further analysis may be required to fully understand the trade-offs involved in this approach or in similar approaches put forward by regional groups of Member States.

Conclusions about the new information received to address some of the issues identified by EWG 17-03

STECF concludes that the regional groups of Member States have addressed some of the issues identified by EWG 17-03. Regional groups have generally clarified the fleet segments to which the exemptions would apply and also how the *de minimis* will be calculated. The regional groups have also provided some additional information in support of several specific exemption proposals where inconsistencies or gaps were identified by EWG 17-03.

STECF notes that Bulgaria and Romania have not provided discard data for turbot caught by bottom-set gillnets (GNS) in the Black Sea as requested in the existing Regulation. STECF acknowledges the effort of Bulgaria to obtain new discard data through pilot studies and through the planned DCF 2018 work programme.

STECF also notes that Bulgaria and Romania have not provided any information to support the high survivability exemption for turbot caught by GNS in the Black Sea. STECF is therefore unable to carry out any evaluation as to whether this exemption is justified or not.

STECF concludes that regarding the *de minimis* exemption requested for the Hake caught with trawls in directed fisheries in ICES subareas VIII and IX, some information is still missing (*de minimis* recorded and French fleet data). STECF notes that the selectivity experiments presented were not successful in reducing catches of unwanted hake, but comparative information of the selectivity with larger mesh size is not available. Further selectivity experimentation could provide estimates of baseline selectivity of existing gears to allow comparison with experimental gears.

STECF concludes that regarding the high survivability exemption requested for *Nephrops* caught with trawls in ICES subareas VIII and IX, the supporting information provides robust scientific estimates of discard survival for one Functional Unit (FU23).

STECF concludes that most of the missing fleet and fishery information requested for the North Sea *de minimis* exemptions and high survivability exemptions has been provided by the Member States and was considered adequate. However, no information has been provided in relation to nursery areas for sole related to the high survivability exemption for areas IVc and VIId.

Conclusions on the JRs in the Mediterranean Sea

STECF concludes that the ADRIATICA and SUDESTEMED HLGs have not provided information to support the changes in the *de minimis* levels proposed in the JRs for the Adriatic Sea and South Eastern Mediterranean. In the absence of such information STECF is unable to assess whether an increase from 3% to 5% *de minimis* in some GSAs (i.e. small pelagic purse seines fisheries in (i) the southern Adriatic and Ionian Sea, (ii) the Malta Island and South of Sicily and (iii) the Aegean Sea and Crete Island) will have any additional impact in terms of increased catch of the corresponding small pelagic species .

STECF notes the inclusion of GSA 25 (Cyprus) in the JR for the South-eastern Mediterranean. However, in the absence of any justification to support the inclusion of this GSA, STECF cannot comment further.

Regarding the assertion raised in the letter accompanying the ADRIATICA JR, relating to slipping in purse seine fisheries, STECF considers that a request for high-survival exemption is necessary as slipping represents discarding. Any such request should be supported by relevant scientific evidence. This would be consistent with similar requests received from other regions for exemptions in purse seine fisheries on the basis of high survivability.

STECF emphasises that JR that are dealt with by plenary cannot receive the same amount of scrutiny and consistency check than those addressed in the dedicated EWG. STECF considers that JR should be submitted in time for the EWG.

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[1] - Information on STECF members' affiliations is displayed for information only. In any case, Members of the STECF shall act independently. In the context of the STECF work, the committee members do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members 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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REPORT TO THE STECF

EXPERT WORKING GROUP ON Evaluation of the landing obligation joint recommendations (EWG-17-03)

Brussels, Belgium, 6-9 June 2017

1 EXECUTIVE SUMMARY

EWG 17-03 reviewed the joint recommendations from Member States regional groups for the implementation of the landing obligation in 2018. Joint recommendations for discard plans have the purpose of providing the Commission with the agreement among Member States cooperating regionally on the elements for the preparation of Union law (Commission delegated act) in accordance with Article 15.6 of the Common Fisheries Policy. These elements are: definitions of fisheries and species; *de minimis* and high survivability exemptions; fixation of minimum conservation references sizes; additional technical measures to implement the landing obligation; and the documentation of catches. EWG 17-03 has reviewed the new or amended joint recommendations from the North Sea, Northwestern waters (NWW), Southwestern waters (SWW) Baltic Sea and Western Mediterranean.

General Observations

In reviewing the joint recommendations received, EWG 17-03 highlights a number of general observations. Some of these re-iterate those made in the previous 2014, 2015 and 2016 reports relating to the evaluation of joint recommendations. Several are new observations.

The role of EWG 17-03 and any future STECF EWGs set up to evaluate joint recommendations remains to evaluate the scientific rigour and robustness of the underpinning information supplied by Member States to support the main elements of joint recommendations. STECF cannot adjudicate on whether exemptions should be accepted or not.

EWG 17-03 re-iterates that it is difficult to provide conclusive advice on whether the information presented is sufficient to accept or reject any individual application based on the exemption provisions. The subjective nature of the conditionalities – "high survival", "very difficult to achieve" or "disproportionate costs" means that there is a large element of judgement required in deciding on whether to permit or reject a proposal that cannot be based solely on scientific option of the evidence presented.

EWG 17-03 notes that the quality of submissions to support the exemptions has improved since the first JR's were submitted in 2014. In particular EWG 17-03 recognises the progress made in the carrying out of survival experiments which in most case closely follow the recommendations made by STECF and also ICES. EWG 17-03 also acknowledges that by and large Member State Regional Groups have used the templates developed by STECF in 2016 to supply fisheries and fleet descriptors. However, EWG 17-03 points out that some of the exemptions submitted by the regional groups continue to be very much presented as ″national″ rather than regional exemptions. In many cases the information provided originates from one single Member State and while other Member States may be included frequently the information on the respective fleets are not provided. In developing future cases it would be better if exemptions were regionally focused and covering all relevant fleets. This would help the Commission avoid having to request additional information and clarifications from Member States on which fleets the exemptions should apply and also make it much easier for STECF to evaluate them.

EWG 17-03 reiterates that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 of the Common Fisheries Policy CFP) to fish at FMSY can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from FMSY based advice. If *de minimis* were operated as an addition to the FMSY-advised catch, then mortality rates would be predicted to exceed the FMSY 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 FMSY could be substantial. STECF 17-03 considers that the only relevant way is to apply the *de minimis* % to the total catch of the given species in the given fishery where the exemption is sought. This is not always the case in the exemptions submitted by the Member States regional group.

EWG 17-03 has identified areas where there are limitations in the information presented or the methodologies used and in some cases where there are inconsistences. In these cases further clarification may be required. Where evidence is presented and shows that for example increasing selectivity results in losses of marketable fish, then this is noted, but whether this constitutes a technical difficulty is not something that can be readily answered by the EWG. Inevitably, improvements in selectivity result in some degree of loss, and therefore some reduction in revenue. However, these should be viewed in the broader context of medium term gains in stocks

and in the absence of improvements in selectivity, would the fishery be worse of in comparison due to choke effects and utilization of quota for fish that have little or no value.

STECF has consistently proposed that the justification for *de minimis* exemptions is largely economic. However, EWG 17-03 acknowledges that providing detailed information for individual fisheries is challenging. Therefore it is apparent that STECF will only be able to consider the validity of the supporting information underpinning the exemptions provided and due to the lack of economic data in many cases will not be able to carry out any meaningful analysis of the economic impacts. If a deeper analysis is required by DGMARE, then, this needs to be discussed with the Member States and Advisory Councils so that they are clear what information should be provided and also with STECF to establish what they should evaluate. In this regard EWG 17-03 highlights the alternative option appraisal approach in *de minimis* submissions developed by EWG 16-06.

EWG 17-03 re-iterates that assessing what constitutes high survivability is problematic, which is made more complex by the limited information available and the high variability in the available survival estimates. What is clear is that there are a wide range of factors that can affect survival and these are likely to be the primary cause of the high variability observed across the various studies. However, identifying and quantifying these is difficult due to the relatively limited species specific information and differences between experiments including timing, season, gear handling, observation period. This means that passing judgment on the representativeness of individual or limited studies as an indicator of discard survival across an entire fishery is difficult given the range of factors that can influence survival and how they may vary in time even within a fishery.

EWG 17-03 notes that obliging fishermen to land catches of fish that would otherwise have survived the discarding process could, in some specific cases, result in negative consequences for the stock. This is because any surviving discarded fish contribute positively to the stock and landing those individuals therefore removes that benefit. Where discards are included in the stock assessment and a portion of which are known to survive, this in effect increases fishing mortality and changes in exploitation pattern which may lead to reductions in fishing opportunities to maintain fishing mortality levels consistent with management objectives (e.g. FMSY). Conversely, if they are not included in the assessment, then the mortality is higher than estimated, even if part of the discards survive, and in this case, bringing everything to land would provide better control of fishing mortality.

EWG 17-03 considers that avoidance of unwanted catch through improved selectivity or other means should be the primary focus implementing the landing obligation and should also consider the potential benefits for other stocks and the broader ecosystem that would arise from changes in exploitation patterns. Therefore, the choice of survival levels/value(s) in the context of article 15.2(b) will depend on which objective (e.g. avoidance of waste; improve stock sustainability; improve financial viability) is set as a priority. Nevertheless, provided the methodologies employed in carrying out survival experiments are appropriate and the limitations of the results are fully explored, EWG 17-03 considers that the decision to accept or reject an exemption proposal based on the survival value presented is largely one for managers.

EWG 17-03 notes that article 15.5(c)(ii) states that where continued discarding is permitted through the application of *de minimis* provisions, whilst these catches "shall not be counted against the relevant quotas; however, all such catches shall be fully recorded". EWG 17-03 re-iterates that no specific provisions have been included in the JR's to address this. In this regard EWG 17-03 stresses the need to improve the collection of catch documentation data. As highlighted in by STECF PLEN 17-01, there would appear a lack of "lack of reporting by vessel operators of fish discarded under exemptions, discards of fish currently not subject to the landing obligation and catches of fish below MCRS". The joint recommendations evaluated by EWG 17-03 would strongly benefit from containing provisions that strengthen data collection in this respect. As STECF PLEN 17-01 pointed out, innovative monitoring measures such as CCTV and Remote Electronic Monitoring (REM) have been applied only in pilot studies, but would be a more effective way to enforce the landing obligation if applied in a commercial setting (STECF EWG 13-23). If the data situation does not improve and the true quantities being caught as reported do not reflect the actual removals, they may have a significant impact on the quality of scientific advice for next year's fishing opportunities, as additional quota top-ups allocated in combination with continued discarding may also compromise the achievement of the MSY objective.

Evaluation of regional joint recommendations

EWG 17-03 has screened the fishery definitions included in the JRs for the North Sea, NWW and SWW, Baltic and Western Mediterranean for potential anomalies. Based on this analysis relatively few transboundary issues and inconsistencies where fisheries straddle different areas have been identified.

EWG 17-03 have also carried out an analysis of the progression in implementing the landing obligation. This analysis provides an overview of the percentage of TAC species from 2015 to 2018 now subject to the LO (partial or fully) compared to the percentage of TACs species not yet included. EWG 17-03 considers this to be a simplified indicator of progress so far with implementation of the landing obligation and of what is still left to fall under the landing obligation. It does not attempt to quantify landing obligation coverage in terms of actual catches, but focuses solely on the proportion of TACs. Based on this analysis currently there are 97 out of 174 stocks currently subject either fully or partially to the landing obligation (excluding the Mediterranean). To meet the target date for full implementation by 2019 will require 77 stocks to be brought under the landing obligation.

EWG 17-03 has evaluated the exemptions and other requested contained in the JR's submitted by the Regional Groups of Member States. The following is a summary of the main observations for each of these exemptions by region.

North Sea

De minimis	
Fishery	Main Findings of EWG 17-03
Fish bycaught in *Nephrops* targeted trawl fishery	Existing but NS regional group propose to include cod catches in the calculation of *de minimis* volume. There are no additional studies provided to support this exemption over and above what was presented in 2016. The only additional information is a re-calculation of the volumes with cod catches added. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. However, MS should be aware it will mean the eventual TAC will be much lower. A detailed description of the fleets and fisheries is provided
Common sole caught in gillnets and trammel nets	Existing provision and was therefore not evaluated by EWG 17-03
Common sole caught by beam trawls with a mesh size of 80-119mm with increased mesh sizes in the extension of the beam trawl	Existing provision but NS regional group requested inclusion of a definition of the Flemish panel as part of this exemption. Wording is provided which is useful although the suggested wording needs re-drafting to be clear.
Nephrops caught by bottom trawls with a mesh size of 80-99mm	Existing provision by NS regional group propose the level of *de minimis* from 6% to 2%. There are no issues with this exemption

Whiting and cod caught using bottom trawls < 100mm (TR2)	Existing provision with cod added. No additional supporting information is supplied and the exemption is based on the justification provided in 2016 for the French fleet. An additional Dutch Fleet has been included under the exemption but no information describing this fleet is provided. No information is also provided for justifying the inclusion of this fleet under the exemption With cod and whiting catches now combined for the *de minimis* there is a possibility that the volumes of *de minimis* requested could exceed the actual volume of cod discards particularly for the Dutch fleet. MS should be aware it will mean the eventual TAC will be much lower as the increased volumes of *de minimis* will need to be taken account of in the catch advice and deducted from the available fishing opportunities. Very little information on the economic impact of increasing selectivity and of sorting and handling catch is provided for either the French or Dutch fleets.
Whiting caught in bottom trawls ≥ 90mm in IIIa	New. A combination of previous studies and ongoing studies are used to justify the exemption based on difficulties in increasing selectivity. Limited economic data based on prices for whiting are provided for the fisheries involved. This data shows the handling costs exceed the selling price for the landings of all whiting. The 2% *de minimis* volume requested is higher than the current discard volume of whiting below MCRS so in effect the exemption encourages high-grading by allowing for the discarding of otherwise marketable whiting. This may also act as an incentive not to try to improve selectivity in the fishery any further. The request covers one fishery where there are no reported discards. The fisheries and fleets are well described.
Fish bycaught in Northern prawn trawl fishery with a sorting grid, with unblocked fish outlet	Existing but NS regional group propose to include cod catches in the calculation of *de minimis* volume. There are no additional studies provided to support this exemption over and above what was presented in 2016. The only additional information is a re-calculation of the volumes with cod catches added. Levels in the case of this exemption are

	quite low reflecting the relatively low discards of undersized fish in this fishery. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. A detailed description of the fleets and fisheries is provided.
Bycatch of plaice in fisheries caught in the *Nephrops* trawl fishery with a mesh size ≥ 80-99mm with a SEPNEP in ICES area IIa and IV	New. Detailed information is provided to support this exemption which is based on the use of a selective gear to reduce plaice discards. The case is well presented and the information provided is reasonable. It shows plaice discards can be reduced by up to 80% and the *de minimis* is requested to cover residual discards that cannot be released. A definition of the SEPNEP gear modification is provided in the JR which is useful. The definition would benefit from some re-drafting as it is not altogether clear.

High Survivability	
Fishery	Main Findings of EWG 17-03
Nephrops caught using pots	Existing provision and was therefore not evaluated by EWG 17-03
Nephrops caught with trawl gears in area IIIa	Existing provision and was therefore not evaluated by EWG 17-03
Nephrops caught with trawl gears with a Netgrid selectivity device in area IV	Existing. Delegated act required submission of additional scientific information supporting the exemption. No new studies have been completed although additional information relating to two of the factors known to affect discard survivability was provided; catch composition and environmental variables ambient air and water temperature on different *Nephrops* grounds. These studies increase the knowledge regarding the representativeness of the underpinning survival study for the current exemption. They show survival is unlikely to differ due to environmental conditions between the *Nephrops* grounds in the Farne deeps and Firth of Forth and Moray Firth but not whether differences in fisheries and catch compositions is likely to differ between the Farne deeps and these two areas. The information does not support a survival exemption in the whole of area IV at all times of the year.

	Fishery and fleet descriptions remain incomplete. No information on numbers of vessels, catch etc for *Nephrops* grounds outside the Farne Deeps is provided.
Common sole (undersized only) caught with trawl gears in area IVc	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional has been supplied including the results from new experiments which show no effect of seasonality on survival between trips in August and October. Information relating to the location of nursery areas as referred to in the Delegated Act is missing. These areas are not defined so impossible to monitor whether fishing is occurring outside such areas.
Fish bycatch in pots and fyke nets in area IIIa and IV	Exemption is intended to replace existing *de minimis* exemption included in the Delegated Act. No direct evidence is presented on the survival rates of the discarded species in the proposed fisheries. The exemption applies to pot fisheries targeting crustaceans but the evidence is based on the survival of discarded cod from pots used to target fish (consistently >75%). Increasing depth has a negative effect on the health of released cod. The exemption assumes that haddock, whiting, cod, plaice, sole, hake and saithe released from crab and lobster pots and *Nephrops* creels have the same survival chances as cod released from pots used to target fish. There is no direct evidence to support this but it is reasonable to infer that, at the point of release, and assuming environmental and technical operations are comparable, the likelihood of survival is high. The risk of substantial avian predation of discarded fish needs to be considered in such an exemption. Fleet and fishery descriptions are detailed for Sweden, less clear for UK, and there may be other countries associated with the proposed exemption that have not been described.

MCRS	
Fishery	Main Findings of EWG 17-03
Nephrops in the Skagerrak/Kattegat	Existing provision and was therefore not evaluated by EWG 17-03

Technical Measures	
Fishery	Main Findings of EWG 17-03
Technical rules in the Skagerrak and Kattegat	Existing provision and was therefore not evaluated by EWG 17-03
Definition of the Flemish panel	See above
Definition of the SEPNEP	See above

North Western Waters

De minimis	
Fishery	Main Findings of EWG 17-03
Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea	Existing provision and was therefore not evaluated by EWG 17-03
Common sole caught with beam trawls with a mesh size of 80-119mm with increased mesh sizes in the extension of the beam trawl	Existing provision and was therefore not evaluated by EWG 17-03. The definition for the Flemish panel proposed by the NS group should also be included in any new version of the NWW discard plan.
Nephrops caught with bottom trawls with a mesh size of 80-99mm in ICES subareas VI and VII	Existing provision and was therefore not evaluated by EWG 17-03
Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Channel	Existing provision and was therefore not evaluated by EWG 17-03
Whiting caught with bottom trawls and seines ≥100mm and pelagic trawls to catch whiting in the Celtic Sea and the Channel	Existing provision and was therefore not evaluated by EWG 17-03
Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Celtic Sea	Existing provision and was therefore not evaluated by EWG 17-03
Combined *de minimis* for species under the landing obligation for vessels using bottom trawls >80mm in the Celtic Sea and the English Channel	Not part of JR but EWG asked to consider a standalone proposal. No new information is presented to support the proposal and justification is based on previous experiments used to support existing *de minimis* exemptions for whiting in the Celtic Sea and Channel. Combining catches to calculate *de minimis* increases the volume of *de minimis* available. Provided this is taken into account in setting catch advice then this in itself is not a problem. However, MS should be aware it will mean the eventual TAC will be much lower. Combining catches effectively means the volume of *de minimis* for any individual species can be in excess of 5%.

High Survivability	
Fishery	Main Findings of EWG 17-03
Nephrops caught with Pots, Traps or Creels in ICES subareas VI and VII	Existing provision and was therefore not evaluated by EWG 17-03
Common sole (undersized only) caught with trawl gears in area VIId	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional has been supplied including the results from new experiments which show no effect of seasonality on survival between trips in August and October. Information relating to the location of nursery areas as referred to in the Delegated Act is missing. These areas are not defined so impossible to monitor whether fishing is occurring outside such areas

South Western Waters

De minimis	
Fishery	Main Findings of EWG 17-03
Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea	Existing provision and was therefore not evaluated by EWG 17-03
Common sole caught with beam trawls and bottom trawls in directed fishery in ICES subareas VIIIa,b	Existing provision and was therefore not evaluated by EWG 17-03
Hake caught with trawls in directed fisheries in ICES subareas VIII and IX	Existing. Delegated act required submission of additional discard data and scientific information supporting the exemption. The results from a number of additional selectivity studies have been provided. These experiments have largely been carried out in the fisheries with the highest discard rates (and smallest mesh sizes) and show increasing selectivity does lead to losses of commercial catch. Selectivity experiments are backed up by very limited information on the economic impact of increasing selectivity and of sorting and handling catch is provided as part of the justification. Descriptions of the fleets and fisheries are still incomplete and it remains difficult to understand exactly which fleets are involved. For instance the French fleet in Area VIII is not included. There is also a contradiction in that the exemption as

	described in the Delegated Act applies to fleets targeting hake yet the justification includes a number of mixed fisheries where hake is an important bycatch.

High Survivability	
Fishery	Main Findings of EWG 17-03
Nephrops caught with trawls in ICES subareas VIII and IX	Existing. Delegated act required submission of additional scientific information supporting the exemption. Additional studies have been completed and have largely addressed the issues raised by STECF in 2016 regarding the duration of the original experiments. The fleet descriptions provided are detailed for French and Portuguese fleets but there are other relevant fleets, notably Spanish, for which no information has been provided.

MCRS	
Fishery	Main Findings of EWG 17-03
Horse mackerel in ICES VIIIc and IXa	Existing provision and was therefore not evaluated by EWG 17-03

Baltic Sea

High Survivability	
Fishery	Main Findings of EWG 17-03
Cod, plaice and salmon caught with trap-nets, creels/pots, fyke-nets and pound net	Existing exemption extended to include plaice. Fleet and fishery descriptions are incomplete. Reference only to 4 German vessels but EWG aware that many other countries participate in these fisheries. Supporting study is rather limited and more detailed information would be useful to assess the representativeness and quality of the discard survival estimate attained. However, the fishing gears used are relatively benign and all available information indicates mortality of discarded fish is likely to be low in such fisheries.

MCRS	
Fishery	Main Findings of EWG 17-03
Baltic Cod	Existing provision and was therefore not evaluated by EWG 17-03

Technical Measures	
Fishery	Main Findings of EWG 17-03
Modifications to T90 codend	New. Proposal to derogate from existing technical measures regulations allowing the use of a modified T90 codend. Results from a series of catch comparison experiments provided which show the modified codend to provide positive benefits in terms of reducing unwanted catches of cod below mcrs. New codend has a smaller mesh size, larger number of meshes in the codend circumference and is longer. Two of these intuitively would be expected to decrease selectivity. Therefore if the derogation to allow the use of this modified gear is granted then it should be conditional on further experimentation to demonstrate that the presented results are correct.

Mediterranean

De minimis	
Fishery	Main Findings of EWG 17-03
Hake and red mullet by vessels using trawl nets in the Western Mediterranean	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet by vessels using gillnets in the Western Mediterranean	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet using trawls in the Adriatic	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet using gillnets in the Adriatic	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet using rapido (beam trawls) in the Adriatic	Existing provision and was therefore not evaluated by EWG 17-03
Common sole using trawl nets in the Adriatic	Existing provision and was therefore not evaluated by EWG 17-03
Common sole using gillnets in the Adriatic	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet by vessels using trawl nets in the south-eastern Mediterranean	Existing provision and was therefore not evaluated by EWG 17-03
Hake and red mullet by vessels using gillnets in the south eastern Mediterranean	Existing provision and was therefore not evaluated by EWG 17-03
Deep-water rose shrimp in the south eastern Mediterranean	Existing provision and was therefore not evaluated by EWG 17-03

High Survivability	
Fishery	Main Findings of EWG 17-03

Common sole) caught with rapido (beam trawl in GSAs 17 and 18	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Scallop caught with mechanised dredges in GSAs 1, 2, 5 and 6;	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Carpet clams caught with mechanised dredges in GSAs 1, 2, 5 and 6	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Venus shells caught with mechanised dredges in GSAs 1, 2, 5 and 6	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.
Norway lobster caught by bottom trawls in GSA 1, 2, 5, 6, 7, 8, 9, 10, 11.1, 11.2, 12	New. The results indicate high survivability in winter but much lower survivability (~20%) in summer months. On this basis exemption if granted should be restricted to winter months only. Sorting times were short in the provided study and additional studies are needed to improve the knowledge the effect of sorting time. No information is supplied on the fleets and fisheries to which this exemption should apply.

Black Sea

High Survivability	
Fishery	Main Findings of EWG 17-03
Turbot in bottom set gillnets	Existing. Delegated act required submission of additional discard data and any other relevant scientific information supporting the exemption. No information provided to EWG 17-03 so no analysis carried out.

Pelagic Plans

De minimis	
Fishery	Main Findings of EWG 17-03
Artisanal pelagic trawl fisheries using OTM and PTM in ICES sea area IV b,c and VIId	Existing. Extension of existing exemptions contained in the North Sea and NWW discard plans to include PTM gear. The transition from the current discard rate to the 1% (*de minimis* level) will be challenging without significant changes of fishing pattern, either by improvements in selectivity or by avoiding areas of higher unwanted catch. This provides an incentive for the fleets involved to adapt their behaviour and continue research on ways to improve selectivity and is a reasonable justification to retain the exemption.

High survivability	
Fishery	Main Findings of EWG 17-03
Mackerel and Herring in the ring net fishery in ICES areas VIIe and VIIf	New exemption for 2019 but previously assessed by STECF in 2015. The basis for the exemption is similar to other exemptions included under the existing *de minimis* plans and there are certain similarities between the fisheries.

Technical measures	
Fishery	Main Findings of EWG 17-03
Sprat fisheries in the North Sea	New derogation. There currently is only limited evidence to support this derogation to remove the sprat box. Given the fact that the supporting study for this derogation request only covered two years further research would be useful in evaluating the validity of the conclusions reached by ICES.

2 INTRODUCTION

2.1 Background

Joint recommendations for discard plans have the purpose to provide the Commission with the agreement among Member States cooperating at sea-basin level on the elements for the preparation of Union law (Commission delegated Act) in accordance with Article 15.6 of the CFP Regulation. The six potential elements that can be contained in a discard plan are the following:

- definitions of fisheries and species;
- provisions for survivability exemptions;
- provisions on *de minimis* exemptions;
- the fixation of minimum conservation reference sizes;

- additional technical measures needed to implement the landing obligation; and
- the documentation of catches.

To date STECF have evaluated three sets of joint recommendations:

- In 2014 - Discard plans for pelagic species in all sea basins including the Mediterranean and cod and salmon in the Baltic Sea[1];
- In 2015 - Discard plans for demersal species in the NWW, SWW and the North Sea[2]
- In 2016 – Revised discard plans for demersal species in the NWW, SWW and the North Sea and also discard plans for demersal species in the Mediterranean and the Black Sea[3]

In addition 6 STECF Expert Working Groups (EWG)[4] have been convened. These have consider various aspects of the landing obligation and provided guidance to Member States and the Advisory Councils on the types of underpinning evidence that should be supplied to support the different elements of discard plans.

EWG 17-03 was convened to review the joint recommendations from the Member States regional groups for the implementation of the landing obligation in 2018.

2.2 Terms of reference

Based on the previous evaluations, STCF EWG 17-03 is requested to:

1. Screen any changes in the defined fisheries to be subject to the landing obligation in 2018 for potential anomalies which may create difficulties for managers and fishermen.
2. Review the supporting documentation underpinning exemptions on the basis of high survivability in respect of:
    - Exemptions agreed for 2017 on the basis of high survivability where there was a requirement for further information to be supplied.
    - New exemptions based on high survivability. In data poor situations, assess what further supporting information may be available and how this be supplied in the future (e.g. survival studies, tagging experiments).
3. Review the supporting documentation (biological, technical and/or economic) for *de minimis* exemptions on the basis that either increasing selectivity is very difficult to achieve, or to avoid handling unwanted catches would create disproportionate cost in respect of:
    - *De minimis* exemptions agreed for 2017 where there was a requirement for further information to be supplied.
    - New *de minimis* exemptions. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. discard data collection, selectivity studies).
4. Review whether there is sufficient information to support proposed minimum conservation reference size(s) that deviate from existing minimum landing sizes, and whether they are consistent with the objective of ensuring the protection of juveniles.
5. Review the supporting documentation provided for technical measures aimed at increasing gear selectivity for reducing or, as far as possible, eliminating unwanted catches.
6. Where Joint recommendations have not been put forward by the Member States for relevant sea basins, STECF will need to provide input on the preparation of discard plans.

[1] STECF PLEN-14-02
[2] STECF-15-10 2015
[3] STECF-16-10
[4] STECF 13-23, STECF 14-01, STECF 14-06, STECF 14-19, STECF 15-14, STECF 15-10

In addition EWG 17-03 was asked to evaluate additional requests on the following:

- A *de minimis* request for combined species under the landing obligation for vessels using bottom trawls > 80mm in the Celtic Sea and the English Channel (NWW)
- Additional scientific information provided by France, supporting the survivability exemption from the landing obligation for Norway lobster provided caught in the Bay of Biscay by bottom trawling (SWW).

These requests have been dealt with as part of the overall evaluation of the JR's and the observations of EWG 17-03 are included under the relevant sections of the report

2.3 Main elements of discard plans to be considered by STECF

Based on the terms of reference, EWG 17-03 adopted the following approach in considering the elements of discard plans.

Definition of Fisheries

Previously STECF have commented in only a limited way on the definition of fisheries included in the different joint recommendations or on the timetable for inclusion of the different demersal fisheries that were brought under the landing obligation. The timetables for inclusion have been discussed and agreed by the regional groups of Member States and the Advisory Councils with the Commission prior to submission of the joint recommendations and so there is no need for STECF to comment further on these.

EWG 17-03 understands that adjustments made to the fisheries to be covered and additional fisheries to be added in 2018 to the demersal discard plans have been subject to the same level of discussion leading to agreement between the Commission and the Member States. Therefore EWG 17-03 has screened the fishery definitions included in the Joint Recommendations for potential anomalies which may create difficulties for managers and fishermen without carrying out any detailed evaluation.

In addition, in order to help Member States plan for the inclusion of all species under the landing obligation from 1 January 2019, EWG 17-03 carried out an analysis of the current status of stocks and fisheries covered under the landing obligation and those that need to be included in 2018.

De minimis, High Survivability and MCRS

The main elements that EWG 17-03 have evaluated are additional exemptions for *de minimis* or exemptions on the basis of high survivability.

In addition to any new elements, EWG 17-03 has also reviewed additional information supplied to support several of the exemptions granted for 2017 but, on which, the Commission has requested additional information from Member States concerned to allow STECF carried out a further assessment of these particular exemptions. By region the exemptions concerned are:

North Western Waters (Commission Delegated Regulation (EU) 2016/2375)

1. High survivability exemption for common sole (*Solea solea*) below the minimum conservation reference size caught with otter trawl gears with codend mesh size of 80-99 mm in ICES division VIId within six nautical miles of the coast.

South Western Waters (Commission Delegated Regulation (EU) 2016/2374)

1. High survivability exemption for Norway lobster (*Nephrops norvegicus*) caught in ICES subareas VIII and IX with trawls
2. The *de minimis* exemption for hake by vessels targeting this species in ICES subareas VIII and IX with trawls.

North Sea (Commission Delegated Regulation (EU) 2016/2550)

1. High survivability exemption for Norway lobster (*Nephrops norvegicus*)caught in ICES Division IV with bottom trawls with a mesh size of at least 80 mm equipped with a netgrid selectivity device.
2. High survivability exemption for common sole (Solea solea) below the minimum conservation reference size caught with otter trawl gears with codend mesh size of 80-99 mm in ICES ICES area Ivc within six nautical miles of the coast.

Mediterranean (Commission Delegated Regulation (EU) 2017/86)

1. High survivability exemptions for the following:
    a. common sole (*Solea solea*) caught with rapido (beam trawl), (TBB) (1) in GSAs 17 and 18;
    b. scallop (*Pecten jacobeus*) caught with mechanised dredges (HMD) in GSAs 1, 2, 5 and 6;
    c. carpet clams (*Venerupis* spp.) caught with mechanised dredges (HMD) in GSAs 1, 2, 5 and 6;
    d. Venus shells (*Venus* spp.) caught with mechanised dredges (HMD) in GSAs 1, 2, 5 and 6.

Black Sea (Commission Delegated regulation (EU) 2017/87)

1. High survivability exemption for turbot (*Psetta maxima*) caught with bottom-set gillnets (GNS) in the Black Sea.

MCRS

EWG 17-03 notes that no proposals for changes to MCRS have been proposed by any of the Member States regional groups for 2018.

Technical Measures

Regulation (EU) 2015/812 introduced an amendment to the CFP Basic Regulation to expressly allow discard plans to include technical measures. Such measures should be strictly linked to the implementation of the landing obligation and aim to increase selectivity and reduce unwanted catches.

EWG 17-03 has been requested to evaluate a proposal from the BALTFISH group to allow for the modified codend for T90 to be used by way of derogation from the current legal requirements contained in Regulation (EC) 2187/2005. In addition on the basis of the Joint Recommendations submitted by the North Sea Regional group, EWG 17-03 has been asked to review the definitions associated with two specific selective gears.

Documentation of catches

EWG 17-03 has commented only very briefly on the documentation of catches given that none of the regional groups have provided any concrete measures that could be evaluated.

3 GENERAL OBSERVATIONS

EWG 17-03 highlights a number of general observations. Some of these re-iterate those made in the previous 2014, 2015 and 2016 reports relating to the evaluation of joint recommendations. Several are new observations.

1 The role of EWG 17-03 and any future STECF EWGs set up to evaluate joint recommendations remains to evaluate the scientific rigour and robustness of the underpinning information supplied by Member States to support the main elements of joint recommendations. STECF cannot adjudicate on whether exemptions should be accepted or not.

2 EWG 17-03 re-iterates that it is difficult to provide conclusive advice on whether the information presented is sufficient to accept or reject any individual application based on the exemption provisions. The subjective nature of the conditionalities – "high survival", "very difficult to achieve" or "disproportionate costs" means that there is a large element of judgement required in deciding on whether to permit or reject a proposal that cannot be based solely on scientific option of the evidence presented.

3 EWG 17-03 notes that the quality of submissions to support the exemptions has improved since the first JR's were submitted in 2014. In particular EWG 17-03 recognises the progress made in the carrying out of survival experiments which in most case closely follow the recommendations made by STECF and also ICES. EWG 17-03 also acknowledges that by and large Member State Regional Groups have used the templates developed by STECF in 2016 to supply fisheries and fleet descriptors. However, EWG 17-03 points out that some of the exemptions submitted by the regional groups continue to be very much presented as ″national″ rather than regional exemptions. In many cases the information

provided originates from one single Member State and while other Member States may be included frequently the information on the respective fleets are not provided. In developing future cases it would be better if exemptions were regionally focused and covering all relevant fleets. This would help the Commission avoid having to request additional information and clarifications from Member States on which fleets the exemptions should apply and also make it much easier for STECF to evaluate them.

4 EWG 17-03 reiterates that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 of the Common Fisheries Policy CFP) to fish at FMSY can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from FMSY based advice. If *de minimis* were operated as an addition to the FMSY-advised catch, then mortality rates would be predicted to exceed the FMSY 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 FMSY could be substantial. STECF 17-03 considers that the only relevant way is to apply the *de minimis* % to the total catch of the given species in the given fishery where the exemption is sought. This is not always the case in the exemptions submitted by the Member States regional group.

5 EWG 17-03 has identified areas where there are limitations in the information presented or the methodologies used and in some cases where there are inconsistences. In these cases further clarification may be required. Where evidence is presented and shows that for example increasing selectivity results in losses of marketable fish, then this is noted, but whether this constitutes a technical difficulty is not something that can be readily answered by the EWG. Inevitably, improvements in selectivity result in some degree of loss, and therefore some reduction in revenue. However, these should be viewed in the broader context of medium term gains in stocks and in the absence of improvements in selectivity, would the fishery be worse of in comparison due to choke effects and utilization of quota for fish that have little or no value.

6 STECF has consistently proposed that the justification for *de minimis* exemptions is largely economic. However, EWG 17-03 acknowledges that providing detailed information for individual fisheries is challenging. Therefore it is apparent that STECF will only be able to consider the validity of the supporting information underpinning the exemptions provided and due to the lack of economic data in many cases will not be able to carry out any meaningful analysis of the economic impacts. If a deeper analysis is required by DGMARE, then, this needs to be discussed with the Member States and Advisory Councils so that they are clear what information should be provided and also with STECF to establish what they should evaluate. In this regard EWG 17-03 highlights the alternative option appraisal approach in *de minimis* submissions developed by EWG 16-10.

7 EWG 17-03 re-iterates that assessing what constitutes high survivability is problematic, which is made more complex by the limited information available and the high variability in the available survival estimates. What is clear is that there are a wide range of factors that can affect survival and these are likely to be the primary cause of the high variability observed across the various studies. However, identifying and quantifying these is difficult due to the relatively limited species specific information and differences between experiments including timing, season, gear handling, observation period. This means that passing judgment on the representativeness of individual or limited studies as an indicator of discard survival across an entire fishery is difficult given the range of factors that can influence survival and how they may vary in time even within a fishery.

8 EWG 17-03 notes that obliging fishermen to land catches of fish that would otherwise have survived the discarding process could, in some specific cases, result in negative consequences for the stock. This is because any surviving discarded fish contribute positively to the stock and landing those individuals therefore removes that benefit. Where discards are included in the stock assessment and a portion of which are known to survive, this in effect increases fishing mortality and changes in exploitation pattern which may lead to reductions in fishing opportunities to maintain fishing mortality levels consistent with management objectives (e.g. FMSY). Conversely, if they are not included in the assessment, then the mortality is higher than estimated, even if part of the discards survive, and in this case, bringing everything to land would provide better control of fishing mortality.

9 EWG 17-03 considers that avoidance of unwanted catch through improved selectivity or other means should be the primary focus implementing the landing obligation and should also consider the potential benefits for other stocks and the broader ecosystem that would arise from changes in exploitation patterns. Therefore, the choice of survival levels/value(s) in the context of article 15.2(b) will depend on which objective (e.g. avoidance of waste; improve stock sustainability; improve financial viability) is set as a priority. Nevertheless, provided the methodologies employed in carrying out survival experiments are appropriate and the limitations of the results are fully explored, EWG 17-03 considers that the decision to accept or reject an exemption proposal based on the survival value presented is largely one for managers.

10 EWG 17-03 notes that article 15.5(c)(ii) states that where continued discarding is permitted through the application of *de minimis* provisions, whilst these catches "shall not be counted against the relevant quotas; however, all such catches shall be fully recorded". EWG 17-03 re-iterates that no specific provisions have been included in the JR's to address this. In this regard EWG 17-03 stresses the need to improve the collection of catch documentation data.

11 As highlighted by STECF PLEN 17-01, there would appear a lack of "lack of reporting by vessel operators of fish discarded under exemptions, discards of fish currently not subject to the landing obligation and catches of fish below MCRS". The joint recommendations evaluated by EWG 17-03 would strongly benefit from containing provisions that strengthen data collection in this respect. As STECF PLEN 17-01 pointed out, innovative monitoring measures such as CCTV and Remote Electronic Monitoring (REM) have been applied only in pilot studies, but would be a more effective way to enforce the landing obligation if applied in a commercial setting (STECF EWG 13-23). If the data situation does not improve and the true quantities being caught as reported do not reflect the actual removals, they may have a significant impact on the quality of scientific advice for next year's fishing opportunities, as additional quota top-ups allocated in combination with continued discarding may also compromise the achievement of the MSY objective.

4 PROGRESSION IN IMPLEMENTATION OF THE LANDING OBLIGATION

EWG 17-03 have carried out an analysis of the progression in implementing the landing obligation. This analysis provides an overview of the percentage of TAC species from 2015 to 2018 now subject to the LO (partial or fully) compared to the percentage of TACs species not yet included. EWG 17-03 considers this to be a simplified indicator of progress so far with implementation of the landing obligation and of what is still left to fall under the landing obligation. It does not attempt to quantify landing obligation coverage in terms of actual catches, but focuses solely on the proportion of TACs.

The following assumptions are made:

- The underlying data for the table are the Fishing Opportunities Regulations for the NE Atlantic fishing opportunities (includes a number of RFMO's), the Baltic and the deep sea species. The Mediterranean stocks are not included in this analysis given it relates to TAC species.
- TACs covering more than one area have been incorporated into a single category (e.g. TAC for mackerel covers a wide area) to avoid double-counting TACs in multiple sea basins.
- TACs which have been removed from the TAC and quota Regulations, those that were not yet included in the TAC Regulation in any given year and TACs solely referring to as in third country's waters and therefore not subject to the landing obligation are excluded from the analysis.
- Where the fisheries definitions included in the discard plans contain limitations/ specifications (such as gear type, mesh size, catch composition threshold), the relevant TACs are considered as partially subject to the LO. This is because it is not clear based on the discard plans / JRs whether there are other fleet segments outside of the definitions specified in the discard plans which also have catches under these TACs and which are not yet subject to the LO. In order to conclude whether such TACs are fully or only partially subject to the LO, additional information would be needed on which fisheries (apart from the ones defined in the discard plans) have catches falling under these TACs.

Results

Based on the analysis completed, table 4.1 and figure 4.2 show the progression in implementing the landing obligation, across TAC species in Union waters and non-Union waters (excluding the Mediterranean). Currently there are 97 out of 174 stocks currently subject either fully or partially to the landing obligation. To meet the target date for full implementation will require 77 stocks to be brought under the landing obligation.

Table 4.1 Summary of no. of TACs subject to the LO since 2015

Year	Total Number of TAC species	Number not under LO	Number partially under LO	Number fully under LO
2015	176	130	8	38
2016	179	100	27	52
2017	174	82	34	58
2018*	174	77	36	61

* Based on 2018 Joint Recommendations

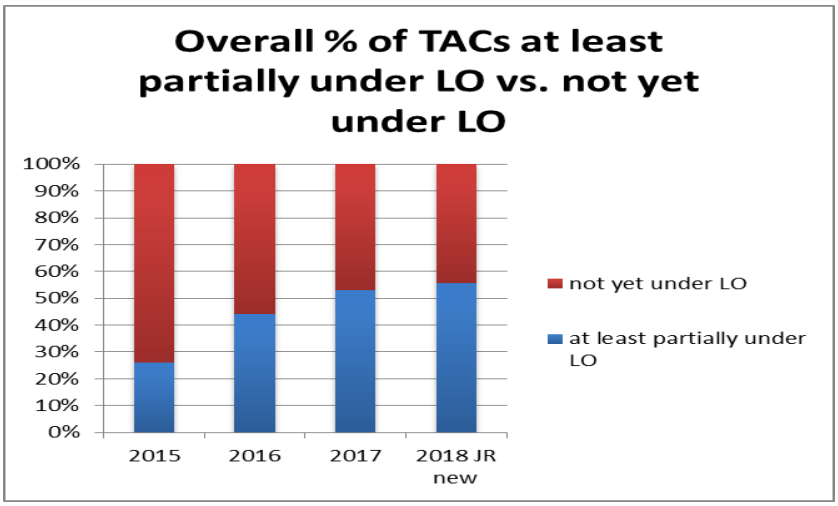

Figure 4.2 Overall % of TACS Partially or Fully Subject to the Landing Obligation versus Number of TACs Not Yet Subject to the Landing Obligation

Taking this by region, it shows all stocks in the Baltic are now subject to the landing obligation. In the other three sea basins – North Sea, NWW and SWW - progress varies between 74% in the North Sea to around 50% in the NWW. For the TACs which straddle two or more regions around 50% of stocks are now covered. In non-Union waters only the Highly Migratory species are subject to the landing obligation. It is understood that other TAC species in non-Union waters will be subject to the landing obligation in 2018 but no details were available to EWG 17-03 on the number of stocks affected. Figure 4.3 shows the progression by sea basin.

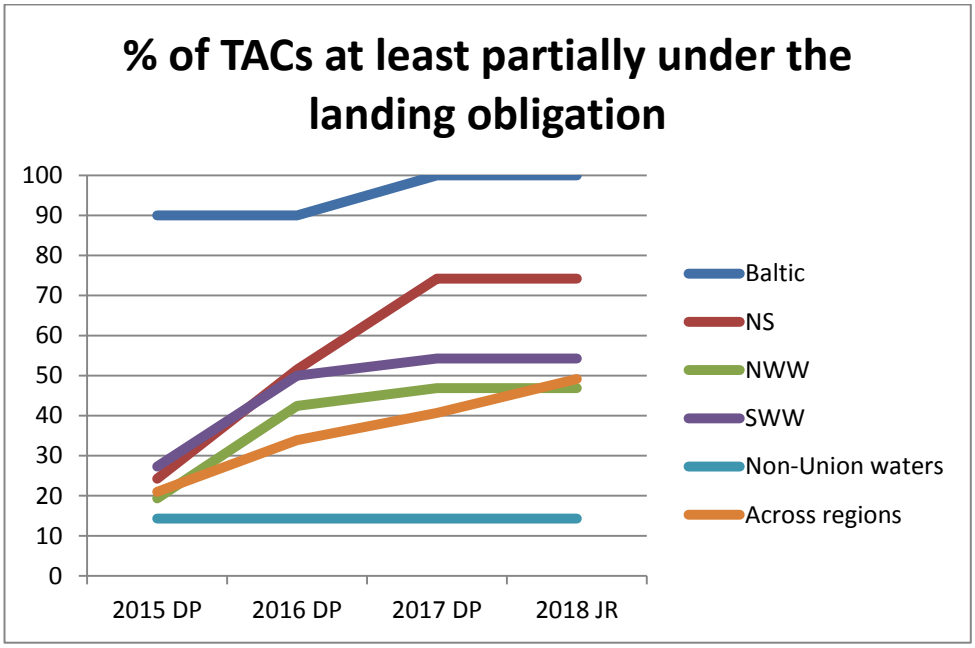

Figure 4.3 Percentage of TACS Partially or fully subject to the landing obligation by sea basin and by year

5 Evaluation of Regional Draft Joint Recommendations

5.1 Definition of Fisheries

EWG 17-03 was asked by the Commission to comment on the definition of fisheries included in the different JRs or on the timetable for inclusion of the different fisheries (ToR a). The EWG understands these have been discussed at length by the regional groups and the Advisory Councils with the Commission. While only quite limited changes have been made in the JRs, EWG 17-03 has screened the fishery definitions included in the JRs for potential anomalies. Several trans-boundary issues where fisheries straddle different areas or there are inconsistencies between the approaches taken in the different sea basins have been identified:

- As pointed out by EWGs 15-10 and 16-06, directed fisheries for saithe straddle the Northern North Sea and the West of Scotland but are only covered in the JR for the North Sea. This has now been partially addressed in the JR's for 2018 with the inclusion of saithe in the NWW plan.
- As for 2017, hake caught in gillnet, longline and trawl fisheries (subject to a catch threshold) in Areas VI and VII are covered under the landing obligation in NWW but only hake caught in longline fisheries in Area IV are covered in the North Sea plan. ICES assess this as a single stock that straddles both regions.
- Cod and whiting are included in the North Sea in the North Sea but remain outside the landing obligation in Area VIa. Vessels frequently fish in both areas during individual fishing trips.
- Black scabbard, blue ling and grenadiers are included under the landing obligation for NWW (subject to a catch threshold) but not in the North Sea.
- Anglerfish caught with gillnets have been included under the SWW but are still not subject to the landing obligation in NWW. EWG 17-03 notes that trawlers and gillnet vessels quite often have catches of anglerfish from both regions in one trip.
- In the NWW beam trawl fisheries in the Irish Sea are still not included but are under the landing obligation in the rest of Area VII.
- As pointed out by previous EWGs if a vessel fishes for hake in both NWW waters and SWW waters in a fishing trip then it is subject to different catch thresholds.

- Vessels fishing in the Celtic Sea and Irish Sea on the same fishing trip will still be subject to different provisions. (Haddock in VIIa, Whiting in VIIb-k, Sole in the Celtic Sea but not in the Irish Sea or West of Scotland).
- The definition of the Western Mediterranean in the JR's for the Mediterranean include a new GSA (12; Tunisia) compared to the previous JR (2016).
- There is a mismatch in the Commission Delegated Regulation (EU) 2017/87 that sets out the discard plan for certain demersal stocks in the Mediterranean, given that Article 4-a-ii only refers to gillnets, while in the Annex Table is shown for both gillnet and trammel net.

5.2 STRUCTURE OF ADVICE – *DE MINIMIS* AND SURVIVABILITY EXEMPTIONS

In assessing each of the *de minimis* and high survivability exemptions requested, EWG 17-03 have based their evaluation on two elements:

1. Is the exemption well circumscribed in terms of the fisheries involved, the number of vessels, indicative discard rates and in the case of *de minimis* exemptions, estimated volumes of *de minimis* requested?
2. Is the exemption underpinned by robust scientific information that justifies the exemption?

EWG 16-06 provided a template for provision of information relating to the fisheries for *de minimis* exemptions and for survivability exemptions. EWG 17-03 notes that by and large Member States have used these templates in their JRs. For information these templates are included in Annex 1.

On the second element, regarding the underpinning information EWG 17-03 has based their observations on the three previous evaluations of the JRs. In addition in the case of high survivability an evaluation of the discard survival study reports was achieved through a critical review. This was based on the practical guidance developed by ICES Workshop on Methods for Estimating Discard Survival (WKMEDS) on how to conduct discard survival assessments from which a bespoke critical review framework was developed for discard survival research. The review consists of a series of 'Yes/No' phrased questions. Positive responses ('Y') meant that the guidance was followed, and negative responses ('N') were given when it was not followed, or there was no evidence that it was followed. The most important criteria are captured in five 'key guidance questions', which are considered the most useful in assessing the quality of the study, both in terms of how robust the estimate is and how representative the derived discard estimates are of the defined fishery. The template used is shown in Annex 2. There are more details on the critical review process available in the ICES WKMED meeting reports (ICES, 2016).

6. NORTH SEA - OVERVIEW OF JOINT RECOMMENDATIONS

Commission Delegated Regulation (EU) 2015/2440 established a discard plan for certain demersal fisheries in the North Sea and in Union waters of ICES Division IIa. This discard plan was valid until 31 December 2016. On the basis of a new set of Joint Recommendations for the North Sea submitted by the regional group of Member States this plan was updated by Commission Delegated Regulation (EU) 2016/2550. In 2017, a further set of Joint Recommendations has been submitted by the Member States. The main elements of these JR's and which of these have been assessed by EWG 17-03 are summarised in table 6.1.

Table 6.1 Main elements of the Joint Recommendations submitted for the North Sea

Elements	Status	Section
De minimis		
Whiting caught in bottom trawls ≥ 90mm in IIIa	New	6.1.1
Bycatch of plaice in fisheries caught in the *Nephrops* trawl fishery with a mesh size ≥ 80-99mm with a SEPNEP in ICES area IIa and IV	New	6.1.2
Whiting and cod caught using	Existing but amended	6.1.3

bottom trawls < 100mm (TR2)		
Fish bycaught in Northern prawn trawl fishery with a sorting grid, with unblocked fish outlet	Existing but amended	6.1.4
Fish bycaught in *Nephrops* targeted trawl fishery	Existing but amended	6.1.5
Nephrops caught by bottom trawls with a mesh size of 80-99mm	Existing but amended	6.1.7
Common sole caught in gillnets and trammel nets	Existing and unchanged	Not assessed
Common sole caught by beam trawls with a mesh size of 80-119mm with increased mesh sizes in the extension of the beam trawl	Existing and unchanged (see technical measures)	Not assessed
High Survivability		
Fish bycatch in pots and fyke nets in area IIIa and IV	New (replaces previous *de minimis* exemption)	6.2.1
Nephrops caught with trawl gears with a Netgrid selectivity device in area IV	Existing but re-assessed on basis of new information	6.2.2
Common sole (undersized only) caught with trawl gears in area IVc	Existing but re-assessed on basis of new information	6.2.3
Nephrops caught using pots	Existing and unchanged	Not assessed
Nephrops caught with trawl gears in area IIIa	Existing and unchanged	Not assessed
Minimum conservation reference size		
Nephrops in the Skagerrak/Kattegat	Existing and unchanged	Not assessed
Technical Conservation Measures		
Definition of the SEPNEP	New	6.1.2
Definition of the Belgium/Flemish panel	New	6.1.6
Technical rules in the Skagerrak and Kattegat	Existing and unchanged	Not assessed

6.1 North Sea – Proposals for *de minimis* exemptions

A summary of the *de minimis* applications are given in Table 6.1.1.

Table 6.1.1 Summary of *de minimis* exemptions submitted as part of the North Sea Joint Recommendations (restricted to new or re-assessed exemptions)

Country	***Exemption applied for (species, area, gear type)****	***Species as bycatch or target***	***Number of vessels subject to LO***	***Landings (by vessels subject to the LO)***	***Estimated discards*(tonnes)***	***Estimated catch (tonnes)***	***Discard rate***	***Estimated de minimis volumes (tonnes)***
DK, SE, DK	Whiting caught in bottom trawls 90-119 mm with SELTRA panels an bottom trawls with a mesh size of 120 mm	Bycatch	250 (DK trawls 90-119mm with SELTRA panels)	57t	634t	690t	91,7%	127t
			76 (SE trawls and seines > 90mm)	23t	106t	129t	82.1%	41t

	and above in the Skagerrak and the Kattegat (ICES Area IIIa)		250 (DK trawls ≥120mm)	~10t	0	~10t	0%	68t
NL	Bycatch of plaice in fisheries caught in the *Nephrops* trawl fishery with a mesh size ≥ 80-99 mm with a SEPNEP in ICES area IIA and IV	Bycatch	20	Total landings of 4,538 t of which plaice makes up 1,681t	317t (reduced with SepNep: 63t)**	1,998t	16%	63t
FR (mixed fishery)* & NL[5]	Whiting and cod caught by bottom trawls 79-99 mm (TR2) in the North Sea (ICES areas IVa, IVb and c)	target and by-catch	120 (FR vessels)	Total landings 1976.7 t	814.3 t	2791 t	29%	167t of which max 56t of cod (2%) & max 167t of whiting
			45** (NL vessels)	Total of 8.2 t of which Cod 581.323 kg & whiting 737.397 kg	Cod 3.2 t & Whiting 462 kg		Cod 0.5% & Whiting 38%	Cod 11.690 kg (2%) Whiting 72 t (6%) or 47t (4%)

6.1.1 Whiting caught in bottom trawls 90-119 mm with SELTRA panels an bottom trawls with a mesh size of 120 mm and above in the Skagerrak and the Kattegat (ICES Area IIIa)

Background

The JR of the Scheveningen group includes a request for a new *de minimis* exemption relating to catches of whiting (*Merlangius merlangus*) under MCRS. The exemption requests that in 2018 whiting up to a maximum of 2% of the total annual catches of *Nephrops*, cod, haddock, whiting, saithe, common sole, plaice and hake in the mixed *Nephrops* and fish fishery conducted with bottom trawls with a mesh size of 90-119 mm equipped with a square mesh panel of at least 140 mm or a diamond mesh panel of at least 270 mm ("Seltra") and bottom trawls with a mesh size of at least 120 mm may be discarded. This exemption would apply in the Skagerrak and Kattegat (ICES Division IIIa).

The request for an exemption for *de minimis* is based on article 15.5.c.i) and ii), due to difficulties to improve selectivity in a short term period and disproportionate costs of handling the catches of whiting, in particular significantly additional labour costs for catch sorting, that a full landing obligation would imply on this fishery.

Basis for exemption

[5] Source: Wageningen Marine Research, discard monitoring demersal fisheries 2016

This *de minimis* exemption relates to TR1 and TR2 fisheries in the Skagerrak and the Kattegat which are likely to catch and discard whiting. The supporting documentation (Annex F of the JR) refers to three separate fisheries as follows:

1. Danish trawls 90-119 mm with SELTRA panels
2. Swedish trawls and seines >90 mm (TR1/TR2)
3. Danish trawls ≥120 mm

The total annual Danish catches of whiting by vessels using the SELTRA trawl is estimated at 359 tonnes in the Skagerrak and 336 tonnes in the Kattegat, of which 47 tonnes and 9 tonnes were landed respectively. Discards of whiting in these fisheries, both below and above MCRS, are estimated at a total of 639 tonnes with 312 tonnes in the Skagerrak and 327 tonnes in the Kattegat discarded. This equates to discard rates of 87% in the Skagerrak and 97% in the Kattegat.

The total annual Swedish catches of whiting in trawls and seines >90 mm (TR1/TR2) is estimated at 129 tonnes in total in the Skagerrak and Kattegat, of which 23 tonnes were landed. Discards of whiting in these fisheries, both below and above MCRS, are estimated to in total 106 tonnes of which 27 tonnes (25%) were below MCRS. This equates to a discard rate of 82%.

The total annual Danish catches of whiting by vessels using bottom trawls with a mesh size of 120 mm and above is estimated to less than 10 tonnes per year in Skagerrak and Kattegat, of which the major part is above MCRS and are being landed. The discards of whiting below MCRS are considered negligible.

The supporting documentation (Annex F) refers to a number of previous selectivity experiments with similar gears (e.g. Briggs, 1992; Graham et.al., 2003; Frandsen et.al., 2009). These studies conclude that square mesh panels are an effective way of reducing catches of undersized whiting. In addition the supporting documentation refers to two collaborative industry-science projects, VISION and FLEXSELECT, which are considering for improving selectivity in whitefish fisheries. The initial findings of these studies show that in the short-term, increasing the selectivity of the SELTRA trawl for whiting will lead to disproportional losses of catches of other species.

Increases in sorting and stowage time leading to increased workload on board vessels for crews are also cited as justification for the *de minimis*. The supporting documentation (Annex F) refer to a study which estimates the average handling costs of one kg of fish under the landing obligation to be around 30-35 cents per kg. This compares to the very low market price for whiting for human consumption in Denmark and Sweden - the average market price for whiting in Denmark was 0.50-1.00 €/kg over the period 2010-2016. For landings of whiting below MCRS which could only be sold for industrial purposes the market price would be much lower, estimated at 15-20 cent per kg. Consequently, the JR concludes that the costs for handling all whiting catches would exceed the expected low market price gained for these landings and therefore would have a disproportionate negative economic impact.

EWG 17-03 observations

EWG 17-03 understands that of the total whiting discards in the Skagerrak, on average 20% are below MCRS and in the Kattegat approximately 30% are below MCRS. This equates to a total of 187 tonnes from total reported discards of 639 tonnes. Based on the total catch figures of *Nephrops*, cod, haddock, whiting, saithe, plaice and sole of these fisheries, a 2% *de minimis* for whiting would represent up to 236 tonnes that could be discarded per year. This is in excess of the total discards of whiting below mcrs by these fisheries of 187 tonnes so it is unclear why the *de minimis* is set at this level. In 2017 the *de minimis* volume requested would equate to 23% of the total TAC for whiting of 1,050 tonnes in ICES division IIIa.

EWG 17-03 notes that the *de minimis* request includes Danish trawl fisheries with a mesh size of ≥120 mm. However, discard estimates for this gear are negligible so it is unclear why this gear is included in this exemption. A representative from the Scheveningen group has subsequently explained that not having a *de minimis* for the larger mesh size would create an incentive for fishermen to switch to using the smaller mesh gear types that would be under the *de minimis* exemption for whiting. EWG 17-03 accepts that this is a reasonable explanation.

EWG 17-03 observes that the supporting information supplied does demonstrate that while improving selectivity for whiting in these fisheries is possible through gear modifications this will

result in disproportional losses of valuable catches of other species. However, EWG 17-03 points out that as the proposed volume of *de minimis* is in excess of the annual discards below MCRS, there is no real incentive to improve selectivity further to reduce catches of undersized whiting. Consideration should be given to gradually reducing the *de minimis* and also to continuing with selectivity experiments.

EWG 17-03 notes that the justification for the *de minimis* relating to handling costs being disproportionate compared to low market prices is generic to all types of species and fleets. EWG 17-03 suggest that such additional costs should not be considered in isolation for a specific fishery, but considered at the scale of the entire harbour or coastal area.

EWG 17-03 concludes that the justification for this exemption on the basis of improvements in selectivity being very difficult to achieve is well founded. It is backed up by selectivity studies which show increasing selectivity for whiting will lead to significant economic losses of other marketable species. However, qualitative economic data to support this is limited. EWG 17-03 notes that the volume of *de minimis* being in excess of the current level of discards of whiting below MCRS and whether this would act as a dis-incentive to try to improve selectivity in the longer term. EWG 17-03 also considers the arguments relating to disproportionate handling costs are rather generic and could be applied to many fisheries.

6.1.2 Bycatch of plaice in fisheries caught in the Nephrops trawl fishery with a mesh size ≥ 80-99 mm with a SEPNEP in ICES area IIa and IV

Background

The JR includes a proposal for a new a *de minimis* exemption relating to plaice bycatch in the *Nephrops* trawl fishery operating in ICES areas IIa and IV. The proposal requests a maximum *de minimis* of 3% of the "total annual catches of saithe, plaice, haddock, whiting, cod, Northern prawn, sole and *Nephrops*" for 2018. The *de minimis* is linked to the use of a highly modified trawl fitted with selectivity devices - SepNep panel and a "plaice-non-effective" grid. The SepNep is a sorting device developed by Dutch researchers to improve selectivity in *Nephrops* fisheries. The concept is based on the separation of fish and *Nephrops* in two codends in a modified trawl that is mounted with a sieve panel. To achieve improved *Nephrops* selectivity the SepNep trawl is supplemented with an innovative grid, mounted in the front part of the lower cod-end (the *Nephrops* codend).

The request for an exemption for *de minimis* is based on article 15.5.c.i) and ii), due to difficulties to improve selectivity in a short term period and disproportionate costs of handling the catches of plaice. The JR argues that it is difficult to increase selectivity further with the modified gear and that the *de minimis* is required to cover residual unwanted catches of plaice. The JR also argues that as *Nephrops* is the most important source of income for users of this gear, they are vulnerable to the potential loss that further increases in selectivity would cause. The representative of the Scheveningen Group clarified that the intention is that this *de minimis* exemption could be availed of by any vessel which use the selective gear. The *de minimis* exemption is to apply in 2018 only.

Basis for exemption

Plaice are a bycatch for 20 Dutch vessels targeting *Nephrops*, which landed 1,681t of plaice (Landing Obligation subject vessels) in 2016, out of a total catch of 4,538t (all species). The discard rate for this species is estimated to be 16% with discards of 317 tonnes.

Under experimental conditions, the SepNep panel has been shown to reduce discards of plaice to the amount by up to 80%, resulting in residual plaice discards of 63 tonnes (or 3% of the total catches). According to Annex H of the JR, current discards (and those possible with the SepNep panel) are mainly composed of individuals below MCRS. There is no information in the supporting documentation on the numbers of individuals discarded using the specified gear. The trials have also showed that the sorting grid also used in the modified gear with a 19.2mm bar spacing the grid excluded 56% of the biomass of non-marketable *Nephrops.* The supporting information indicates that the grid is optional and has no influence on the selectivity of flatfish.

The supporting documentation (Annex H) provides information on the Dutch fishery, and while it appears that the *de minimis* exemption as proposed would apply only to vessels fitted with the SepNep panel, it is also evident that no vessels are currently operating under such conditions.

The results are therefore based on testing under experimental conditions and it is not currently used commercially. Further testing is planned during 2018. It is not clear whether any other Member is interested in using this device.

EWG 17-03 observations

EWG 17-03 considers that the information provided demonstrates that using this device can significantly reduce plaice discards in this fishery. The results of the experiments carried out seem robust. The improvements in selectivity achieved are significant and residual discards for which the *de minimis* exemption is requested are relatively modest.

EWG 17-03 notes the grid which complements de SepNep panel does not influence the selectivity of plaice, but improves the selectivity in the catches of *Nephrops*. It would appear that the 3% *de minimis* request is justified under these circumstances, although further research may in future continue to improve the selectivity of this species.

The JR also recommends inclusion of a provision clarifying that the use of this gear is in compliance with the current technical measures regulation in force in the discard plan. EWG 17-03 agrees such a clarification is needed as the current Regulations could be interpreted in different ways. However, the EWG is not in a position to evaluate whether the proposed wording is appropriate or not and suggests this is a matter for the Commission possibly through the Expert Group on Fisheries and Aquaculture to discuss.

EWG 17-03 observes that the bar spacing proposed in the definition is at least 17mm whereas in the experiments a bar spacing of 19mm was tested in the trials. EWG 17-03 is unsure why there is a difference accepting 2mm would make little difference to the overall selectivity

EWG 17-03 concludes that the exemption is well founded as long as vessels are equipped with the SepNep panel, as described. As indicated in the JR it is important that "the next step is to implement and fully adapt the gear to the commercial situation".

6.1.3 Whiting and cod caught by bottom trawls 79-99 mm (TR2) in the North Sea (ICES areas IVa, IVb and c)

Background

The JR includes a revision to an existing exemption included under Article 6(h) of Regulation (EU) 2015/2250. The revision contained in the JR for 2018 extends the areas and adds cod to the exemption and requests a *de minimis* exemption for whiting and cod caught in the mixed trawl fishery using a mesh size of 79-99 mm (TR2) in ICES areas IVa, IVb and c. In 2017 this exemption applied only to whiting caught in this fishery. A *de minimis* volume of up to a maximum of 6% in 2018 and 5% after 2018 (on which a maximum of 2% can be used for cod discards) of the total annual catches of species that would fall under landing obligation is requested.

The request for an exemption is based on the basis that selectivity is very difficult to improve and on the disproportionate costs of handling and sorting. The justification for the previous exemption was assessed by EWG 16-10 and sufficient evidence was deemed to have been provided to support the exemption for the French fishery on the basis that further selectivity in the fishery was difficult to achieve. Nevertheless, EWG 16-06 requested that further information on other fleets with whiting bycatch, including catches, discard rates and reports of any relevant selectivity trials, needed to be supplied. This information was subsequently provided.

Basis for exemption

The justification provided for the exemption is more or less the same as provided for the initial exemption for whiting assessed by EWG 16-10. Cod catch and discard rates have been added. The information provided on selectivity and catch handling studies has not been updated.

The JR contains information predominantly on the French TR2 fishery involving 120 vessels that targets anglerfish, gadoid species, non-quota species (cephalopods, red mullet, sea bass and gurnards) and also sometimes pelagic species such as mackerel and horse mackerel. This fishery has high discards for whiting (46%) and cod (25%). An additional Dutch fishery is referred too

and information on the fleets and catch information is provided. The supporting information on selectivity and handling costs only relate to the French fleet.

The discard rates reported for these two fleets are:

- FR TR2 fleets - 3.8% for cod and 13.4% for whiting
- NL TR2 fleet - 0.5% for cod and 38% for whiting, respectively.

Accordingly, the estimate of the level of the 6% *de minimis* requested for the French and Dutch fleet of whiting and cod (of which max 2% is cod) are:

- FR TR2 based on the 2015 catches for all species under the landing obligation (i.e. haddock, cod, whiting and plaice) which were 2791 tonnes. The maximum *de minimis* volumes are 167 tonnes for whiting (6%) or 112 tonnes (4%) and 56 tonnes for cod (2% threshold);
- NL TR2 based on 2015 catches of whiting (1200 tonnes) and cod (585 tonnes) catches respectively. The total catch for this fleet is ot provided but it is assumed the *de minimis* volumes reported of 72 tonnes (6%) or 48 tonnes (4%) for whiting and 11 tonnes for cod (2% threshold) are based on the actual catches of this fleet.

Based on these figures the total *de minimis* volume for both fleets combined would be 239 tonnes of discarded whiting and 67 tonnes of discarded cod for the entire North Sea. Considering the information above, it seems that the total volume of *de minimis* requested is equal to 239 tonnes, and could be used exclusively to cover discards of whiting. However, since the cod safeguard is not mutually exclusive, then if the cod 25% maximum is reached, then potentially the 6% overall *de minimis* is surpassed. In reality, with the cod 25% safeguard the *de minimis* percentage exemption requested is around 7.7%.

EWG 17-03 observations

EWG 16-06 noted the challenging transition required from discard rates around 46% to the 6% *de minimis* level requested at the time without significant selectivity improvements. Considering the current discard rates reported (46% for FR and 38% for NL for whiting) to the now 6% (actually 7.7% *de minimis* level) requested that observation remains valid. EWG 17-03 notes that selectivity trials continue to be ongoing and that the results from these should be considered as a means to reduce unwanted catches going forward.

EWG 17-03 observes that even with a *de minimis* exemption there will still be a requirement to reduce discards further for whiting and the costs incurred by the rest of the unwanted catch that will be landed and counted against quota may provide an incentive to increase selectivity in the short-term.

EWG 17-03 notes that the *de minimis* volumes requested potentially could permit higher than current discards for cod (around 3.7 times more for the NL fleet, even with the safeguard proposed). While the volumes are small 11 tonnes of *de minimis* compared to 3 tonnes of discards, this could act as a dis-incentive to try to improve selectivity in the longer term, given all unwanted catches of cod can be discarded.

STECF have consistently proposed that the justification for *de minimis* exemptions is largely economic. However, EWG 17-03 notes that very little quantitative information on the economic impact of increasing selectivity and of sorting and handling catch has been provided. Any supporting information that has been remains largely qualitative.

EWG 17-03 concludes that the assertion that it is difficult to improve selectivity in the short term without incurring loss of marketable catch is supported by the information provided but only for the French fleet. For the Dutch fleet no relevant selectivity trials or information on selectivity projects and other possible studies have been provided. It is also unclear from the JR whether the intention is to apply this *de minimis* to other fleets. This was indicated to be the case in 2016, when information for fleets from Denmark, Belgium and the UK were included. If the intention is for these fleets to continue to be included then information on the number of vessels, catches and discard rates as well as reports of any relevant selectivity trials should be supplied.

6.1.4 Fish bycaught in Northern prawn trawl fishery with a sorting grid, with unblocked fish outlet

Background

The JR includes a revision to an existing *de minimis* exemption under Article 6(d) of Regulation (EU) 2016/2550. The exemption is for the bycatch of common sole, haddock, whiting, cod, saithe and plaice below MCRS combined caught with bottom trawls (OTB) with a mesh size of at least 35 mm equipped with a species selective grid with bar spacing of maximum 19 mm, with unblocked fish outlet, in the Northern prawn trawl fishery in ICES area IIIa. The *de minimis* volume proposed is up to a maximum of 1 % of the total annual catches of species under landing obligation (Norway lobster, common sole, haddock, whiting, Northern prawn, cod, saithe and plaice) in the fishery. The original exemption did not include cod, plaice and saithe.

The request for an exemption for *de minimis* is based on article 15.5.c.i), due to difficulties to further increase the highly selective properties of the gear concerned. As Northern prawn is the only income for users of this gear, they are particularly vulnerable for the potential loss an increase in selectivity would risk to cause.

Basis for exemption

The justification provided for the exemption is more or less the same as provided for the initial exemption for fish bycatch assessed by EWG 16-06. Cod, saithe and plaice catch and discard rates have been added. The information provided on selectivity and catch handling studies has not been updated. Information is only provided for the Swedish fleet operating in the Skagerrak and Kattegat. It is unclear whether the fleets from other Member States operating in the fishery will avail of this exemption.

The JR reports that the average estimated discards of undersized haddock, sole, whiting, cod and saithe in the Swedish directed Pandalus grid fishery in area IIIa amounted to 5.9 tonnes annually for 2010-2015 (haddock-0.8 tonnes, whiting-3.5 tonnes, cod-1.0 tonnes, sole-0.3 tonnes, plaice-0.3 tonnes and saithe-0.03 tonnes). This represents 0.4% of total annual catches of species subject to the landing obligation in this fishery. For 2019 when it is proposed to also include hake the total amount is 6.3 tonnes, corresponding to 0.5% of total catches. The *de minimis* also include cod and plaice bycatch in the Kattegat and the JR indicates that ideally *de minimis* quantities should be presented per stock. However, as 98-99% of the fishery takes place in the Skagerrak, the estimated *de minimis* quantities for the two Kattegat stocks are negligible (<0.1 tonnes).

EWG 17-03 observations

EWG 17-03 concurs with EWG 16-10 that the assertion that it is difficult to improve selectivity in the short term without incurring loss of marketable catch is supported by the information provided but only for the Swedish fleets. It is also not clear from the JR whether the intention is to apply this *de minimis* to other fleets. If this is the intention then information on these fleets including number of vessels, catches and discard rates and reports of any relevant selectivity trials need to be supplied. EWG 17-03 suggest that the Member States involved in this fishery and wishing to avail of this exemption should complete the template provided in EWG 16-06 report (section 4).

EWG 17-03 recognises that the volumes under this *de minimis* are small even with the addition of extra species and provided discarding under the exemption is monitored the impact is likely to be minimal in this fishery. However, EWG 17-03 re-iterates earlier advice from STECF that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 of the Common Fisheries Policy CFP to fish at FMSY can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from FMSY based advice. In this context and in a precautionary approach, the flexibility introduced through multi-species or combined *de minimis* exemptions can only be accounted for in respective stocks TACs by discounting their maximum possible amount.

6.1.5 Fish bycaught in Nephrops targeted trawl fishery

Background

The JR includes a revision to an existing *de minimis* exemption under Article 6(e) of Regulation (EU) 2016/2550. This exemption is for 2018 for catches of common sole, haddock, whiting, cod and saithe below MCRS combine in the fishery for *Nephrops* conducted with bottom trawls with a mesh size of at least 70 mm equipped with a species selective grid with bar spacing of maximum 35 mm in ICES area IIIa. The *de minimis* volume proposed is up to a maximum of 4 % of the total annual catches of species under the landing obligation (i.e. *Nephrops*, common sole, haddock, whiting, Northern prawn, cod and saithe). The existing exemption did not include cod or saithe catches.

The request for an exemption for *de minimis* is based on article 15.5.c.i, due to difficulties to further increase the highly selective properties of the gear concerned. The species in question for *de minimis* represent small but unavoidable by-catches. As *Nephrops* is the only income for users of this gear, they are particularly vulnerable for the potential losses an increase in selectivity would risk to cause.

Basis for exemption

The justification provided for the exemption is more or less the same as provided for the initial exemption for fish bycatch assessed by EWG 16-06. Cod and saithe catch and discard rates have been added. The information provided on selectivity and catch handling studies has not been updated. Information is only provided for the Swedish fleet operating in the Skagerrak but it appears that only Swedish vessels use this particular gear.

The JR reports that average estimated discards of undersized haddock, sole, whiting, cod and saithe in the Swedish *Nephrops* grid fishery in area IIIa amounted to 37.1 tonnes annually for 2010-2015 (haddock-4.0 tonnes, whiting-10.0 tonnes, cod-22.4 tonnes, sole-0.5 tonnes and saithe-0.3 tonnes). This represents 3.3% of total annual catches of species subject to the landing obligation in this fishery. For 2019 when also hake is included the total amount is 45.0 tonnes, corresponding to 3.5% of total catches.

EWG 17-03 observations

The same comments apply to this exemption as the exemption included in section 6.4.1 regarding the calculation of *de minimis* volumes based on multi-species.

EWG-17-03 also notes that in this particular exemption it is difficult to assess to which extent a multispecies *de minimis*, i.e. % of an aggregate catch of several stocks applied as a *de minimis* on one or several stocks, would contribute to achieving the overall objectives of the CFP or the specific requirements and conditions specified for *de minimis*. This multispecies *de minimis* could permit higher than current discards for some species, particularly considering the cumulative discards allowed through this multispecies exemption.

6.1.6 Common sole caught by beam trawls with a mesh size of 80-119mm with increased mesh sizes in the extension of the beam trawl in ICES subarea IV

Background

This is an existing exemption which was included as Article 6(c) in Regulation (EU) 2016/2250. It relates to common sole below minimum conservation reference size caught by vessels in ICES Subarea IV using beam trawls of mesh size 80-119 mm with increased mesh size in the extension of the beam trawl. The exemption allows for a *de minimis* volume of up to a maximum of 7%, in 2017, and 6 % of the total annual catches of this species. The new JR submitted does not amend this exemption. However, the Scheveningen Group identified that the Belgian or Flemish Panel required as part of this exemption is not defined in the discard plan. This has presented a problem for inspection and control of this de minimus. The Scheveningen Group acknowledges that this is an omission and therefore recommended the inclusion of an appropriate definition.

EWG 17-03 observations

EWG 17-03 agrees with the need for a definition of the Belgian panel as proposed. However, the proposed definition included in the JR is unclear and uses terms such as "tail" and "between the knots" that may not be easily understandable when translated into different languages. EWG 17-03 is not in a position to provide an alternative definition but has identified that the critical elements that need to be defined are the mesh size of the panel, the position of the panel relative to the codend, the joining ratio of the panel to the codend and the maximum twine thickness of

the panel. All of these elements are critical for selectivity. EWG 17-03 suggests the final legal definition is a matter for the Commission possibly through the Expert Group on Fisheries and Aquaculture to discuss.

6.1.7 Nephrops caught by bottom trawls with a mesh size of 80-99mm in ICES Subarea IV and ICES Division IIA

Background

This is an existing exemption which was included as Article 6(b) in Regulation 2016/2250. It was for *Nephrops* below minimum conservation reference size, caught by vessels using bottom trawls of mesh size 80-99 mm in ICES Subarea IV and Union waters of ICES Division IIa. The *de minimis* volume was up to a maximum of 6 % of the total annual catches of this species in this fishery. The new JR submitted proposes to revise the *de minimis* volume to 2% for 2018 due to the very limited use of this exemption in previous years and to minimise the impact on the TAC.

EWG 17-03 observations

The justification for this exemption remains unchanged and was assessed by EWG 16-10 and sufficient evidence was deemed to have been provided to support the exemption. EWG 17-03 did not re-evaluate this information and sees no justification for not accepting the reduction of the *de minimis* volume proposed.

6.2 North Sea - Proposals for survivability exemptions

A summary of the high survivability exemptions are given in Table 6.2.1.

Table 6.2.1 Summary of high survivability submitted as part of the North Sea Joint Recommendations (restricted to new or re-assessed exemptions)

Country	*Exemption applied for (species, area, gear type)**	*Species as bycatch or target*	*Number of vessels subject to the LO*	*Landings (by LO subject Vessels)*	*Estimated Discards**	*Estimated Catch*	*Discard Rate*	*Estimated discard survival rate from provided studies*
SE	Haddock, whiting, cod, plaice, sole, hake and saithe in pots and creels in area IIIa	bycatch	83 (SE *Nephrops* creels)	1.6	34.1	35.8		Directly observed at 46% when avian predation included; inferred at 90% based on fish pots when excluding avian predation
			140 (SE crab and lobster Pots)	0.01	?	?	?	Inferred at 90%, based on fish pots (assumes no avian predation, which maybe substantial)
UK (only UK vessels currently involved)	*Nephrops* caught with a mesh size of at least 80mm and equipped with a Netgrid selectivity device in ICES area IV	Target	not clearly stated	not clearly stated	not clearly stated	not clearly stated	9.6% (not clear whether this applies to whole fleet or only those fitted with a Netgrid	62%
UK, FR	Common sole under mcrs caught by trawls with a mesh size of 80-89mm in ICES division IVc	Target	143 FR vessels in total (based on 2015 data): 72 FR vessels in area IVc only & 52 in area VIId only. 19 fishing in both areas	Estimated sole landings by all TR2 vessels in IVc and VIId: 160 tonnes	Maximum of 6.7 tonnes in IVc and VIId	167 tonnes in IVc and VIId	Undersized sole has an estimated discard rate of 1% of total catches or 4% of total sole catches (based on 2013 to 2015 data).	82 – 89% for undersized sole

			30 UK vessels (<10m and <221 kW) in total (based on 2015-2016 data):1 in area IVc only & 27 in area VIId only. 2 in both areas	Estimated sole landings by all TR2 vessels in IVc and VIId (for 2015 and 2016): 6.3 tonnes in IVc & 70.3 tonnes in VIId	Maximum of 1.2 tonne in IVc (for 2015 and 2016) Maximum of 13.4 tonnes in VIId (for 2015 and 2016)	7.5 tonnes in IVc (for 2015 and 2016) 83.6 tonnes in VIId (for 2015 and 2016)	Sole has an estimated discard rate of 2.2% of total catches or 19% of total sole catches (of which approximately 70% are undersized sole (based on 2013 to 2015 data and Catchpole et al., 2017).	80 – 87% for undersized sole with avian predation rates applied

6.2.1 High survivability exemption for fish bycatch in pots and fyke nets (FPO, FYK) in area IIIa and IV

Background

In the context of the landing obligation, an exemption on the basis of high survivability is requested for cod, haddock, whiting, plaice, sole, hake and saithe in ICES area IIIa and IV in fisheries with pots and fyke nets (FPO, FYK). This exemption for high survivability intends to replace the current *de minimis* exemption included under Article 6(g), of Regulation (EU) 2250/2016.

Basis for exemption

Several sources of information are used to support this exemption's demand. This is information from existing published material and a new study which assesses levels of avian predation in a Swedish *Nephrops* creel fishery:

- Two studies carried out in Sweden and Germany already used as a basis for the exemption of Baltic cod in pots and traps (STECF, 2014). The results obtained during this study suggest that in this type of fishery, in which cod was being targeted, and with this type of gear, the survival rate of cod can be very high and close to 100%. Little information is however provided on the methodology used and no information is available on the experiment period to be able to assess if these results can be extrapolated to other similar fisheries and/or other areas. It must be noted that all cod caught in those studies were fished at relatively shallow depth (20-50 m depth in the Swedish experiment and 3-5 m depth in the German one).
- A review of information available in the literature on discard survival from pots, mainly for cod caught in Norwegian fisheries. All the cited studies conclude on survivability rate from 75-90%. Temperature and depth of capture are shown to be important factors affecting cod survival. When fished in deeper waters, swim bladder expansion negatively effects the diving capability of released fish and increased avian predation. There has been observed high prevalence of cod with compromised buoyancy when caught at fishing depths of 114-184m, this was observed among 22% of all fish caught at 50-130 m and 2% at <50 m.
- A pilot study conducted by SLU-Aqua aboard Swedish *Nephrops* creelers fishing in Area IIIa in response to previous STECF recommendations on similar fisheries from the Baltic joint recommendations (STECF, 2014). The study investigated only immediate mortality caused by handling and release of unwanted fish by-catches and did not looked at potential longer term mortality. The analysis is based on a rather limited number of observations (421 individual fish caught during 5 fishing trips). The pilot study indicated that although the catch and handling phases in pot/creel fisheries are likely to inflict low mortality on fish catches, the subsequent release phase when returned fish is exposed to avian predators is the key factor to minimise discard mortality: 56% of all discarded fish were taken by seabirds. As a main conclusion of the study, it is stressed that equipment such as a tube chute at the release table permitting the release of fish below the surface of the water should be considered as a mandatory requirement if a survival exemption is to be granted for this fishery.

The list of the fisheries for which the exemption is being sought includes the Swedish creel and pots fishery directed for *Nephrops* in area IIIa, the Swedish fishery for crab and lobster using pots taking place in coastal areas in Skagerrak and Kattegat, the Swedish fishery for wrasse by creels and fyke nets in area IIIa and the UK fishery using creels in area IV (See table 6.2.1).

EWG 17-03 observations

EWG 17-03 considers that for the types of gears listed in the proposed exemption (i.e. pots and fyke nets) and based on available scientific evidence (STECF, 2014), it is reasonable to assume that mortality in the catching phase for these gears is low, typically less than 20%. Such gears operate by trapping fish and crustaceans inside a static netting structure which usually inflicts little damage to the fish caught increasing its probability of post-release survival. There are differences between these gears; pots used to target fish are designed to retain larger, marketable sized, fish and small fish are not generally caught. Creels used to target *Nephrops* and pots used to retain crabs and lobsters use smaller meshes to retain the target species and consequently will catch smaller unwanted fish. This may lead to higher mortality of fish in crustacean fisheries.

EWG 17-03 notes that the supporting scientific information relates to Baltic and ICES IVa areas, while the exemption is sought for ICES area IV and IIIa. The environmental conditions, such as temperatures and depth (two important factors for survival), and handling and release practises, may be different in some fisheries within the proposed area, compared with those for which survival data are available. Information on fishing depths, environmental conditions and handling practices in the proposed area is provided only for Sweden. Crab and lobster pots are fished at depths between 10 and 40 m, wrasse pots at depths between 1 and 6 m and *Nephrops* creels between 35 and 80 m, which are comparable with the supporting evidence. In addition the supporting data relate only to cod, while the proposed exemption is proposed for cod, haddock, whiting, plaice, sole, hake and saithe. The proposed exemption assumes that survival probability for cod is the same for other species, no evidence is provided to support this assumption and moreover the quantities of discards for these species are provided only for Sweden. EWG 17-03 further notes that only immediate survival rates are available and no long term survival study such as the one advocated by ICES (WKMEDS) are presented (ICES, 2014).

As highlighted in the study presented as supporting information, the main issue for creels relates to avian predation of small unwanted fish, mostly cod, which can be substantial. It is less likely than avian predation is as prevalent when using pots that target fish and therefore discard larger fish, because these size fish may although no evidence to confirm this has been identified. EWG 17-03 also considers that the use of physical arrangements, such as fish slides could potentially reduce such predation and increase post release survivability, particularly with the use of *Nephrops* creels, but notes that no quantitative analysis of the impact such equipment has been presented.

EWG 17-03 observes that no direct evidence is presented on the survival rates of the discarded species in the proposed fisheries. The evidence presented shows that survival of discarded cod from pots used to target fish is consistently >75%, and increasing depth has a negative effect on the health of released cod. The proposed exemption applies to pot fisheries targeting crustaceans.

EWG 17-03 notes that detailed fleet and fishery information is provided only for the Swedish fishery. However, other fisheries are referred too and according to the limited information that is provided, the UK fishery is much larger than the Swedish fishery (603 fishing boats compared to 237). It is unclear whether the UK figures include vessels using pots to target lobsters and crabs, or only vessels using creels to target *Nephrops*.

EWG 17-03 concludes that, based on limited evidence, there is potential for more than half of cod released from *Nephrops* creels to be predated by avian predators, unless unwanted catches are released below the surface and out of the reach of seabirds.

EWG 17-03 concludes that information on fishing depth and temperature from the proposed fisheries, other than Sweden, are needed ideally to enable an assessment of how similar the proposed fisheries are to the studied fisheries.

The proposed exemption assumes that haddock, whiting, cod, plaice, sole, hake and saithe released from crab and lobster pots and *Nephrops* creels have the same survival chances as cod

released from pots used to target fish. While there is no direct evidence to support this, EWG 17-03 concludes it is a reasonable to infer that, at the point of release, assuming environmental and technical operations are comparable, that unwanted catches will be in good health owing to the benign nature of the gear.

EWG 17-03 concludes that the overall quantities of fish associated with the proposed exemption are negligible. Therefore given the gear type is relatively benign and provided discarding under the exemption is monitored, the impact is likely to be minimal.

6.2.2 High survivability exemption for Nephrops caught with a mesh size of at least 80mm and equipped with a Netgrid selectivity device in ICES area IV

Background

The 2017 JR proposes an exemption on the basis of high survivability for *Nephrops* in ICES area IV caught with bottom trawls with a mesh size of at least 80mm and equipped with a Netgrid selectivity device comprising a four panel box section inserted into a two panel trawl with an inclined sheet of netting. This exemption was included in the JR submitted in 2015. However, it was subsequently withdrawn following assessment by STECF EWG 15-10 that highlighted the lack of supporting information. It was re-submitted in the 2016 JR with additional information underpinning the exemption.

The justification for high survivability in 2016 was based on the results of two studies (Armostrong et al. 2016; Santos et al. 2016). A study conducted by CEFAS in fishing grounds of the North East of England (area IVb) and a study conducted by Sweden in area IIIa. The CEFAS study conducted in fishing grounds off the North East of England (area IVb) reported a survival rate of 62%. This was higher than results from other survival studies in *Nephrops* fisheries.

EWG 16-10 noted that the study conducted by Sweden in area IIIa added limited value in the justification for a high survivability exemption for a fishery in area IV because it would not be advisable to assume that survival rates are the same in different regions. As pointed out by EWG 15-10 these fisheries are very different in their characteristics, in terms of gears used, prevailing environmental conditions and indicative catch rates.

EWG 16-10 considered that the methodological approach used in the CEFAS study to be appropriate for estimating the survival rate of discarded *Nephrops*. However, EWG 16-10 noted that the CEFAS study was conducted during a period of relatively cold weather (3rd February – 11th March 2016) with sea temperatures that was close to the ambient air temperature. Anecdotal evidence has shown that exposure to warm air temperature on deck and subsequent discarding into cool water may induce a thermal shock and therefore have a negative impact on *Nephrops* survival.

Following the evaulation by STECF the exemption was subsequently included under Article 4 paragph 1(d) of Regulation (EU) 2016/2250 with the proviso that Member States would provide additional data and any other relevant scientific information supporting the exemption during 2017. In particular STECF 16-10 (EWG 16-10) identified the need for further trials to determine whether survival rates were different in the summer months compared to the original trials. STECF also pointed out that there was no information presented regarding the number of vessels that would be affected by the exemption or what catch amount was represented by the fishery.

Basis for exemption

The scientific survival study underpinnning this exemption (annex Ai) is the same as evaluated by STECF 16-10 (EWG 16-06), which reported on experiments in area IVb (Farne Deeps Functional Unit) in colder months representative of when the Farne Deeps fishery takes place (October to March). However, other new information was submitted with the JR 2017 by way of two papers with additional information related to two of the factors known to affect discard survivability; catch composition (Annex Aii) and environmental variables ambient air- and water temperature on different *Nephrops* grounds (Annex Aiii).

The paper on catch data is based on the Cefas observer programme and summarizes catch composition from 34 trips with TR2 trawls in area IVb during 2016 (Randall et al., 2017). The paper indicates that catch composition in the regular fishery are comparable to the to the catch compositions observed during the Cefas survival study using the Netgrid design. The main difference was in the proportion of whiting catches, which was much reduced when the Netgrid

was used and contributed 8% to the catch compared with 32% of the catch from the standard trawl. Catch composition is a factor that influences discard survival rates. The differences if catch composition when vessels use the Netgrid, compared with a standard trawl, may influence the survival chances of discarded *Nephrops*, although the level of influence has not been quantified. Where catch composition, operational methods and environmental conditions are similar, the paper argues for that it would be reasonable to extrapolate the discard *Nephrops* survival rates identified in the Cefas study.

The other paper supplied describes average environmental conditions on different *Nephrops* grounds in the context of where and when the survivability exemption for Netgrid caught *Nephrops* can be considered relevant for extrapolation (Randall and Catchpole, 2017). Temperature has been observed to influence the survival levels of discarded *Nephrops*, whereby higher temperatures are associated with lower survival. Of the ten *Nephrops* Functional Units identified in the North Sea region only the Farne Deeps fishery operates only during the winter months. The other areas are fished all year round. The paper shows that average monthly air and sea surface temperatures are similar on the fishing grounds of Farne Deeps, Firth of Forth and the Moray Firth, and concludes that survival chances of discarded *Nephrops* in the Firth of Forth and Moray Firth are therefore unlikely to differ from those of Farne Deeps. Outside of the Farne Deeps fishing season between October and March, when other fisheries are still operating, air and water temperatures are higher than those during which the Farne Deeps survival estimate was generated. The effect of these temperature differences on *Nephrops* survival, of up to 5C, is currently unknown.

Based on the previous survival study and the two new additional notes, the JR recommends that the exemption shall be applied to the whole of area IV at all times of the year. The JR further recommends that should the additional information provided be judged as not sufficient for applying the exemption to the entire area, the Scheveningen Group recommends to limit the exemption to the Farne Deeps (FU6), Firth of Forth (FU8) and Moray Firth (FU9) *Nephrops* Functional Units in the winter months (October to March).

EWG 17-03 observations

EWG 17-03 notes that the JR mentions that relevant Member States have been unable to carry out further experiments in warmer temperatures and therefore have not supplied direct evidence that there are no differences in survival between seasons as recommended by STECF plenary 16-02.

EWG-17-03 considers that the additional studies on catch compositions and environmental conditions are relevant and increase the knowledge regarding the representativeness of the underpinning survival study for the current exemption. In this context EWG 17-03 concurs with the interpretation that the survival is unlikely to differ due to environmental conditions between the *Nephrops* grounds in the Farne deeps and Firth of Forth and Moray Firth. However, EWG 17-03 cannot assess whether differences in fisheries and catch compositions is likely to differ between the Farne deeps and these two areas. Additional information with fisheries descriptions for the Firth of Forth and Moray Firth areas would be beneficial to aid such an assessment.

In conclusion and similar to the previous evaluation summarised by STECF in 2016, EWG 17-03 concludes that the available information provides robust estimates of *Nephrops* discard survival during winter months. However, the current knowledge of environmental conditions and fisheries does not support a survival exemption in the whole of area IV at all times of the year. EWG 17-03 is of the opinion that the exemption should be limited to the specific Fu's identified in the JR.

6.2.3 High survivability exemption for common sole under mcrs caught by trawls with a mesh size of 80-89mm in ICES division IVc

Background

The 2017 JR proposes an exemption on the basis of high survivability for common sole caught by trawls with mesh size of 80-89 mm for ICES areas IV, and VIId. This exemption was first proposed in 2016 and the information provided on the fishery covered the North Sea and also for the English Channel. It was concluded that these were essentially the same fisheries and therefore combined the information from both JRs for its evaluation of the exemption request. In

the 2017 request for this exemption, the scope has been extended to include fishing vessels of up to 221 kW power and those fishing at depths up to 30 meters. The main fishing gear to which this exemption shall apply are bottom otter trawls (EWG 16-10).

The basis for this exemption was a CEFAS study (Santos el al., 2016) on the survival of discarded sole in the English east coast inshore otter trawl fishery. The approach and methodology selected to assess the discard survival during the sampled trips was conducted according to ICES guidelines (ICES, 2014). Fish vitality scores were combined with the likelihood of survival for each vitality category. The study followed the same procedures as in recent CEFAS survival studies (Catchpole et al., 2015, and Smith et al., 2015). The estimated survival rate for all vitality categories of undersized sole was 51% after an observation period of 15 days. The extension models show 42-43% and 47-48% discards survival of undersized sole beyond the time period.

EWG 16-10 raised a number of concerns about the representativeness of the trials carried out. In particular they pointed to seasonality effects, the lack of proper controls in the study, the normal handling and sorting process on vessels participating in the fishery and the difficulty in extrapolate from this study to other areas and fisheries.

On this basis EWG 16-10 concluded that further research during the peak season in July-September and also in fishing depths, conditions, and fishing areas that meet those of the fishery for which the exemption is requested (the South East England inshore sole trawl fishery) would be desirable. Along with the currently provided study, provided a more complete picture of sole survivability caught in this fishery. EWG 16-06 considered it appropriate to await the outcome of the further research results so that new results can be taken into account by managers when deciding to grant the proposed high survivability exemption in this specific fishery.

Following the evaluation by STECF, the exemption was subsequently included under Article 5 of Regulation (EU) 2016/2250 on the condition that it would only apply to vessels with a maximum length of 10 meters, a maximum engine power of 180 kW, when fishing in waters with a depth of 15 meters or less and with limited tow durations of no more than 1:30 hours. In addition Member States were required to submit Commission additional scientific information supporting the exemption during 2017.

An assessment of the new information provided was completed by EWG 17-03. This included a descriptive assessment and the application of critical review questions which have been devised by the ICES Methods to Estimate Discard Survival Workshop (ICES WKMEDS) to assess the quality of discard survival studies (Annex 3).

Basis for the exemption

The justification is based largely on the previous study evaluated in 2016 and evidence from a detailed and well-replicated survival study carried out later in 2016 (Randall et al., 2017). In this study, carried out in ICES area VIId, catches of sole were monitored on-board a twin otter trawler (221 kW, 6.6 m in length fishing, 86 mm codend mesh size) under representative, commercial conditions.

Sole were sampled on-board during two fishing days in July (7 hauls), 4 days in August (the peak season of the fishery; 14 hauls) and October (12 hauls). In total, 744 sole (both < and > MCRS) were profiled for their vitality status and visible injuries. Of those, 290 sole were monitored on-board and at shore-based facilities for a 14 days for any delayed mortality. Overall survival of sole below MCRS was estimated between 82 and 89%. The results are summarised in table 6.2.3.1.

Table 6.2.3.1 Estimated overall survival rates for Sole caught with the inshore otter trawl. Table presents the weighted overall survival rate for each model, based on the catch vitality profiles, for the under minimum landing size sole (<24 cm) and all sole catches.

Species	SQA	Proportion at each vitality of catch	For the obs. period	Survival probability	Extension model 1 (ph)	Extension model 2 (Wei)
All catch	E	0.68	88%	88 (81-	79%	79%

Sole	G	0.30		89)%		
	P	0.01				
	D	0.01				
<24 cm	E	0.74	89%	89 (69-96)%	82%	89%
	G	0.24				
	P	0.01				
	D	0.01				

Despite the seasonality in sampling, no effect on survival was observed. Sampling in August was confounded by the presence of seaweed forcing the skipper to haul the net after <20 min. Despite the warm water temperatures, shorter trawl duration may reduce capture stress on discarded fish. Although the sorting, sampling and handling procedures are described, at least average air exposure and handling times for the batches of fish are not detailed. Previous studies (e.g. Uhlmann et al., 2016) suggested that beam-trawled sole seem resilient to <30 min air exposure.

EWG 17-03 observations

EWG 17-03 recognises that the studies conducted by CEFAS provide valuable information on sole survivability in English East Coast Inshore otter fishery. These studies can be used as a methodological basis for further investigations including fishery with other types of fishing gears. Evidence has also been provided that for the additional experiment in VIId, no effect of seasonality was observed on survival between trips in August and October.

EWG 17-03 notes that both studies were performed with a twin otter trawl (OTT), but the request for an exemption is expanded to a range of the otter trawl gears.

EWG 17-03 recommends listing technical, biological and environmental parameters aggregated across hauls per trip trip-level parameter estimates from the previous study in IVc to allow for comparisons of average catch volumes, and trawling speeds. This would be useful to allow an assessment of the representativeness of the experiments carried out.

EWG 17-03 notes a more detailed description of the commercial handling and sorting procedures is provided, although it is not clearly stated for how long sampled fish have been exposed to air. Previous published studies suggest that sole seem to be robust to air exposure, so differences relating to handling times, may not affect survival.

EWG-17-03 notes that, although a detailed description of the UK and French fleets and fisheries involved, current catches and discard rates has been provided, it is unclear whether other fleets wish to avail of this exemption.

EWG 17-03 suggests that evaluating the relevance of factors contributing to the variability in survival estimates between the respective studies (51% vs 89%) may be useful. Generalized mixed effects logistic regression models or a survival analysis on a combined dataset could be used for this purpose. Exploratory Kaplan-Meier plots considering co-variates other than vitality status, such as trip length, season, temperature, and fish length, among others may indicate which factors are relevant in predicting survival. Figure 6.3.2.1 below shows such an analysis.

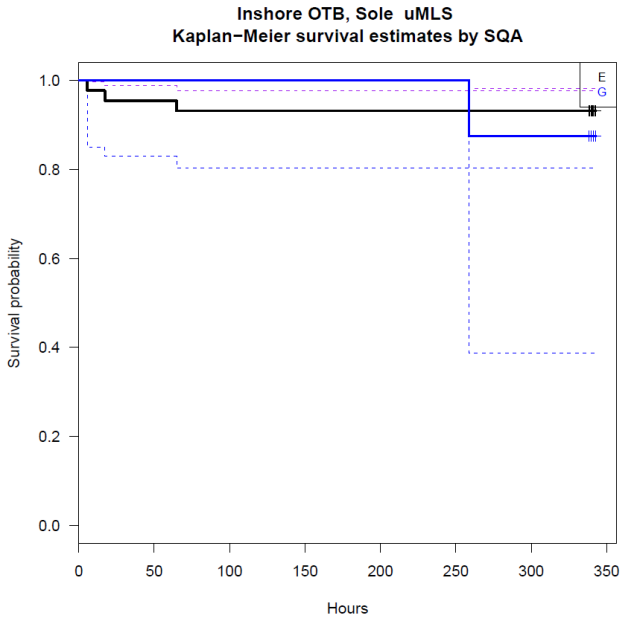

Figure 6.3.2.1 Kaplan-Meier estimates of survival are shown as solid lines and 95% pointwise confidence intervals as dashed lines for experimental sole below mcrs (<24cm)

Note: The small crosses at the end and along the lines mark times when one or more surviving sole stopped being observed; the x-axis is the time from the beginning of the sort period until death or the end of the observation period. Curves were plotted by semi-quantitative vitality conditions class: E – Excellent (black line) and G – Good (blue line)

EWG 17-03 concludes that the evidence provided is robust and underpins the existing exemption and also the proposed extension to include vessels of up to 221 kW power and those fishing at depths up to 30 m. However, EWG 17-03 points outs that given the condition of the exemption to take effect outside of designated nursery areas, a clear description of where these nursery areas are and the fishing effort within and outside these areas is required. In this regard EWG 17-03 notes that at an earlier STECF plenary meeting (15-02), a working document by Vermard et al. 2014 provides detail on designated nursery areas of sole in VIId. It is estimated by Vermard et al. (2014) that around 1/3 of the catches are taken in these nurseries (average 2010-2012).

7 NWW – Overview of Joint Recommendations

Commission Delegated Regulation (EU) 2015/2438 established a discard plan for certain demersal fisheries in North Western Waters (i.e. in Union waters of ICES Areas Vb, VI and VII). This discard plan was valid until 31 December 2018. On the basis of a new set of Joint Recommendations for the NWW submitted by the regional group of Member States this plan was updated by Commission Delegated Regulation (EU) 2016/2375. In 2017, a further set of Joint Recommendations has been submitted by the Member States. The main elements of these JR's and which of these have been assessed by EWG 17-03 are summarised in table 7.1.

Table 7.1 Main elements of the Joint Recommendations submitted for the NWW

Elements	Status	Section
De minimis		
Combined *de minimis* for species under the landing obligation for vessels using bottom trawls >80mm in the Celtic Sea and the English Channel	New* (Not included in the JR)	Section 7.1.1
Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea	Existing and unchanged	Not assessed
Common sole caught with beam trawls with a mesh size of 80-	Existing and unchanged	Not assessed

119mm with increased mesh sizes in the extension of the beam trawl		
Nephrops caught with bottom trawls with a mesh size of 80-99mm in ICES subareas VI and VII	Existing and unchanged	Not assessed
Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Channel	Existing and unchanged	Not assessed
Whiting caught with bottom trawls and seines ≥100mm and pelagic trawls to catch whiting in the Celtic Sea and the Channel	Existing and unchanged	Not assessed
Whiting caught with bottom trawls and seines <100mm and pelagic trawls to catch whiting in the Celtic Sea	Existing and unchanged	Not assessed
High Survivability		
Common sole (undersized only) caught with trawl gears in area VIId	Existing but re-assessed on basis of new information*	Section 7.2.1
Nephrops caught with Pots, Traps or Creels in ICES subareas VI and VII	Existing and unchanged	Not assessed
Minimum conservation reference size		
None	NA	
Technical Conservation Measures		
None	NA	

7.1 NWW – Proposals for *de minimis* exemptions

A summary of the *de minimis* applications are given in Table 7.1.1.

Table 7.1.1 Summary of *de minimis* exemptions as submitted for the NWW (restricted to new or re-assessed exemptions)

Country	***Exemption applied for (species, area, gear type)****	***Species as bycatch or target***	***Number of vessels subject to LO***	***Landings (by vessels subject to the LO)***	***Estimated discards****	***Estimated catch***	***Discard rate***	***Estimated de minimis volumes***
FR & IE	Combined *de minimis* exemption request for species under the landing obligation for vessels using bottom trawls ≥ 80 mm in the Celtic Sea and the Channel	Target and bycatch	TR1 - FR = 142 & IE = 127	18022t	6931t	24953t	27.8%	1248t
			TR2- IE = 138 & FR = 145	8879t	4146t	11725t	35.5%	586t

7.1.1. Combined de minimis exemption request for species under the landing obligation for vessels using bottom trawls ≥ 80 mm in the Celtic Sea and the Channel

Background

The NWW regional group requested that EWG 17-03 evaluate the potential impacts of a combined *de minimis* exemption rather than a *de minimis* based on the catches of a single species. The current *de minimis* exemptions included in the NWW discard plan are based on single species catches. The motivation for this approach is to provide increased flexibility for fishermen when operating in complex mixed fisheries as pertain in the Celtic Sea and the Channel. This request is not part of the JR submitted by the NWW.

According to the supporting document the *de minimis* exemption would come into effect only in 2019 and would be for a maximum of 5% of the total annual catches of cod, haddock and whiting for bottom trawl fisheries with a mesh size ≥ 80 mm in the Celtic Sea and the Channel. The request is based on the basis that selectivity is very difficult to improve without losing large parts of commercial landings and on the disproportionate costs of handling and sorting.

EWG 17-03 understands that this exemption would replace the following three existing exemptions for whiting with bottom trawls in ICES areas VIIb-j and VIId,e:

- Whiting – bottom trawls and seines with a mesh size of less 100mm (TR2) in the English Channel (ICES sub-areas VIId,e)
- Whiting – bottom trawls and seines with a mesh size greater than equal to 100mmm (TR1) in the Celtic Sea and English Channel (ICES Areas VIIb-j)
- Whiting – bottom trawl and seines with a mesh size less than 100m (TR2) in the Celtic Sea (ICES Areas VII excluding VIIa,d,e)

The justification for these previous exemptions were assessed by EWG 15-10 in 2015 and by EWG 16-10 in 2016 and sufficient evidence was subsequently provided to support the exemption for the French and Irish fisheries on the basis that further selectivity in the fishery was difficult to achieve. Nevertheless, STECF PLEN-02 identified that information was still missing and also suggested that the three exemptions be merged into one single exemption. EWG 17-03 does not know whether this is the intention of the combined *de minimis* presented by the NWW.

The basis for the exemption

The supporting document includes a definition of the two fisheries, TR1 (Vessels fishing with bottom trawls and seines of a mesh size greater than 100mm) and TR2 (Vessels fishing with bottom trawls and seines of a mesh size less than 100mm). It provides information on the volumes of discards and catches based for all fisheries operating in the area combined.

The justification for the exemption is similar to the justification proved for two of the existing exemptions in 2016. It refers to a number of studies relevant to the TR1 and TR2 exemptions, namely CELCELCT, SELSELEC, REJEMCELEC, SELECCAB, COBRENORD, EODE and the Discard study OPN. These provide results of a number of experiments testing a variety of selectivity devices in relation to the three species concern as well as specific studies on the impact of choke species, and the disproportionate costs of handling and sorting catches.

The request includes an estimate of the level of *de minimis* that would be allowed under the *de minimis* exemption. It is calculated on 2013-2015 average total catches of the main TAC species and for all fleets of haddock, whiting, cod combined. For TR1 mixed demersal vessels in Celtic Sea and Western Channel the *de minimis* volume is based on total catches of 72,991 tonnes of TAC species (average 2013-2015) of which 24,953 tonnes were whiting, cod and haddock catches. A *de minimis* of 5% would represent theoretically a maximum volume of discards of 1247.7 tonnes (for all European vessels using TR1 gear in Celtic sea and Western Channel). Of those 1247.7 tonnes, and according to the profile of discard established on those STECF data, discards of each species would represent:

- Whiting: 36.4% of the total gadoids discards volume (cod, whiting, haddock)

- Haddock: 57.8% of the total gadoids discards volume (cod, whiting, haddock)

- Cod: 5.8% of the total gadoids discards volume (cod, whiting, haddock)

For TR2 vessels Total catches were 44,979 tonnes of TAC species (average 2013-2015) of which 11,725 tonnes were whiting, cod and haddock catches. A *de minimis* of 5% would represent theoretically a maximum volume of discards of 586 tonnes (for all European vessels using TR2 gear in Celtic sea and Western Channel) with discard of each species representing the following:

- Whiting: 55% of the total gadoids discard volume (cod, whiting, haddock)

- Haddock: 41% of the total gadoids discard volume (cod, whiting, haddock)

- Cod: 5% of the total gadoids discard volume (cod, whiting, haddock)

A safeguard provision to limit the *de minimis* species flexibility, (i.e. a maximum 25% for a species within a complex of species considered in the overall *de minimis* percentage) is included. According to the supporting document this is in order to limit the risk of discarding of only one species and because discard rates can be significantly different from a species to another it is propose to put in place safeguard. The safeguards should be revised if necessary and according to discard profile that can evolve over the years.

EWG 17-03 observations

EWG 17-03 understands that the intention was to consider the approach rather than to scrutinise the detail of the information provided. However, EWG 17-03 does note that only information for the French and Irish fleets is provided. It is also not clear whether the intention is to apply this *de minimis* to other fleets. If this is the intention then information on these fleets including number of vessels, catches and discard rates and reports of any relevant selectivity trials need to be supplied to support the exemption. EWG 17-03 notes that only limited qualitative information on the economic impact of increasing selectivity and of sorting and handling catch is provided.

EWG 17-03 considers that the assertion that it is difficult to improve selectivity in the short term without incurring loss of marketable catch is supported by the information provided but only for the French fleets. For other fleets any relevant selectivity trials and comprehensive information on selectivity projects and other possible studies would be needed in supporting a formal request for the exemption. EWG 17-03 suggest that the Member States involved in this fishery and wishing to avail of this exemption should complete the template provided in the EWG 16-06 report.

EWG 17-03 considers that the combined approach taken does provide flexibility and notes the use of the safeguard mechanism to avoid significant discarding of one species only. In that sense the combined *de minimis* meets the principle objective described in the supporting documentation.

EWG-17-03 notes that regional groups choosing to take a combined *de minimis* approach should be mindful of the dangers of using such a mechanism to allow the discarding of significant quantities of fish and effectively increasing catches well in excess of desired or intended levels. Therefore EWG 17-03 re-iterates that to avoid the risk of this occurring, *de minimis* exemptions are best based on a percentage to the total catch of the given species in the given fishery where the exemption is sought (i.e. a single species approach).

In this context, EWG-17-03 notes that it is difficult to assess to which extent a multispecies *de minimis*, (i.e. % of an aggregate catch of several stocks applied as a *de minimis* on one or several stocks), would contribute to achieving the overall objectives of the CFP or the specific requirements and conditions specified for *de minimis*. A multispecies *de minimis* could permit higher than current discards for a particular fishery/species, particularly considering the cumulative discards allowed through this multispecies exemption for several fisheries in the same area. In this particular case the *de minimis* volumes requested could permit higher than current discards for haddock and for cod (between 1.2 to 6 times more, even with the safeguard proposed).

EWG-17-03 notes however that the inclusion of a safeguard provision to limit the *de minimis* species flexibility is a positive step in trying to avoid the potential negative outcomes of a multispecies *de minimis*. In this case, however, it falls short on avoiding the above mentioned risks as if all species 25% maximum is reached, then the 5% overall *de minimis* is surpassed. In reality, with the 25% safeguard the *de minimis* percentage exemption requested is 6.25% for TR1 and 6.01% for TR2.

EWGs 15-10 and 16-06 noted the challenging transition required from discard rates around 30% for whiting to the 7% *de minimis* level requested at the time without significant selectivity

improvements. Considering the current discard rates reported (27.8% for TR1 and 35.5% for TR2%) that observation remains valid. In addition EWG 17-03 notes that even with a *de minimis* exemption there will still be a requirement to reduce discards further for whiting and the costs incurred by the rest of the unwanted catch that will be landed and counted against quota may provide an incentive to increase selectivity in the short-term. In this context EWG 17-03 notes that selectivity trials continue to be ongoing and that the results from these should be considered as a means to reduce discards.

EWG 17-03 concludes that there are risks of significant discarding and increases in catches in adopting a combined *de minimis* approach even with a safeguard mechanism in place. However, the approach does offer a degree of flexibility which may help fishermen adapt to the landing obligation in mixed fishery situations. However, EWG 17-03 re-iterates out that any *de minimis* discard quantities should (and have been) deducted from the catch opportunities arising from FMSY based catch advice. In this context and to respect the precautionary approach, under a combined *de minimis*, the separate *de minimis* volume for each individual species within the combined species can only be accounted for in respective stocks TACs by discounting the maximum possible amount of *de minimis* for each species that could potentially be discarded.

7.2 NWW – Proposals for Survivability Exemptions

A summary of the high survivability applications are given in Table 7.2.1.

Table 7.2.1 Summary of high survivability exemptions submitted as part of the NWW Joint Recommendations (restricted to new or re-assessed exemptions)

Country	*Exemption applied for (species, area, gear type)**	*Fishery Description (mesh size + area)*	*Number of vessels subject to the LO*	*Landings (by LO subject Vessels)*	*Estimated Discards**	*Estimated Catch*	*Discard Rate*	*Estimated discard survival rate from provided studies*
UK, FR	Common sole under mcrs caught by trawls with a mesh size of 80-89mm in ICES division IVc	Target	143 FR vessels in total (based on 2015 data): 72 FR vessels in IVc only & 52 in VIId. 19 fishing in both areas	Estimated sole landings by all TR2 vessels in IVc and VIId: 160 tonnes	Maximum of 6.7 tonnes in IVc and VIId	167 tonnes in IVc and VIId	Undersized sole has an estimated discard rate of 1% of total catches or 4% of total sole catches (based on 2013 to 2015 data).	82 – 89% for undersized sole
			30 UK vessels (<10m and <221 kW) (based on 2015-2016 data):1 in IVc & 27 in area VIId only & 2 in both areas	Estimated sole landings by all TR2 vessels in IVc and VIId (for 2015 and 2016): 6.3 tonnes in IVc & 70.3 tonnes in VIId	Maximum of 1.2 tonne in IVc (for 2015 and 2016) Maximum of 13.4 tonnes in VIId (for 2015 and 2016)	7.5 tonnes in IVc (for 2015 and 2016) 83.6 tonnes in VIId (for 2015 and 2016)	Sole has an estimated discard rate of 2.2% of total catches or 19% of total sole catches (of which approximately 70% are undersized sole (based on 2013 to 2015 data).	80 – 87% for undersized sole with avian predation rates applied

7.2.1 High survivability exemption for common sole under mcrs caught by trawls with a 80-89mm mesh size in ICES division VIId

Background

In the context of the landing obligation for the demersal fisheries, an exemption on the basis of high survivability is requested for sole under mcrs caught by 80-89mm otter trawl gears (in ICES area VIId. EWG 17-03 notes that the information on the fishery is provided in both the JRs for the NWW and also for the North Sea.

EWG 17-03 observations

EWG 16-06 identified that this is essentially the same fishery and have combined the information from both JRs for its evaluation of the exemption request. EWG 17-03 has followed the same approach and therefore the same observations apply as under section 7.2.3.

8 SOUTH-WESTERN WATERS - OVERVIEW OF JOINT RECOMMENDATIONS

Commission Delegated Regulation (EU) 2015/2439 established a discard plan for certain demersal fisheries in South Western Waters (i.e. in Union waters of ICES divisions VIII, IX, X and CECAF areas 34.1.1, 34.1.2, 34.2.0). This discard plan was valid until 31 December 2018. On the basis of a new set of Joint Recommendations for the SWW submitted by the regional group of Member States this plan was updated by Commission Delegated Regulation (EU) 2016/2374. In 2017, a further set of Joint Recommendations has been submitted by the Member States. The main elements of these JR's and which of these have been assessed by EWG 17-03 are summarised in table 8.1.

Table 8.1 Main elements of the Joint Recommendations submitted for the SWW

Elements	Status	Section
De minimis		
Hake caught with trawls in directed fisheries in ICES subareas VIII and IX	Existing but re-assessed on basis of new information	Section 8.1.1
Common sole caught in gillnets and trammel nets in the Channel and the Celtic Sea	Existing and unchanged	Not assessed
Common sole caught with beam trawls and bottom trawls in directed fishery in ICES subareas VIIIa,b	Existing and unchanged	Not assessed
High Survivability		
Nephrops caught with trawls in ICES subareas VIII and IX	Existing but re-assessed on basis of new information	Section 8.2.1
Minimum conservation reference size		
Horse mackerel in ICES VIIIc and IXa	Existing and unchanged	Not assessed
Technical Conservation Measures		
None	NA	

8.1 SWW – Proposals for *de minimis* exemptions

A summary of the *de minimis* applications are given in Table 8.1.1.

Table 8.1.1 Summary of *de minimis* exemptions as submitted for the SWW (restricted to new or re-assessed exemptions)

Country	***Exemption applied for (species, area, gear type)****	***Fleet components analysed***						
		Species as bycatch or target in the LO	***Number of vessels subject to LO***	***Landings (by vessels subject to the LO)***	***Estimated discards****	***Estimated catch***	***Discard rate***	***Estimated de minimis volumes***
EWG 16-06 Spain (no data for other countries but research effort agreed between SP, FR and PT, and organized this way in the SWW technical group)	2016 trials Hake - pair bottom trawls with a mesh size of greater than 100mm in ICES divisions VIIIabde	Target	4 vessels unclear as to whether all vessels are subject to LO	1770t unclear if this relates only to these vessels	498t unclear if this relates only to these vessels	2268t unclear if this relates only to these vessels	22%	No estimate supplied
	2016 trials Hake – pair bottom trawlers with a mesh size of at least 55mm targeting pelagic and demersal species in ICES division VIIIc	Bycatch	Number of vessels not supplied	No data supplied	No data supplied	No data supplied	7% (when targeting blue whiting)	No estimate supplied
	2016 trials Hake – bottom trawlers with a mesh size of at least 70mm targeting demersal species in ICES divisions VIIIabde	Bycatch	7 vessels unclear as to whether all vessels are under the landing obligation	2558t unclear if this relates only to these vessels	3625t unclear if this relates only to these vessels	6183t unclear if this relates only to these vessels)	58%	No estimate supplied
	2016 trials Hake – bottom trawlers with a mesh size of at least 70mm targeting cephalopods and demersal species in ICES divisions VIIIabd	Bycatch	7 vessels	938t unclear if this relates only to these vessels	1386t unclear if this relates only to these vessels	2324t unclear if this relates only to these vessels	58%	No estimate supplied

EWG 17-03 Spain (no data for other countries but research effort agreed between SP, FR and PT, and organized this way in the SWW technical group)	2017 trials Otter bottom trawl targeting demersal species OTB_DEF_>=55	Bycatch	Unclear number of vessesls 12 fishing ports: Galicia (A Coruña, Burela, Celeiro, Corme, Marin, Muros, Muxia, Ribeira, Vigo), Asturias (Avilés, Gijón) and Cantabria	Not provided	Not provided	Not provided	**T90** 15% (loss of 6% commercial catches) (rates for other species provided)	No estimate supplied (6% requested)
	2017 trials OTB targeting pelagic and demersal species OTB_MPD_>=55	Bycatch	Unclear number of vessesls 12 fishing ports: Galicia (A Coruña, Burela, Celeiro, Corme, Marin, Muros, Muxia, Ribeira, Vigo), Asturias (Avilés, Gijón) and Cantabria	Not provided	Not provided	Not provided	**T0** 46% (loss of 7% commercial catches) (rates for other species provided) **T90** 52% (rates for other species provided)	No estimate supplied (6% requested)
	2017 trials Pair bottom trawl targeting pelagic and demersal species PTB_MDP_>=55	Bycatch	Unclear number of vessels 3 fishing ports in Galicia (Ribeira, Celeiro y Burela) and Asturias (Avilés)	Not provided	Not provided	Not provided	**T90** 33% (loss of 46% commercial catches) (rates for other species provided)	No estimate supplied (6% requested)
	2011-2013 trials Pair bottom trawl targeting hake in Div. VIIIabd PTB_DEF>70	Target	Not provided	Not provided	Not provided	Not provided	**TO** 7%	No estimate supplied (6% requested)

8.1.1 De minimis exemption of the landing obligation for hake caught by bottom trawlers in directed fisheries in ICES subareas VIII and IX

Background

The discard plan for SWW for 2016 contained in Regulation (EU) 2015/2439 contained a *de minimis* exemption for hake by vessels using trawls and seines targeting hake in ICES subareas VIII and IX. This was on the basis that that increasing selectivity in the fisheries concerned would lead to losses of marketable fish that would make the fisheries potentially uneconomic. The exemption allowed for discarding of up to a maximum of 7 % in 2017 and up to 6 % in 2018 of the total annual catches of hake in the respective fisheries. This exemption was granted with the proviso that additional discard data and any other relevant scientific information supporting the exemption should be provided to STECF for further evaluation in 2016.

STECF carried out an analysis of additional information duly supplied by the SWW Member States regional group in 2016 at EWG 16-06 and the STECF PLEN 16-02. On the basis of this evaluation the exemption was reconfirmed and included in Regulation (EU) 2016/2374 implementing the discard plan for SWW. However, STECF noted that the selectivity trials for hake had only been carried out in the most selective of the fleet involved and therefore requested that additional selectivity studies were conducted for the other fleets. In this regard new information supplied by the SWW Member States as required by Article 3(2) was duly assessed by EWG 17-03.

Basis for exemption

Three reports of hake selectivity studies carried out in Spain by IEO and AZTI were submitted by the SWW Member States groups (Valeiras, 2017; Anon., 2017a; Arregi et al. 2016). Given that the Portuguese catching hake are similar in most respects to the Spanish fisheries, no additional studies were carried out by Portugal. The JR reports that the Portuguese OTB fleets (OTB_DEF_55-59_0_0, OTB_DEF_60-69_0_0 and the very small component OTB_DEF_>=70_0_0 – collectively referred to as OTB_DEF_0_0_0 and OTB_CRU_0_0_0) operate much in the same way as the Spanish OTB_MPD_>=55_0_0. No information is provided for French fleets catching hake.

The studies supplied reported on a range of selectivity experiments carried out in several different Spanish fisheries and metiers:

1) Bottom otter trawls targeting demersal species with minimum mesh size of 55mm (OTB_DEF_>=55)

Trials were carried out using a T90 codend of 70mm mesh size in the OTB_DEF_>=55 fishery using the covered codend method. The results showed that a large proportion of fish below 20cm escaped through the T90 codend and were retained in the codend cover. An L50 of 21.73cm was recorded. Of the total hake catch 15% retained in the T90 codend were discards of fish below mcrs. Losses of marketable hake were only 5%. The report concludes that the use of a 70mm T90 codend in this fishery does improve selectivity without significant losses of marketable hake. No trials were carried out with standard gear to allow comparison of the existing and experimental gears.

2) Bottom otter trawls targeting mixed pelagic and demersal species with minimum mesh size of 55mm (OTB_MPD_>=55)

In a second set of trials a T90 codend was tested against a standard 70mm diamond mesh codend using the covered codend method in this fishery. The results showed that using the T90 codend increased the L50 for hake from 15.43cm with the standard codend to 17.19cm with the T90 codend. Discards of hake made up 52% of the total hake catches in the T90 codend compared to 46% with the standard codend. No losses of commercial hake were observed with either codend. Despite the improvement in L50 this trial showed no significant reduction in unwanted catches of hake compared to the standard codend.

3) Bottom pair trawls targeting mixed pelagic and demersal species with minimum mesh size of 55mm (PTB_MPD_>=55)

In this fishery a standard trawl with a 120mm square mesh panel was tested using a cover bag over placed over the square mesh panel. The results of this trial showed 33% of the total catch of hake was retained in the experimental trawl with losses of commercial hake observed to be 46%, indicating high losses of marketable fish using this gear option. Again no experiments with a standard codend were carried out so no comparison can be made between the standard gear and the experimental gear.

4) Pair bottom trawls targeting hake in ICES division VIIIc (PTB_DEF_>70)

A series of selectivity experiments were carried in this fishery by AZTI, which showed that discard rates of 7% are expected for this fishery with standard 70mm diamond mesh codends. The addition of square mesh panels of between 86-100mm increased selectivity but led to significant losses of marketable hake above mcrs. The report acknowledges square mesh panels as being an effective tool to increase selectivity but indicates that the mesh size of the square mesh panel should be reduced (~70mm). Information is also provided on a study on the mechanical behaviour of hake relative to the mesh geometry, which helps to illustrate ways of improving trawled gear selectivity.

In addition to the selectivity experiments, a study to assess the disproportionate costs of handling catches in the various mixed fisheries in SWW waters. This study showed that the number of hours worked on deck associated with handling fish that were previously discarded has increased significant since the introduction of the landing obligation.

EWG 17-03 Observations

EWG 17-03 observes that information is still missing in the documentation provided, in respect of number of vessels, catches, discards and *de minimis* volumes already recorded in relation to the different areas (and stocks). There is also only limited data provided for other fleets which have significant catches of hake (e.g. French vessels operating in the Bay of Biscay).

EWG 17-03 notes that a substantial amount of extra information for the fleets with the highest discard rates has been supplied to support this exemption and this has clarified some of the issues raised by STECF in 2016. However, in many of the experiments no data for the standard gear used currently in the fisheries was collected so it is difficult to provide any firm conclusions on whether increases in selectivity are very difficult to achieve or not. It would be useful to collect baseline selectivity data for the standard gears used in the fisheries as part of any future selectivity experiments.

EWG 17-03 recognises progress has being made towards increasing selectivity in the Spanish fisheries, but observes that the gear options tested to date appear to provide only marginal reductions in unwanted catches of hake. The results of the trials do indicate that losses of other commercial species may be significant with some of the gear options tested and therefore further work with T90 codends and square mesh panels is encouraged to find appropriate gears in these fisheries.

EWG 17-03 observes that even with a *de minimis* exemption there will still be a requirement to reduce discards further for whiting and the costs incurred by the rest of the unwanted catch that will be landed and counted against quota may provide an incentive to increase selectivity in the short-term.

EWG 17-03 recognises that the study on disproportionate costs does demonstrate the additional workload created by the landing obligation in one particular fleet segment. However, EWG 17-03 is unable to assess whether the increased time (as effort or workload) observed represent a disproportionate cost for the fisheries covered by this exemption.

EWG 17-03 concludes that a significant amount of new information has been provided to support this exemption which to some extent addresses the comments raised by STECF in 2016. However, the lack of baseline selectivity data for the current regulatory gears makes it difficult to assess the positives in terms of improved selectivity and the negatives in relation to losses of marketable catches associated with the gear changes. Based on the results of the trials and the nature of the fisheries (i.e. large number of species) the indications are that increasing selectivity in these fisheries is difficult to achieve. Nonetheless further experimentation should be encouraged to assess whether this is the case and also to test other gear options that could improve selectivity in the fisheries.

8.2 SWW- Proposals for survivability exemptions

A summary of the high survivability applications are given in Table 8.2.1.

Table 8.2.1 Summary of high survivability exemptions submitted as part of the SWW Joint Recommendations (restricted to new or re-assessed exemptions)

Country	*Exemption applied for (species, area, gear type)**	*Fishery Description (mesh size + area)*	*Number of vessels subject to the LO*	*Landings (by LO subject Vessels)*	*Estimated Discards**	*Estimated Catch*	*Discard Rate*	*Estimated discard survival rate from provided studies*
FR	*Nephrops* in ICES divisions VIII a and b, FU23-24, OTB, OTT	Target	Not provided The maximum number of licenses in the fishery is 232	2380t in 2013 for the whole fishery	1520t in 2013	3900t in 2013	39%	50%
PT	*Nephrops* in ICES divisions IX a, FU28-29 , OTB	Target	Not provided 8 vessels exclusively involved in the fishery in 2013 plus undefined number of other vessels which conducted operations in this metier alternating with others	209t in 2013 for the whole fishery	3t	212t	1%	unknown

8.2.1 High survivability exemption for Nephrops caught with trawls in ICES subareas VIII and IX

Background

This high survival exemption for trawl caught *Nephrops* in the fisheries in ICES subareas VIII and IX was first proposed in 2015. Following an evaluation by STECF it was included under Article 2 of REGULATION (EU) 2015/2439 with the proviso that Member States should provide additional scientific information to support the exemption during 2016. In particular STECF identified that the observation period to assess mortality was too short to allow for a conclusive estimate of captive survival. STECF advised that further experiments with extended observation periods (10-15 days) would be required to provide a more robust estimate of captive discard survival.

Additional information was duly supplied and assessed by STECF EWG 16-10 and also during STECF PLEN 16-02. STECF PLEN 16-02 concluded that the information provided largely addressed the issues raised by EWGs 15-10 and 16-06. Preliminary results from survival experiments carried out in April 2016 showed survival rates of 41% if handled and sorted as per normal practises and 46% if the improved catch handling equipment is used. Further studies were planned and expected to provide further information on likely survival rates. Consequently, a decision was taken to roll over the survival exemption as per 2015 and include it in the revised discard plan under Regulation (EU) 2016/2374, with a condition of submission of additional scientific information supporting provided in 2017. On the basis of additional information supplied, EWG 17-03 carried out a further evaluation of this exemption.

Basis for exemption

The JR seeks an exemption from the landing obligation for high survivability to be applied to *Nephrops* caught by trawls in ICES subareas VIII and IX. The joint recommendation refers to the fisheries conducted in several functional units of ICES subareas VIII and IX. EWG 17-03 notes that there are two Functional Units in ICES Division VIIIa,b: FU 23 (Bay of Biscay North) and FU 24 (Bay of Biscay South). There are two Functional Units in Division VIIIc: FU 25 (North Galicia) and FU 31 (Cantabrian Sea) and five Functional Units in Div. IXa: FU 26 (West Galicia); FU 27 (North Portugal); FU 28 (Alentejo, Southwest Portugal); FU 29 (Algarve, South Portugal) and FU 30 (Gulf of Cádiz).

Prior to STECF EWG 17-03 the SWW regional group submitted additional information on the experiments, project SURTINE (Mérillet et al., 2017), referred to in STECF 16-10 and STECF PLEN 16-02. An assessment of the evidence was completed by EWG 17-03. This included a descriptive

assessment and the application of critical review questions which have been devised by the ICES Methods to Estimate Discard Survival Workshop (ICES WKMEDS) to assess the quality of discard survival studies (Annex 4).

The *Nephrops* discard survival experiments were delivered to a scientifically robust design, utilising the guidance and advice from ICEs WKMEDS. The method of captive observation was applied, whereby, samples of *Nephrops* were taken at the point of discarding, kept in holding tanks, on the vessels and then ashore, and their fate recorded during a period of monitoring. Samples were collected from two vessels operating in the north of Bay of Biscay, at three seasonal periods (spring, summer and autumn) in 2016, which correspond to the main fishing period (March and September). For each season, 2 days of fishing were conducted and samples of *Nephrops* taken for monitoring from 15 hauls in total.

The SURTINE project report states that, in order to renew the exemption for 2017, the European Commission recommended that "the necessary measures to increase the survival of *Nephrops* be taken on board the ships". In response to this recommendation, the professional fishermen in the Bay of Biscay suggested a chute system to be implemented during the sorting process designed to reduce crushing and *Nephrops* time exposure to air. Equipping ships with these chute systems became mandatory from 1st January 2017 under the terms of the Order of 27 May 2016 (MEEDE 2016). To assess the benefits of the new sorting system, the survival estimates were generated for both sorting methods: (1) standard method of releasing discards at the end of the sorting process and (2) removing the discards gradually during the sorting process using a chute system.

To inform on any experimental induced mortality, healthy control specimens sourced from short tows of around 1 hour, were collected and held for 7-14 days before their fate was monitored against the treatment specimens. The monitoring period was 14 days, and sufficiently long to observe all, or almost all, of the mortalities associated with the catch and sorting process (in spring the mortalities appear to have slowed but not ceased). The derived survival rates were calculated as 36.9% (20.9-52.9%) for individuals sorted with the "standard" process and 51.2% (30.9-71.5%) for individuals sorted with the "chute system" scenario (Figure 8.2.1.1).

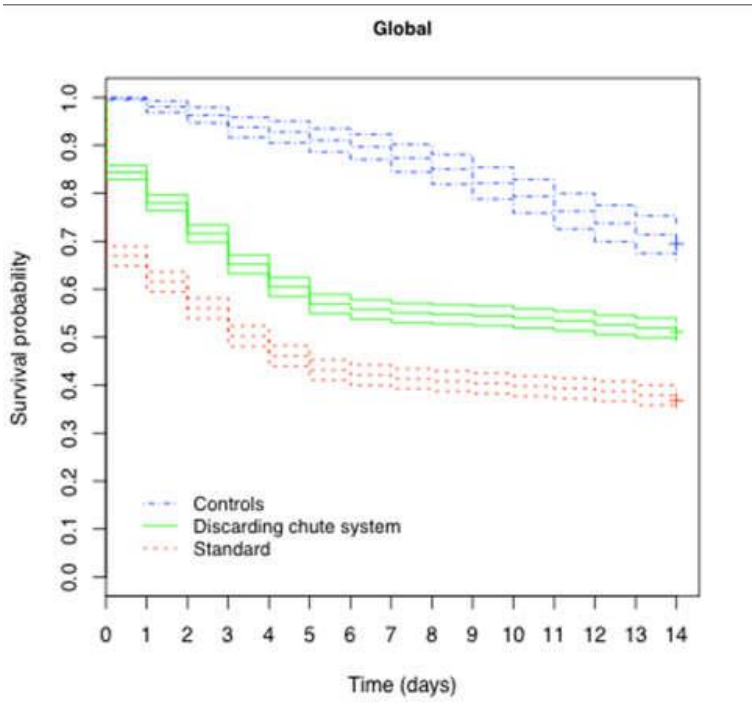

Figure 8.2.1.1 Combined estimation of the probability of *Nephrops* discard survival derived from monitoring in holding tanks (Mérillet et al., 2017)

Some differences in survival were identified between seasons, mostly lower survival in spring (Table 8.2.1.1). Temperature has been identified as an important variable influencing survival of *Nephrops*, however, in this study the temperature variation was not great; seabed temperature ~11C in all seasons and air temperature ranging from 11.4-16.5C across seasons. It is difficult to disentangle the influences of environmental, technical and biological variables which may account

for these differences. There were also differences in the survival of the control specimens, the data indicate increasing mortality with time in some controls, which may indicate some experimental induced mortality, although the treatment specimens demonstrated a slowing of mortality over time.

Table 8.2.1.1 Summary of the survival rates and probabilities on Day 14 observed at the end of the monitoring in tanks with confidence intervals (Mérillet et al., 2017)

	Survival rate			Probabilities of survival (Kaplan Meier)		
	Standard	Chute system	Control	Standard	Chute system	Control
Spring	35,4% [15,3 ;55,5]	42,3% [26,6 ;57,9]	86,3%	0,35 [0,33 ;0,37]	0,42 [0,40 ;0,44]	0,87 [0,83 ;0,89]
Summer	36,4% [30,3 ;42,5]	56,5% [49,2 ;63,7]	61,8% [58,8 ;64,8]	0,36 [0,35 ;0,38]	0,57 [0,55 ;0,58]	0,61 [0,58 ;0,64]
Autumn	39,2% [17,5 ;60,9]	54,9% [31,5 ;78,3]	69,5%	0,39 [0,37 ;0,41]	0,55 [0,53 ;0,56]	0,70 [0,66 ;0,74]

Estimating discard survival is challenging, but the latest techniques are applied to give estimates that are robust given current knowledge (Table 8.2.1.1). There may be some experimental induced mortality which would mean the treatments results underestimate survival, but also, because predation is not included with this method, survival may be over-estimated. A key issue for *Nephrops* discard survival is the location where the discarding occurs. *Nephrops* associate with specific seabed habitats of mud and sandy-mud into which they construct burrows. Therefore, *Nephrops* must be discarded back to suitable habitats in order to survive. The report does not provide information on where the discarding occurs, or how extensive and homogenous the suitable seabed type is where discarding occurs.

EWG 17-03 Observations

EWG 17-03 notes that the information on the fisheries provided as supporting information for the exemption cover only four FUs (23, 24, 28 and 29). Furthermore, the statistics provided (number of vessels, catches, landings and discards) concerns the overall fishing activity for in each of those FUs and it is not clear if this also correspond to the fraction of the fishery subject to the landing obligation. On average, the supporting documents estimate discard rates of the French trawlers targeting *Nephrops* in FU23-24 around 35-40% in recent years while in the Portuguese fishery, the discard rate is negligible (around 1%).

EWG 17-03 notes that detailed fleet descriptions are provided for French and Portuguese fleets. There are up to 232 French and eight Portuguese vessels that fall under the existing exemption. However, EWG 17-03 points out that that there are other relevant fleets, notably Spanish, for which no information was provided. Therefore, the full scope of fisheries to which the exemption could apply is currently not known.

There are nine *Nephrops* Functional Units in the area for which this exemption applies. The support for continuing the exemption assumes that environmental, technical and biological factors that influence discard survival are consistent across all areas. EWG 17-03 observes that to evaluate the appropriateness of this extrapolation, it is necessary to have all fishery descriptions, and also information on the gears used, operational methods, prevailing environmental conditions and catch patterns from all of the FUs.

EWG 17-03 concludes that the latest evidence requested and provided to support an existing exemption on the survival of discarded *Nephrops* provide robust scientific estimates of discard survival. The derived survival rates were calculated as 36.9% (20.9-52.9%) for individuals with the "standard" sorting process and 51.2% (30.9-71.5%) for individuals sorted with the "chute system". These survival estimates should be interpreted as the minimum discard survival estimates that do not account for induced experimental mortality, and exclude marine predation. There is a difference between the two sorting methods, whereby using the new chute system improves the survival chances of *Nephrops* by around 15%. The chute sorting system is now mandatory for the French fleet.

9 BALTIC - OVERVIEW OF JOINT RECOMMENDATIONS

Commission Delegated Regulation (EU) 1396/2014 established a discard plan for fisheries in the Baltic Sea. This discard plan is valid until 31 December 2017 after which it is assumed most of the elements of this discard plan will be subsumed into the multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea - Regulation (EU) 2016/1139 as per Article 7 of this Regulation. In 2017 a new set of joint recommendations has been submitted by the Member States in the Baltic. The main elements of the JR and which of these have been assessed by EWG 17-03 are summarised in table 9.1.

Table 9.1 Main elements of the Joint Recommendations submitted for the Baltic

Elements	Status	Section
De minimis		
None	NA	
High Survivability		
Cod, plaice and salmon caught with trap-nets, creels/pots, fyke-nets and pound net	Existing but revised* (inclusion of plaice)	9.1.1
Minimum conservation reference size		
Baltic Cod	Existing and unchanged	
Technical Conservation Measures		
Modifications to T90 codend	New*	9.2

9.1 Baltic - Proposals for survivability exemptions

A summary of the high survivability applications are given in Table 9.1.1.

Table 9.1.1 Summary of high survivability exemptions submitted as part of the Baltic Sea Joint Recommendations (restricted to new or re-assessed exemptions)

Country	*Exemption applied for (species, area, gear type)**	*Fishery Description (mesh size + area)*	*Number of vessels subject to the LO*	*Landings (by LO subject Vessels)*	*Estimated Discards**	*Estimated Catch*	*Discard Rate*	*Estimated discard survival rate from provided studies*
DE	Plaice in trap-nets, creels/pots, fyke-nets and pound nets (FPN, FPO, FYK) in subdivisions 22-32	Bycatch	4*	not clearly stated	not clearly stated	not clearly stated	79%	90%

9.1.1 High survivability exemption for cod, plaice and salmon caught with trap-nets, creels/pots, fyke-nets and pound net in the Baltic

Background

The JR includes a proposal to add plaice to the current survival exemption for cod and salmon in the Baltic Sea discard plan included under Article 2 of Regulation (EU) 1396/2014. The exemption applies to catches of cod, salmon and plaice caught with trap-nets, creels/pots, fyke-nets and pound nets. Undersized specimen and catches without quota allocation of these species caught with these gears must be released back into the sea."

Basis for the exemption

The supporting information provided describes the pound nets commonly used in the Baltic. Pound-nets are fixed gears fished at shallow depths (3-5m) and used to catch eel, demersal fish or herring. There are known by-catches of a number of other species in this area. Plaice and mackerel are the only quota species among the bycatch. German observer data indicates that

plaice catches in this fishery is modest; many observed hauls have zero catches of plaice. Small individuals dominate plaice catches and the estimated discard rate in this gear is estimated to be 79%. Reported landings of plaice from pound nets are small and contributed to about 0.6% to the total landings by Germany and 0.1% of the total landings of plaice in the Baltic as a whole.

The justification for the survival exemption is based on a study from 2014-2015 aimed at estimating discard survival for cod and flounder but where a few plaice also were caught and monitored. The captive observation study lasted for 4-8 days and 9 out of 10 plaice survived. The supporting information further states that in most fisheries, the variability of survival of discarded fish is high and depends on, inter alia, water temperature, towing or soaking duration and species composition in the catch, and therefore strongly recommend using the exemption from the landing obligation on the basis of high survival rates only in well-defined circumstances, as is the case here.

EWG 17-03 Observations

EWG 17-03 notes that the evidence provided seems focused on pound-nets used by four German fishermen in the western Baltic (subdivisions 22 and 24). However, EWG 17-03 is aware that the use of the gear types proposed in the exemption request is widespread, the gears used by many fishermen in several other Baltic countries and also in areas outside subdivisions 22 and 24 (used to catch salmon, eel, herring, whitefish and cod among other species). Therefore EWG 17-03 observes that more information of the characteristics of all relevant fisheries in all countries is needed in order to assess this exemption request fully.

Regarding the reported survival estimate EWG 17-03 notes that the sample size is small and that the observation time is likely not long enough for the mortality to reach asymptote. Little detail is provided on the methods used and EWG 17-03 encourages that more detailed information is provided in order to be able to better assess the representativeness and quality of the discard survival estimate. However, EWG 17-03 notes that, pots and traps attract, collect and hold catches alive until hauling and therefore mortality of discarded catch is likely to be very low.

EWG 17-03 reiterates the response made by STECF (PLEN 14-02), on the original exemption request to exclude cod and salmon caught in traps and pots from the landing obligation on the basis of high survival. They considered it reasonable to assume that mortality in the catching phase for these gears is low but ideally more work was needed to confirm whether this assumption is valid. Apart from potential mortality caused during the catching phase, survival of discarded fish will also depend on handling and release practices after sorting on-board. STECF (PLEN 14-02) therefore noted that more work of such practices would is informative.

EWG 17-03 concludes that, while noting the missing information and weaknesses in the experiments used to support the exemption request, the overall quantities of fish associated with the proposed exemption are likely to be negligible. Therefore given the gear type is relatively benign and provided discarding under the exemption is monitored, the impact is likely to be minimal.

9.2 Baltic Sea - Proposals for changes to technical measures

Background

The JR states that scientific trials conducted in the Baltic Sea cod fishery have demonstrated that a modified T90 gear gave better size selectivity than the standard codend for T90 allowed for the current Baltic Sea Technical Measures Regulations – Regulation 2187/2005. On this basis and In accordance with Article 8 (1) (b) in the Multiannual plan for the Baltic Sea, the BALTFISH group recommend in the JR that this modified gear be allowed by way of derogation to the existing regulations as an alternative to the current regulated gears. The JR provides a suggested wording for the definition of the modified gear.

Basis of Proposal

The alternative gear proposed by BALTFISH involves reducing mesh size and modifying the codend construction by increasing the codend circumference and length of a baseline gear. The differences between the modified gear and the current regulated gear is summarised in table 9.2.1.

Table 9.2.1 Sumamry fo parameters of current Regulation gear and the modified gear tested

Specification	Existing	Modified
Codend Mesh Size	At least 120mm	At least 115mm
Codend Circumference	No more than 50 meshes	No more than 80 meshes
Twine thickness	4mm double or 6mm single	4mm double or 6mm single
Codend length	At least 6m	At least 9m

The proposal to adopt this gear is supported by results from two separate catch comparison experiments testing the modified T90 codend against a standard regulation T90 codend. The twin-trawl method was used and the relative difference in catch across length classes was measured (Anon. 2017b).

The results of both of the supporting studies were consistent and showed the alternative gear caught significantly less small cod below MCRS and more cod larger than MCRS. This indicates that the size selectivity of the modified codend arrangement is higher than the current regulated gear although as acknowledged in the report of the trials this is based on relative rather than absolute selectivity. The researchers conclude that the results (less cod just below MCRS and more cod just above the 50% retention length L50) indicate that at least a reduced selection range with the modified codend.

EWG 17-03 observations

On assessment EWG 17-03 observes that while the results from the experiments are robust and consistent they are counter intuitive to what might be expected (i.e. that reducing the mesh size and increasing codend circumference would decrease rather than increase selectivity). The researchers acknowledge this in their report. EWG 17-03 also notes that there were subtle differences in the experimental set up, codends tested and methodology between the two trials. In particular:

- Differences in the codend mesh sizes of both the control and modified codends between the two experiments (i.e. 118mm vs 115mm for the modified and 126mm vs 121 mm for the control)
- Differences in the material used for the control codends. In the 1st experiment a nylon codend was used while in the second a polyethylene codend was tested.
- The codends were switched between port and starboard in only one of the two experiments to remove bias.
- Differences in catch sizes between the two experiments.

EWG 17-03 suggests there are several possible explanations for the observed results. One is that the variability between individual experimental results is often significant in selectivity studies (including catch comparison experiments) and therefore the new study simply provides an unexpected result that, however, still remained within normal between-study variation that might reasonably be expected. Another possible explanation is that a combination of the factors outlined above and other (uncontrolled) factors have influenced the outcome (e.g. different population size structure, other trawl design differences or changed fish condition). EWG 17-03 has no evidence to support that there is a particular reason or combination of reasons for the increased selectivity of the modified codend.

EWG 17-03 conclude that the results show the modified codend to provide positive benefits in terms of reducing unwanted catches of cod below mcrs. Further testing, though is required to demonstrate concretely that this result is valid. Therefore EWG 17-03 suggests that if the derogation to allow the use of this modified gear is granted then it should be conditional on further experimentation. In this regard EWG 17-03 would advise that selectivity experiments to determine the absolute selectivity of the modified codend compared to the standard gear should be carried out in addition monitoring of catch composition through observer coverage of vessels using the modified gears.

10 MEDITERRANEAN - OVERVIEW OF JOINT RECOMMENDATIONS

Commission Delegated Regulation (EU) 2017/86 established a discard plan for certain demersal fisheries in the in the Adriatic Sea, the south-eastern Mediterranean Sea and the western Mediterranean Sea. This discard plan is valid until 31 December 2019. It covers demersal fisheries for sole, hake, scallop, Venus shells, carpet shells, red mullet and deep-water rose shrimp. In 2017, the PESCAMED group of Member States from the western Mediterranean submitted a new set of joint recommendations. The main elements of the existing discard plan and the new JRs and which of these have been assessed by EWG 17-03 are summarised in table 10.1.

Table 10.1 Main elements of the Joint Recommendations submitted for the Mediterranean

Elements	Status	Section
De minimis		
Hake and red mullet by vessels using trawl nets in the Western Mediterranean	Existing and unchanged	Not assessed
Hake and red mullet by vessels using gillnets in the Western Mediterranean	Existing and unchanged	Not assessed
Hake and red mullet using trawls in the Adriatic	Existing and unchanged	Not assessed
Hake and red mullet using gillnets in the Adriatic	Existing and unchanged	Not assessed
Hake and red mullet using rapido (beam trawls) in the Adriatic	Existing and unchanged	Not assessed
Common sole using trawl nets in the Adriatic	Existing and unchanged	Not assessed
Common sole using gillnets in the Adriatic	Existing and unchanged	Not assessed
Hake and red mullet by vessels using trawl nets in the south-eastern Mediterranean	Existing and unchanged	Not assessed
Hake and red mullet by vessels using gillnets in the south eastern Mediterranean	Existing and unchanged	Not assessed
Deep-water rose shrimp in the south eastern Mediterranean	Existing and unchanged	Not assessed
High Survivability		
Scallop caught with mechanised dredges in GSAs 1, 2, 5 and 6;	Existing but new information requested	Section 10.1.1
Carpet clams caught with mechanised dredges in GSAs 1, 2, 5 and 6	Existing but new information requested	Section 10.1.1
Venus shells caught with mechanised dredges in GSAs 1, 2, 5 and 6	Existing but new information requested	Section 10.1.1
Common sole) caught with rapido (beam trawl in GSAs 17 and 18	Existing but new information requested	Section 10.1.2
Norway lobster caught by bottom trawls in GSA 1, 2, 5, 6, 7, 8, 9, 10, 11.1, 11.2, 12	New	Section 10.1.3
Minimum conservation reference size		
None	NA	

Technical Conservation Measures		
None	NA	

10.1 Mediterranean - Proposals for survivability exemptions

A summary of the high survivability applications are given in Table 10.1.1.

Table 10.1.1 Summary of high survivability exemptions submitted as part of the Mediterranean Joint Recommendations (restricted to new or re-assessed exemptions)

Country	*Exemption applied for (species, area, gear type)**	*Fishery Description (mesh size + area)*	*Number of vessels subject to the LO*	*Landings (by LO subject Vessels)*	*Estimated Discards**	*Estimated Catch*	*Discard Rate*	*Estimated discard survival rate from provided studies*
Spain, France, Italy	Norway lobster	target	unknown	unknown	unknown	unknown	unknown	- Winter 74% - Spring 36% - Summer 6%

10.1.1 High survivability exemptions for scallop, Venus shells and carpet clams caught with mechanised dredges in the western Mediterranean

Background

Commission Delegated Regulation (EU) 2017/86 establishing a discard plan for certain demersal fisheries in the Mediterranean Sea, includes exemptions on the basis of high survivability for scallop, carpet clams and Venus shells caught with mechanised dredges. As no conclusive evidences on the survival rates of these species was provide in 2016, the survivability exemption was included with the proviso that during 2017 the Member States concerned should submit additional discard data and any other relevant scientific information supporting the exemption to allow STECF to assess fully the justification for the exemption.

In 2017 as part of a new JR for the western Mediterranean, the Pescamed regional group requested that these exemptions should continue to apply. No additional data or other relevant scientific information supporting the exemptions was provided. However, in correspondence to the Commission, Pescamed indicated that as these bivalve molluscs have a specific Italian regulation of commercialisation which states that such molluscs have to be landed alive. Pescamed argue that the presence of this legislation shows that such bivalve molluscs have high survivability and stress resistance to being out of water for long periods.

EWG 17-03 observations

No documentation has been supplied to EWG 17-03 so no assessment has been carried out. In addition EWG 17-03 does not consider the commercialisation regulation as relevant in justifying this exemption, as the regulation relates to landed rather than discarded molluscs.

In order to assist the Pescamed group, EWG 17-03 has identified two studies/publications that could be useful as supporting information as follows:

- A study by Moschino et al. (2003) provides some information on survivability of Venus clams.
- A review of the survival of discard survival rates completed for the Commission in 2012 contains some information on the survivability of Atlantic scallop (*Pecten maximus*) which would be similar to Mediterranean scallop.

EWG 17-03 also notes that further survivability experiments in the Mediterranean are in progress in the framework of the Minouw Project (http://minouw.icm.csic.es/), including the following case studies: bottom trawl fishery in the Catalan and Aegean Seas, purse seine for small pelagics in

Algarve, set nets fisheries in the Balearic Islands and in the Ligurian and Northern Tyrrhenian Seas, boat seine net fishery in the Balearic Islands.

10.1.2 High survivability exemption for common sole) caught with rapido (beam trawl) in GSAs 17 and 18

Commission Delegated Regulation (EU) 2017/86 also includes an exemption on the basis of high survivability for common sole caught with rapido trawls in the Adriatic Sea. As for the bivalve molluscs this exemption was granted for one year on the proviso that the Member States concerned in the fishery should submit relevant data to the Commission to allow STECF to further assess the justifications for this exemption. However, no such information has been provided so EWG 17-03 is unable to carry out an evaluation.

EWG 17-03 does note that survivability studies for the common sole in the GSA 17 are in progress in the framework of the SOLEMON survey, which is carried out by the CNR-ISMAR (Ancona, Italy). Other published studies on the survivability of this species in other areas are available in the review referred to above. Both of these studies may provide supporting information for the requested exemption.

10.1.3 High survivability exemption for Nephrops caught with trawls in the western Mediterranean

Background

The JR from the Pescamed group requests an exemption on the basis of high survivability for *Nephrops* caught by bottom trawls. This is a new exemption. The Pescamed group provided a report of survivability experiments carried out as part of the EU funded Minouw project - "Survival of discarded *N. norvegicus* from the Catalan Sea bottom trawl fishery" (García de Vinuesa et al. 2017). EWG 17-03 have evaluated this study.

Basis for exemption

Nephrops were sampled from 10 hauls carried out from May 2016 to January 2017 on the fishing grounds adjacent to Blanes (Catalan Sea; Western Mediterranean), in depths ranging from250 and 450 m. The 10 hauls were seasonally distributed with 4 in winter, 3 in spring and 3 in summer. The towing durations ranged between 120 and 376 minutes. Sampling of the animals was conducted during the first ten minutes after the catch was brought on board. The sample size was constrained to the number of animals (approximately 100 by haul) that could be held in a holding tank filled with surface sea water. A total of 1100 individuals (all seasons) were sampled. The vitality of each individual Norway lobster was recorded using a categorical vitality assessment (CVA) method (ICES, 2016). This assessment uses behavioural indicators and the presence of injuries to determine the vitality status of each animal with respect to one of four categories: 1 (excellent), 2 (good), 3 (poor) or 4 (dying or dead). Immediately after the catch was on board, animals were transferred into a plastic holding tank containing surface sea water and then they were transported to the laboratory. Eight assessments were conducted with a periodicity of 12 hours, up to 96 hours of the observation period. Later, three assessments were taken after 1 week, 1.5 weeks and 2 weeks from the start of the experiment.

This assessment (Figure 10.1.3.1) observed high survival rates for *Nephrops norvegicus* discarded in winter (January; mean: 0.739; CI: 0.699-0.781) but significantly lower survival was observed during spring (May; mean: 0.357; CI: 0.309-0.412) and summer (August; mean: 0.0575; CI: 0.0367-0.0901). It is uncertain whether this is a true seasonal effect or whether it has been biased by elevated water temperatures in the holding tanks during collection and transfer. Analyses of the vitality states of animals in this study suggest that such assessments could be useful predictors of mortality rates for discarded *N. norvegicus*. However, the authors of the report conclude that further studies are needed to verify this.

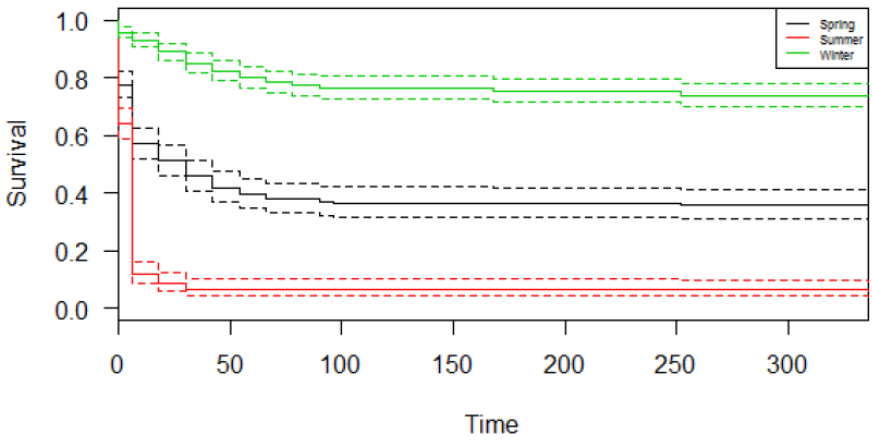

Figure 10.1.3.1 Kaplan-Meier survival curves for *Nephrops norvegicus* by season

(Source: Deliverable 2.16 of Minouw EU H2020 Project)

EWG 17-03 additionally carried out a qualitative assessment of the Minouw study and has applied the critical review questions devised by WKMEDS, in order to assess the quality of the discard survival studies completed. The summary of this assessment is provided in Annex 5.

EWG 17-03 Observations

EWG 17-03 recognises that this study is one of the first analyses of the survival rates of discarded species in the Mediterranean, and therefore the results are innovative and provide a basis for scientific advice on the survivability of this species in the framework of the landing obligation.

EWG 17-03 observes that the study shows significantly higher survival rates in winter than in spring and summer. This seasonal pattern is strongly influenced by the handling procedures onboard, which also affects the survivability rate. The report emphasizes the need for rapid sorting and return to the sea of any discarded animals. EWG 17-03 infers from the results of this study that *Nephrops* could be returned to sea in winter, and possibly in spring if the handling procedures follow the advice given in the report.

EWG 17-03 notes that the results of this experiment only refer to a sample of *Nephrops* sorted during the first ten minutes after the catch arrived on board. The sorting time during the commercial fishing operations takes much longer, whereby the survival rates should be lower under commercial conditions than those obtained in this study. Hence, EWG 17-03 suggests that more scientific studies are needed to improve the knowledge on survivability expanding the sorting time to mirror the commercial conditions.

EWG 17-03 notes that it is unclear which fleets this exemption would apply as only limited information is provided relating to the fleets concerned.

EWG 17-03 concludes that the evidence provided to support this exemption on the survival of discarded *Nephrops* provide robust scientific estimates of discard survival. Further experiments to measure the effect of sorting time would be useful.

11 Black Sea - Overview of Joint Recommendations

Commission Delegated Regulation (EU) 2017/87 established a discard plan for turbot fisheries in the Black Sea. This discard plan is valid until 31 December 2019 and includes an exemption on the basis of high survivability for turbot caught in bottom set gillnets. This exemption was granted for one year on the provision that the Member States concerned in the fishery should submit relevant data to the Commission to allow STECF to further assess the justifications for this exemption. However, no information has been provided so EWG 17-03 is unable to carry out an evaluation.

12 PELAGIC FISHERIES - OVERVIEW OF JOINT RECOMMENDATIONS

JR's covering pelagic fisheries in the North Sea, NWW, SWW and for the Mediterranean were submitted by the respective Member States groups. EWG 17-03 was requested by the Commission to screen these new JR's and to identify any differences in respect of the existing discard plans. By and large the JR's, including the JR received from the Mediterranean contain the same elements as the existing plans. Therefore EWG 17-03 did not evaluate these JRs accept for the changes described in sections 12.1, 12.2 and 12.3.

12.1 De minimis exemption to the landing obligation for artisanal pelagic trawl fisheries using OTM and PTM in ICES sea area IV b,c and VIId

Background

The new JR's for pelagic fisheries from the Scheveningen group (North Sea) and NWW group of Member States request a *de minimis* exemption for catches of mackerel, horse mackerel, herring and whiting, using OTM in ICES area IV b,c south of 54°N and VIId and to extend this to include PTM gear. The exemption covers up to a maximum of 1% in 2018, 2019 and 2020 of the total annual catch of those species for artisanal pelagic trawlers operating in this area. This is a continuation of an existing exemption for OTM gear in ICES area VIId currently included under Article 3 of Regulation (EU) No. 1395/2014 (North Sea) and Article 3 (c) of Regulation (EU) No. 1393/2014 (NWW). These Regulations apply until 31 December 2017.

This request is made both on the basis of technical difficulties with improving selectivity and on disproportionate costs of handling unwanted catches.

Basis for the exemption

The justification for this exemption is largely the same as the original request. The exemption is based on the French fleet and the JR states that it should apply equally to the small number of vessels from other Member States that fish for the same species in the same areas and in the same way. No information is provided on the vessels of other Member States.

The relevant annex supporting this exemption in the JR characterises the fishery as a mixed fishery as during the same fishing trip, both OTM and OTB (Bottom otter trawl) may be used. The JR includes a description of the French fleet using OTM, OTB and PTM in the south of the Northern Sea (ICES Division IVc, IVb) and through the eastern Channel (ICES Division VIId). The fleet comprises 106 vessels up to 25m LOA. The JR states that only fishing operations using OTM or PTM gears would be covered by this *de minimis* exemption. There is no disaggregated information on the number of vessels utilising OTM/OTB gears or PTM gears.

The JR states that a 1% *de minimis* would offer the flexibility needed to deal with the variability of catch composition depending on fishing operation. That 1% was estimated on minimis volume of 86.62 tons for the French fleet. However according to available data, estimates of total discards raised to 1602 tons (10.4% catch), of which 40% comprises horse mackerel. No PTM catch data or PTM discard estimates are supplied.

For whiting, discarding is mainly due to catches of whiting below 27 cm and it is difficult to avoid such catches with a mesh size less than 70 mm. No new information is presented to demonstrate that increases in selectivity to avoid whiting catches are in fact difficult to achieve.

According to the supporting information mackerel and herring discards in the last years were mainly due to quota limitations and/or the difference in MLS between IV (30 cm) and VII (20 cm) and the JR suggests that harmonising the minimum size in both areas to 20cm would help reduce unwanted catch of undersized mackerel for the fishery. For horse mackerel discarding represents only a small percentage of the catches and appears to be due to a lack of market. The JR indicates that increases in selectivity to reduce these discards are difficult to achieve in practice. Some discarding arises because of mechanical damage incurred in the fishing operation. The JR indicates that few solutions to reduce such discards currently exist especially in terms of selectivity.

The JR comments "the rather clean nature of small pelagic fisheries may explain why there has been only limited development and research effort directed to increasing selectivity in pelagic trawl fisheries within the ICES community." It also refers to some selectivity studies from the 90s concluding they have not yet shown any conclusive results (Casey et al, 1992; Suuronen, 1991;

Suuronen et al, 1996; van Marlen et al, 1994). These studies were not referred to in the 2014 JR which was the original basis for this exemption.

EWG 17-03 observations

EWG 17-03 acknowledges the effort carried out by the French observer programme (ObsMer) to collect data for that mixed fishery (OTM/OTB). In 2015, 39 fishing trips and 106 fishing operations on pelagic trawlers were monitored. However, results presented here include OTB fishing trips and OTB fishing operations. No disaggregated discard estimates for OTB were provided to EWG 17-03 making any analysis difficult. EWG 17-03 also notes that the JR includes the fishery for small pelagics using midwater pair trawl (PTM), despite the fact that only information for combined OTM and OTB on French observer programme (ObsMer) is provided.

EWG 17-03 re-iterates the original advice from STECF PLEN 14-02 that from the information presented it is not possible to precisely identify which vessels or trips would be subject to a *de minimis* exemption or whether it is intended that the exemption would apply to specific fishing operations carried out in the course of any given fishing trip. It appears that the exemption is being sought for less than 25m (LOA) vessels that carry both midwater trawls (OTM and PTM) and bottom trawls (OTB) but only for trips or fishing operations that deploy midwater trawls, but this needs further clarification. Furthermore, it also appears that if a vessel deploys both bottom trawls and midwater trawls on the same fishing trip, then that trip would be considered a mixed fishery trip, not subject to this exemption and possibly still not affected from the landing obligation for demersal fisheries. Hence, it is unclear to EWG 17-03 when vessels would be subject to either the demersal or pelagic landing obligation. This will change from 1 January 2019 when all catches will be subject to the landing obligation and this difficulty will be removed.

EWG 17-03 notes that the numbers of French vessels which would be covered by this exemption is an increase relative to the 78 French vessels stated in the 2014 JR. It is not clear if this increase is due to an overall increase in the size of this fleet or to the inclusion of the PTM gear type.

EWG 17-03 notes that the JR suggests harmonising the minimum size of mackerel to 20cm would increase the proportion of any mackerel caught in subarea IVb,c and VIId that could be landed and sold for human consumption. However, it remains unclear whether such catches would in fact be wanted, since quota limitations are also identified as one of the main reasons why discarding currently occurs. It is unclear to EWG 17-03 whether this statement constitutes a proposal to set the minimum conservation reference size for mackerel at 20 cm or whether it is merely an observation.

EWG 17-03 notes that even with a 1% exemption, at the current discard rates, a significant amount of the catch will still be unwanted and will have to be sorted, handled and stored on board. EWG 17-03 is unable to assess whether this additional time represents a disproportionate cost but notes that the recent French EODE project (Balazuc et al., 2016) does attempt to evaluate the economic impact of a full landing obligation. This study shows that due to the limited hold capacity on relevant vessels, the full application of the landing obligation would result in the hold filling more quickly and with a significant proportion of undersized fish that cannot be avoided for the moment. Additional costs are also likely to occur for disposing of fish at land when the unwanted catches are to be stored, collected and used in dedicated outlets. However, EWG 17-03 re-iterates that this issue is generic to all types of species and fleets and such additional costs should not be considered in isolation for a specific fishery, but considered at the scale of the entire harbour or coastal area.

However, EWG 17-03 acknowledges that the JR does present reasoned arguments in support of this *de minimis* exemption on the grounds of disproportionate costs of handling unwanted catches. While this may be a generic issue to many fleets under the landing obligation, EWG 17-03 accepts this

EWG 17-03 concludes that the transition from the current discard rate (10.4% total catch) to the 1% (*de minimis* level) will be challenging without significant changes of fishing pattern, either by improvements in selectivity or by avoiding areas of higher unwanted catch. This provides an incentive for the fleets involved to adapt their behaviour and to continue research on ways to improve selectivity. This would seem a reasonable justification for keeping this exemption in place. EWG 17-03 also suggests that it would be worthwhile to carry out a review of recent

relevant selectivity work (e.g. as part of the EU funded Discardless project) that may help to support the further work on selectivity improvements.

12.2. High survivability exemption request for Mackerel and Herring in the ring net fishery in ICES areas VIIe and VIIf

Background

This request for a high survivability exemption for mackerel and herring in the ring net fishery targeting non-quota pelagic species (for example, sardines) in ICES areas VIIe and VIIf was first submitted as a request from the Commission for evaluation by STECF PLEN-15-01. The intention is that this exemption from apply from 1 January 2019 to catches of mackerel and herring in the ring net fishery targeting non-quota pelagic species (for example, sardines) in ICES areas VIIe and VIIf under certain specific conditions relating to the catching process. These are the same conditions as apply to other high survivability exemptions in purse seine fisheries already included in the North and NWW pelagic discard plans (Regulations (EU) No. 1395/2014 (North Sea) and Regulation (EU) No. 1393/2014 (NWW)).

Many of the points reported in STECF PLEN-15-01 are still valid but some additional information has been submitted in the 2018 JR regarding these specific conditions which vessels wishing to avail of the exemption must comply.

STECF PLEN 15-01 was asked to consider:

(1) On the basis of the available information on the operation of the ring net fishery and the supporting information supplied to support the exemptions for high survivability in purse seine fisheries whether an exemption for the ring net fishery is justifiable.

(2) Identify whether additional information should be developed to support an exemption taking account of earlier advice on survivability experiments provided by STECF.

Basis for the exemption

The UK has a small-scale fishery for sardine using ring nets in ICES Divisions VIIe and VIIf, within 6 miles of the Cornish coast. Ring net are surrounding nets similar in construction and operation to purse seines and lampara nets. Sardine catches in the fishery are exempted from the landing obligation for pelagic fisheries introduced from 1 January 2015 as sardine are not subject to catch limits in area VII. Incidental catches of TAC species which are subject to the landing obligation, including herring and mackerel are sometimes taken however. Discards of these species have been dependent in the past on availability of quotas to individual vessels. The fishermen participating in the fishery argue that the method of fishing has a low impact and that fish slipped from ring nets have a high survivability. However, to prove this definitively would be difficult given the nature of the fishery.

The request is supported by a series of reports on survivability in purse seine fisheries – Catchpole et al, 2015; Huse and Aold (2010) and Tenningen et al., (2012).

EWG 17-03 observations

EWG 17-03 observes that the supporting information provided on the Cornish ring-net fishery by Catchpole *et al*, (2015), is the same as provided to STECF previously therefore the conclusions reached at that time remain valid.

EWG 17-03 notes that in 2015, STECF noted that the fishing operation of the Cornish ring net fleet is similar in key respects to the operation of purse seine nets for mackerel and herring. A number of these points have been addressed by the inclusion of the conditions specified in the 2017 JR (concerning points of retrieval etc).

EWG 17-03 notes that no information is provided to determine whether the potential crowding densities of mackerel and herring in the Cornish ring net fishery are likely to exceed those reported by Tenningen et al. (2012) and Huse and Vold (2010). While STECF in 2015 queried whether the Catchpole et al study provided representative indications of the likely survivability of mackerel, herring and sardine slipped during the ring net fishing operation it is probable that the survival rates of these species slipped from ring nets used by the Cornish fleet under the newly specified conditions in the 2017 JR are likely to be similar to survival rates from purse seine fisheries under similar conditions and restrictions.

EWG 17-03 concludes that if fishery-specific survival estimates for mackerel and herring slipped from the Cornish ring net fishery are considered by managers to be necessary to inform their decision on whether to grant an exemption from the obligation to land each of these species, then such survival experiments should be carried out.

12.3. Derogation to remove a closed area to protect sprat in the North Sea

Background

The JR from the Scheveningen Group for a Discard Plan for Pelagic and Industrial Fisheries in the North Sea contains a request for a derogation from Article 21.1(c) of Council Regulation (EC) No 850/98 regarding the sprat box. The sprat box, as regulated in Article 21.1(c), is a conservation measure that prohibits the keeping of sprat on board fishing vessels and the use of small mesh pelagic gears within an area off the Danish North Sea coast from 1 July to 31 October. The measure is aimed at the protection of spawning herring which may be bycaught in the sprat fishery. The JR argues that there is no scientific justification for maintaining the sprat box as proportions of Herring are lower in catches inside than in those outside the box. These arguments are based on a 2016 report from the ICES Herring Assessment Working Group (HAWG) (ICES, 2016b). The Joint Recommendation further argues "opening the sprat box will result in a more effective sprat fishery and benefit the fishermen in the area without jeopardising the herring stock".

The sprat box derogation request included in the 2018 Joint Recommendation is the same as a separate 2017 JR adopted by the Scheveningen Group. Both the Pelagic and North Sea Advisory Councils supported the proposal to abandon the sprat box with NS AC members stating that the sprat box "currently prevents the flexibility required to allow vessels to fish where they can reduce their unwanted bycatch as much as possible".

EWG 17-03 observations

In addition to the 2016 HAWG report, ICES have published advice in response to a specific Commission request to assess the effects of lifting the sprat box (ICES, 2017). Both the relevant section of the HAWG report and the response to the Commission request are based on analyses of catch information from an experimental fishery in 2014 and 2015. The advice results show that "the number of herring per kg of sprat did not differ significantly between samples taken inside and outside the sprat box, but the weight of herring per kg sprat did differ significantly, with a higher percentage of herring by weight taken outside the box". The advice concludes that "*fishing inside the sprat box would be expected to reduce unwanted catches of herring (by weight) compared to fishing outside*" and further that "*it is unlikely there would be any effect on herring or sprat stocks if the sprat box was lifted*".

EWG 17-03 notes that a 2017 proposal for a Commission Delegated Regulation amending the Delegated Regulation 1395 of 2014 was included in an earlier draft (Brussels, 24.5.2017 C(2017) 3419 final) which if enacted would have implemented this request but it now appears that the derogation will form part of the Delegated Regulation covering North Sea pelagic fisheries from 2018 onwards.

EWG 17-03 concludes that on the evidence presented in the JR (and in the ICES advice) there currently is only limited evidence to support this derogation to remove the sprat box. Given the fact that the supporting study for this derogation request only covered two years further research would be useful in evaluating the validity of the conclusions reached by ICES.

13 CONCLUSIONS

The following are the main conclusions of EWG 17-03:

General Observations

In reviewing the joint recommendations received, EWG 17-03 highlights a number of general observations. Some of these re-iterate those made in the previous 2014, 2015 and 2016 reports relating to the evaluation of joint recommendations. Several are new observations. These are as follows:

- The role of EWG 17-03 and any future STECF EWGs set up to evaluate joint recommendations remains to evaluate the scientific rigour and robustness of the

underpinning information supplied by Member States to support the main elements of joint recommendations. STECF cannot adjudicate on whether exemptions should be accepted or not.

- EWG 17-03 re-iterates that it is difficult to provide conclusive advice on whether the information presented is sufficient to accept or reject any individual application based on the exemption provisions. The subjective nature of the conditionalities – "high survival", "very difficult to achieve" or "disproportionate costs" means that there is a large element of judgement required in deciding on whether to permit or reject a proposal that cannot be based solely on scientific option of the evidence presented.
- EWG 17-03 notes that the quality of submissions to support the exemptions has improved since the first JR's were submitted in 2014. In particular EWG 17-03 recognises the progress made in the carrying out of survival experiments which in most case closely follow the recommendations made by STECF and also ICES. EWG 17-03 also acknowledges that by and large Member State Regional Groups have used the templates developed by STECF in 2016 to supply fisheries and fleet descriptors. However, EWG 17-03 points out that some of the exemptions submitted by the regional groups continue to be very much presented as ″national″ rather than regional exemptions. In many cases the information provided originates from one single Member State and while other Member States may be included frequently the information on the respective fleets are not provided. In developing future cases it would be better if exemptions were regionally focused and covering all relevant fleets. This would help the Commission avoid having to request additional information and clarifications from Member States on which fleets the exemptions should apply and also make it much easier for STECF to evaluate them.
- EWG 17-03 reiterates that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 of the Common Fisheries Policy CFP) to fish at FMSY can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from FMSY based advice. If *de minimis* were operated as an addition to the FMSY-advised catch, then mortality rates would be predicted to exceed the FMSY 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 FMSY could be substantial. STECF 17-03 considers that the only relevant way is to apply the *de minimis* % to the total catch of the given species in the given fishery where the exemption is sought. This is not always the case in the exemptions submitted by the Member States regional group.
- EWG 17-03 has identified areas where there are limitations in the information presented or the methodologies used and in some cases where there are inconsistences. In these cases further clarification may be required. Where evidence is presented and shows that for example increasing selectivity results in losses of marketable fish, then this is noted, but whether this constitutes a technical difficulty is not something that can be readily answered by the EWG. Inevitably, improvements in selectivity result in some degree of loss, and therefore some reduction in revenue. However, these should be viewed in the broader context of medium term gains in stocks and in the absence of improvements in selectivity, would the fishery be worse of in comparison due to choke effects and utilization of quota for fish that have little or no value.
- STECF has consistently proposed that the justification for *de minimis* exemptions is largely economic. However, EWG 17-03 acknowledges that providing detailed information for individual fisheries is challenging. Therefore it is apparent that STECF will only be able to consider the validity of the supporting information underpinning the exemptions provided and due to the lack of economic data in many cases will not be able to carry out any meaningful analysis of the economic impacts. If a deeper analysis is required by DGMARE, then, this needs to be discussed with the Member States and Advisory Councils so that they are clear what information should be provided and also with STECF to establish what they should evaluate. In this regard EWG 17-03 highlights the alternative option appraisal approach in *de minimis* submissions developed by EWG 16-06.
- EWG 17-03 re-iterates that assessing what constitutes high survivability is problematic, which is made more complex by the limited information available and the high variability in the available survival estimates. What is clear is that there are a wide range of factors that can affect survival and these are likely to be the primary cause of the high variability observed across the various studies. However, identifying and quantifying these is difficult

due to the relatively limited species specific information and differences between experiments including timing, season, gear handling, observation period. This means that passing judgment on the representativeness of individual or limited studies as an indicator of discard survival across an entire fishery is difficult given the range of factors that can influence survival and how they may vary in time even within a fishery.

- EWG 17-03 notes that obliging fishermen to land catches of fish that would otherwise have survived the discarding process could, in some specific cases, result in negative consequences for the stock. This is because any surviving discarded fish contribute positively to the stock and landing those individuals therefore removes that benefit. Where discards are included in the stock assessment and a portion of which are known to survive, this in effect increases fishing mortality and changes in exploitation pattern which may lead to reductions in fishing opportunities to maintain fishing mortality levels consistent with management objectives (e.g. FMSY). Conversely, if they are not included in the assessment, then the mortality is higher than estimated, even if part of the discards survive, and in this case, bringing everything to land would provide better control of fishing mortality.
- EWG 17-03 considers that avoidance of unwanted catch through improved selectivity or other means should be the primary focus implementing the landing obligation and should also consider the potential benefits for other stocks and the broader ecosystem that would arise from changes in exploitation patterns. Therefore, the choice of survival levels/value(s) in the context of article 15.2(b) will depend on which objective (e.g. avoidance of waste; improve stock sustainability; improve financial viability) is set as a priority. Nevertheless, provided the methodologies employed in carrying out survival experiments are appropriate and the limitations of the results are fully explored, EWG 17-03 considers that the decision to accept or reject an exemption proposal based on the survival value presented is largely one for managers.
- EWG 17-03 notes that article 15.5(c)(ii) states that where continued discarding is permitted through the application of *de minimis* provisions, whilst these catches "shall not be counted against the relevant quotas; however, all such catches shall be fully recorded". EWG 17-03 re-iterates that no specific provisions have been included in the JR's to address this. In this regard EWG 17-03 stresses the need to improve the collection of catch documentation data. As highlighted in by STECF PLEN 17-01, there would appear a lack of "lack of reporting by vessel operators of fish discarded under exemptions, discards of fish currently not subject to the landing obligation and catches of fish below MCRS". The joint recommendations evaluated by EWG 17-03 would strongly benefit from containing provisions that strengthen data collection in this respect. As STECF PLEN 17-01 pointed out, innovative monitoring measures such as CCTV and Remote Electronic Monitoring (REM) have been applied only in pilot studies, but would be a more effective way to enforce the landing obligation if applied in a commercial setting (STECF EWG 13-17). If the data situation does not improve and the true quantities being caught as reported do not reflect the actual removals, they may have a significant impact on the quality of scientific advice for next year's fishing opportunities, as additional quota top-ups allocated in combination with continued discarding may also compromise the achievement of the MSY objective.

Evaluation of Regional Draft Joint Recommendations

EWG 17-03 has screened the fishery definitions included in the JRs for the North Sea, NWW and SWW, Baltic and Western Mediterranean for potential anomalies. Based on this analysis relatively few transboundary issues and inconsistencies where fisheries straddle different areas have been identified.

EWG 17-03 have also carried out an analysis of the progression in implementing the landing obligation. This analysis provides an overview of the percentage of TAC species from 2015 to 2018 now subject to the LO (partial or fully) compared to the percentage of TACs species not yet included. EWG 17-03 considers this to be a simplified indicator of progress so far with implementation of the landing obligation and of what is still left to fall under the landing obligation. It does not attempt to quantify landing obligation coverage in terms of actual catches, but focuses solely on the proportion of TACs. Based on this analysis currently there are 97 out of 174 stocks currently subject either fully or partially to the landing obligation (excluding the

Mediterranean). To meet the target date for full implementation by 2019 will require 77 stocks to be brought under the landing obligation.

EWG 17-03 has evaluated the exemptions and other requested contained in the JR's submitted by the Regional Groups of Member States. The following is a summary of the main observations for each of these exemptions by region.

North Sea

1. For the *de minimis* exemption for whiting caught in bottom trawl fisheries in the Skagerrak and the Kattegat the justification for this exemption on the basis of improvements in selectivity being very difficult to achieve is well founded. It is backed up by selectivity studies which show increasing selectivity for whiting will lead to significant economic losses of other marketable species. However, qualitative economic data to support this is limited and the volume of *de minimis* is in excess of the current level of discards of whiting below MCRS and which may act as a dis-incentive to try to improve selectivity in the longer term. The arguments relating to disproportionate handling costs are rather generic and could be applied to many fisheries.
2. The exemption relating to the bycatch of plaice in the *Nephrops* trawl fishery using a selective trawl (SEPNEP) in ICES area IIA and IV exemption is well founded as long as vessels are equipped with the SepNep panel, as described. As indicated in the JR it is important that "the next step is to implement and fully adapt the gear to the commercial situation".
3. For the exemption for whiting and cod caught by bottom trawls 79-99 mm (TR2) in the North Sea the assertion that it is difficult to improve selectivity in the short term without incurring loss of marketable catch is supported by the information provided but only for the French fleet. For the Dutch fleet no relevant selectivity trials or information on selectivity projects and other possible studies have been provided. It is also unclear from the JR whether the intention is to apply this *de minimis* to other fleets. This was indicated to be the case in 2016, when information for fleets from Denmark, Belgium and the UK were included. If the intention is for these fleets to continue to be included then information on the number of vessels, catches and discard rates as well as reports of any relevant selectivity trials should be supplied.
4. For the exemption relating to fish bycaught in Northern prawn trawl fishery the volumes under this *de minimis* are small even with the addition of extra species and provided discarding under the exemption is monitored the impact is likely to be minimal in this fishery.
5. For the exemption relating to fish bycaught in *Nephrops* targeted trawl fishery the proposed definition included in the JR is unclear and uses terms such as "tail" and "between the knots" that may not be easily understandable when translated into different languages. The key parameters are the mesh size of the panel, the position in relation to the codend and the joining ration of the panel into the trawl. EWG 17-03 suggests the final legal definition is a matter for the Commission possibly through the Expert Group on Fisheries and Aquaculture to discuss.
6. For the exemption for *Nephrops* caught by bottom trawls with a mesh size of 80-99mm there is no justification for not accepting the reduction of the *de minimis* volume proposed.
7. For the high survivability exemption for fish bycatch in pots and fyke nets in area IIIa and IV that replaces an existing *de minimis* exemption the overall quantities of fish associated with the proposed exemption are negligible. Therefore given the gear type is relatively benign and provided discarding under the exemption is monitored, the impact is likely to be minimal.
8. For the high survivability exemption for *Nephrops* caught with a mesh size of at least 80mm and equipped with a Netgrid selectivity device in ICES area IV the available information provides robust estimates of *Nephrops* discard survival during winter months. However, the current knowledge of environmental conditions and fisheries does not support a survival exemption in the whole of area IV at all times of the year. EWG 17-03 is of the opinion that the exemption should be limited to the specific Fu's identified in the JR.
9. For the high survivability exemption for common sole under mcrs caught by trawls with a mesh size of 80-89mm in ICES division IVc the evidence provided is robust and underpins the existing exemption and the proposed extension to include vessels of up to 221 kW power and those fishing at depths up to 30m. A clear description of where the nursery areas referred to in the exemption are and the fishing effort within and outside these areas is required.

NWW

1. For the proposal for a combined *de minimis* for cod, haddock and whtiting in tarwl fisheries in the Celtic Sea and western waters the approach does offer a degree of flexibility which may help fishermen adapt to the landing obligation in mixed fishery situations. However, any *de minimis* discard quantities should (and have been) deducted from the catch opportunities arising from FMSY based catch advice. In this context and to respect the precautionary approach, under a combined *de minimis*, the separate *de minimis* volume for each individual species within the combined species can only be accounted for in respective stocks TACs by discounting the maximum possible amount of *de minimis* for each species that could potentially be discarded.
2. For the high survivability exemption for common sole under mcrs caught by trawls with a mesh size of 80-89mm in ICES division VIId, as in the North Sea the evidence provided is robust and underpins the existing exemption and the proposed extension to include vessels of up to 221 kW power and those fishing at depths up to 30 m. A clear description of where the nursery areas referred to in the exemption are and the fishing effort within and outside these areas is required.

SWW

1. For the existing *de minimis* exemption for hake caught by bottom trawlers in directed fisheries in ICES subareas VIII and IX a significant amount of new information has been provided to support this exemption. However, the lack of baseline selectivity data for the current regulatory gears makes it difficult to assess the positives in terms of improved selectivity and the negatives in relation to losses of marketable catches associated with the gear changes. Based on the results of the trials and the nature of the fisheries (i.e. large number of species) the indications are that increasing selectivity in these fisheries is difficult to achieve. Nonetheless further experimentation should be encouraged to assess whether this is the case and also to test other gear options that could improve selectivity in the fisheries.
2. For the existing high survivability exemption for *Nephrops* caught with trawls in ICES subareas VIII and IX the latest evidence requested and provided to support an existing exemption on the survival of discarded *Nephrops* provide robust scientific estimates of discard survival. Using the new chute system which is now mandatory in the French *Nephrops* fishery improves the survival chances of *Nephrops* by around 15%.

Baltic

1. For the high survivability exemption for cod, plaice and salmon caught with trap-nets, creels/pots, fyke-nets and pound net in the Baltic, while noting the missing information and weaknesses in the experiments used to support the exemption request, the overall quantities of fish associated with the proposed exemption are likely to be negligible. Therefore given the gear type is relatively benign and provided discarding under the exemption is monitored, the impact is likely to be minimal.
2. For the proposals to allow the use of a modified gear in the Baltic cod trawl fishery the results show the modified codend to provide positive benefits in terms of reducing unwanted catches of cod below MCRS. Further testing, though is required to demonstrate concretely that this result is valid. It is suggested that if the derogation to allow the use of this modified gear is granted then it should be conditional on further experimentation. Selectivity experiments to determine the absolute selectivity of the modified codend compared to the standard gear should be carried out in addition monitoring of catch composition through observer coverage of vessels using the modified gears.

Mediterranean

1. For the high survivability exemptions for bivalve molluscs in mechanized dredge fisheries and for common sole with rapido trawls and where additional information was requested as a condition of the exemption, no documentation has been supplied so no assessment has been carried out.
2. For the new high survivability exemption proposed for *Nephrops* caught with trawls in the western Mediterranean the evidence provided to support this exemption on the survival of discarded *Nephrops* provide robust scientific estimates of discard survival. Nevertheless, further experiments to measure the effect of sorting time would be useful.

Black Sea

1. For the high survivability exemption for turbot caught in gillnet fisheries in the Black Sea and for which the provision of further supporting information for this exemption, no such information has been provided so no evaluation has been possible.

Pelagic Fisheries

1. For the existing *de minimis* exemption for artisanal pelagic trawl fisheries using OTM and PTM in ICES sea area IV b,c and VIId the transition from the current discard rate (10.4% total catch) to the 1% (*de minimis* level) will be challenging without significant changes of fishing pattern, either by improvements in selectivity or by avoiding areas of higher unwanted catch. This provides an incentive for the fleets involved to adapt their behaviour and continue research on ways to improve selectivity. This would seem a reasonable justification for keeping this exemption in place. Further selectivity experiments to find ways of improving selectivity in these fisheries should be encouraged.
2. For the proposed high survivability exemption request for Mackerel and Herring in the ring net fishery in ICES areas VIIe and VIIf to be introduced in 2019 it is probable that the survival rates of these species released from ring nets under the specified conditions in 2017 JR are likely to be similar to survival rates from purse seine fisheries already with high survivability exemptions in place. If fishery-specific survival estimates for mackerel and herring slipped from the Cornish ring net fishery are considered by managers to be necessary to inform their decision on whether to grant an exemption from the obligation to land each of these species, then such survival experiments should be carried out.
3. For the derogation to remove the sprat box in the North Sea on the evidence presented in the JR (and in the ICES advice) there currently is only limited evidence to support this derogation to remove the sprat box. Given the fact that the supporting study for this derogation request only covered two years further research would be useful in evaluating the validity of the conclusions reached by ICES.

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15 Annexes

15.1. Annex I - Templates for the provision of fisheries information to support *de minimis* and high survivability exemptions

Table 15.1a Template for the provision of information that defines the fisheries to which *de minimis* exemptions should apply

Country	Exemption applied for (species, area, gear type)*	Species as bycatch or target	Number of Vessels subject to LO	Landings (by LO subject Vessels)	Estimated Discards*	Estimated Catch	Discard Rate**	Estimated *de minimis* volumes**

Table 15.1b Template for the provision of information that defines the fisheries to which high survivability exemptions should apply

Country	Exemption applied for (species, area, gear type)*	Species as bycatch or target	Number of vessels subject to the LO	Landings (by LO subject Vessels)	Estimated Discards*	Estimated Catch	Discard Rate	Estimated discard survival rate from provided studies

* The information given here should be disaggregated by exemption applied (e.g. in the case of Whiting in Area VII there should be a separate row for each of the three relevant exemptions).

** Note on discard rates and *de minimis* volumes – For those vessels subject to the LO an estimated discard rate should be applied to their landings of the relevant species in the relevant areas in the most recent year for which there is data available. The discard rate used should be as specific as possible (e.g. in the case of the whiting *de minimis* exemptions in the NWW, an average discard rate of TR1 and TR2 vessels should be avoided as discard rates, for Whiting for example, may be very different between TR1 and TR2 fleets). It may not be possible to calculate a discard rate for the specific vessels which are subject to the LO but a discard rate for the fleet overall should be available and could be used in that case.

15.2 Annex 2 – ICES template for critical review of survival experiments

The framework of the critical review used to evaluate literature on discard survival estimates based on ICES WKMEDS guidelines; Catchpole et al., unpubl. data. 'Y' = yes, 'N' = no, 'P' = partial; whereby more positive responses demonstrate more robust studies.

	Critical review questions
Key guidance questions	Are criteria given to define when death occurred?
	Was a control used that informed on experimental induced mortality?
	Was all discard induced mortality observed/modelled (during monitoring period or time at liberty)?
	Did the sample represent the part of the catch being studied?
	Did the sample represent the relevant population in the wider fishery?
Vitality assessments	Is the method of selection for assessed fish described?
	Is there a description for each health state category?
	Were reflexes developed using 'unstressed' fish (not exposed to capture treatment) and consistently observed?
	Were there time limits for responses/reflexes? e.g. operculum movement within 5 secs.
	Was assessment container appropriate for the species, adequate to observe responses?
	Is the potential for observer bias discussed?
	Are the protocols effective in assessing health/injury?
	Are assessments consistent across all parts of the study?
Captive Observation	Are the holding/transfer facilities described?
	Are holding/transfer facilities considered sympathetic to the biological/behavioural needs of the subjects?
	Are the holding/transfer conditions the same across treatments/replicates?
	Was there potential for additional stress/injury/mortality with captive fish unlikely?
	Are the holding/transfer conditions representative of "ambient" (discarded to) conditions?
	Are there appropriate protocols for handling/removal of dead specimens? (e.g. dead removed regularly)
	Are there appropriate protocols for monitoring live specimens?
	Is there sufficient frequency in observations during the monitoring period?
	Was there potential for stress/injury in subjects during observation unlikely?
	Was mortality observed to (or very near to) asymptote?
Tagging	Has the potential for tagging induced mortality been considered?
	Are fish released in the same area as they were caught?

	Are tag losses accounted for?
	Can discard-related mortality be distinguished from natural mortality, fishing mortality and emigration?
	Is the duration of the at-liberty tagged period sufficiently long to estimate discard survival?
	Traditional tags - Are catches in the fishery sufficiently large to provide the required tag return rate to estimate discard survival?
	Acoustic, DST tags - Can the death of an individual be accurately determined from the data?
	Acoustic tags - Does the acoustic receiver array provide full coverage of the area?
	Pop-off DST-tags - Is there a similar likelihood of tag recovery for both survivors and non-survivors?
Controls	Were controls representative of the treatment groups? i.e. biologically (length, sex, condition), number, spatial & temporal origin
	Did control subjects experience same experimental conditions?
	Were treatment and controls randomly selected to account for bias?
	Were "blind controls" used to account for performance/measurement bias?
	Is potential for effects when combining stressors from acquisition methods discussed?
Analysis	Is the analysis that derived the survival estimates described?
	Are the conclusions based on data summary or statistical inference?
	Are the conclusions supported by the data / analysis?

15.3 Annex 3 – Assessment of high survivability exemption for common sole under MCRS caught by trawls with a mesh size of 80-89mm in ICES division IVc and VIId

EWG 17-03 review of the supporting studies for the high survivability exemption for common sole under MCRS caught by trawls with a mesh size of 80-89mm in ICES division IVc and VIId using the critical review framework developed by ICES WKMEDS guidelines

	Critical review questions	**Assessment**
Key guidance questions (maximum score 50)	Are criteria given to define when death occurred?	yes
	Was a control used that informed on experimental induced mortality?	partially
	Was all discard induced mortality observed/modelled (during monitoring period or time at liberty)?	yes
	Did the sample represent the part of the catch being studied?	yes
	Did the sample represent the relevant population in the wider fishery?	yes
Vitality assessments (maximum score 8)	Is the method of selection for assessed fish described?	partially
	Is there a description for each health state category?	yes
	Were reflexes developed using 'unstressed' fish (not exposed to capture treatment) and consistently observed?	yes
	Were there time limits for responses/reflexes? e.g. operculum movement within 5 secs.	yes
	Was assessment container appropriate for the species, adequate to observe responses?	yes
	Is the potential for observer bias discussed?	yes
	Are the protocols effective in assessing health/injury?	yes
	Are assessments consistent across all parts of the study?	yes
vation (maxi mum score	Are the holding/transfer facilities described?	yes
	Are holding/transfer facilities considered	yes

	sympathetic to the biological/behavioural needs of the subjects?	
	Are the holding/transfer conditions the same across treatments/replicates?	yes
	Was there potential for additional stress/injury/mortality with captive fish unlikely?	no
	Are the holding/transfer conditions representative of "ambient" (discarded to) conditions?	yes
	Are there appropriate protocols for handling/removal of dead specimens? (e.g. dead removed regularly)	yes
	Are there appropriate protocols for monitoring live specimens?	yes
	Is there sufficient frequency in observations during the monitoring period?	yes
	Was there potential for stress/injury in subjects during observation unlikely?	no
	Was mortality observed to (or very near to) asymptote?	yes
Tagging	Has the potential for tagging induced mortality been considered?	no
	Are fish released in the same area as they were caught?	
	Are tag losses accounted for?	
	Can discard-related mortality be distinguished from natural mortality, fishing mortality and emigration?	
	Is the duration of the at-liberty tagged period sufficiently long to estimate discard survival?	
	Traditional tags - Are catches in the fishery sufficiently large to provide the required tag return rate to estimate discard survival?	n/a
	Acoustic, DST tags - Can the death of an individual be accurately determined from the data?	n/a
	Acoustic tags - Does the acoustic receiver array provide full coverage of the area?	n/a

	Pop-off DST-tags - Is there a similar likelihood of tag recovery for both survivors and non-survivors?	n/a
Controls (maximum score 5)	Were controls representative of the treatment groups? i.e. biologically (length, sex, condition), number, spatial & temporal origin	yes
	Did control subjects experience same experimental conditions?	no
	Were treatment and controls randomly selected to account for bias?	yes
	Were "blind controls" used to account for performance/measurement bias?	no
	Is potential for effects when combining stressors from acquisition methods discussed?	yes
Analysis (maximum score 3)	Is the analysis that derived the survival estimates described?	yes
	Are the conclusions based on data summary or statistical inference?	yes
	Are the conclusions supported by the data / analysis?	yes

15.4 Annex 4 – Assessment of high survivability exemption for Nephrops caught with trawls in ICES subareas VIII and IX

EWG 17-03 review of the supporting studies for the high survivability exemption for *Nephrops* caught with trawls in ICES subareas VIII and IX using the critical review framework developed by ICES WKMEDS guidelines

	Critical review questions	**Scoring by method**			
		Ifremer NEP			
Key guidance questions (maximum score 50)	Are criteria given to define when death occurred?	Y			
	Was a control used that informed on experimental induced mortality?	Y			
	Was all discard induced mortality observed/modelled (during monitoring period or time at liberty)?	Y			
	Did the sample represent the part of the catch being studied?	Y			
	Did the sample represent the relevant population in the wider fishery?	P			
Vitality assessments (maximum score 8)	Is the method of selection for assessed fish described?	Y			
	Is there a description for each health state category?	Y			
	Were reflexes developed using 'unstressed' fish (not exposed to capture treatment) and consistently observed?	Y			
	Were there time limits for responses/reflexes? e.g. operculum movement within 5 secs.	N			
	Was assessment container appropriate for the species, adequate to observe responses?	Y			
	Is the potential for observer bias discussed?	N			
	Are the protocols effective in assessing health/injury?	Y			
	Are assessments consistent across all parts of the study?	Y			
Captive Observation (maximum score 10)	Are the holding/transfer facilities described?	Y			
	Are holding/transfer facilities considered sympathetic to the biological/behavioural needs of the subjects?	Y			
	Are the holding/transfer conditions the same across treatments/replicates?	Y			

	Was the potential for additional stress/injury/mortality with captive fish unlikely?	N			
	Are the holding/transfer conditions representative of "ambient" (discarded to) conditions?	Y			
	Are there appropriate protocols for handling/removal of dead specimens? (e.g. dead removed regularly)	Y			
	Are there appropriate protocols for monitoring live specimens?	Y			
	Is there sufficient frequency in observations during the monitoring period?	Y			
	Was there potential for stress/injury in subjects during observation unlikely?	Y			
	Was mortality observed to (or very near to) asymptote?	Y			
Controls (maximum score 5)	Were controls representative of the treatment groups? i.e. biologically (length, sex, condition), number, spatial & temporal origin	Y			
	Did control subjects experience same experimental conditions?	Y			
	Were treatment and controls randomly selected to account for bias?	N			
	Were "blind controls" used to account for performance/measurement bias?	N			
	Is potential for effects when combining stressors from acquisition methods discussed?	N			
Analysis (maximum score 3)	Is the analysis that derived the survival estimates described?	Y			
	Are the conclusions based on data summary or statistical inference?	Y			
	Are the conclusions supported by the data / analysis?	Y			
Total					

15.5 Annex 5– Assessment of high survivability exemption for Nephrops caught with trawls in the western Mediterranean

EWG 17-03 review of the supporting studies for the high survivability exemption for *Nephrops* caught with trawls in the western Mediterranean using the critical review framework developed by ICES WKMEDS guidelines.

	Critical review questions	**Scoring by method**			
		Minow Project NEP			
Key guidance questions (maximum score 50)	Are criteria given to define when death occurred?	Y			
	Was a control used that informed on experimental induced mortality?	Y			
	Was all discard induced mortality observed/modelled (during monitoring period or time at liberty)?	Y			
	Did the sample represent the part of the catch being studied?	P			
	Did the sample represent the relevant population in the wider fishery?	P			
Vitality assessments (maximum score 8)	Is the method of selection for assessed fish described?	N			
	Is there a description for each health state category?	Y			
	Were reflexes developed using 'unstressed' fish (not exposed to capture treatment) and consistently observed?	P			
	Were there time limits for responses/reflexes? e.g. operculum movement within 5 secs.	N			
	Was assessment container appropriate for the species, adequate to observe responses?	Y			
	Is the potential for observer bias discussed?	N			
	Are the protocols effective in assessing health/injury?	Y			
	Are assessments consistent across all parts of the study?	Y			
Captive Observation (maximum score 10)	Are the holding/transfer facilities described?	Y			
	Are holding/transfer facilities considered sympathetic to the biological/behavioural needs of the subjects?	N			
	Are the holding/transfer conditions the same across treatments/replicates?	Y			
	Was the potential for additional stress/injury/mortality with captive fish unlikely?	N			
	Are the holding/transfer conditions representative of "ambient" (discarded to) conditions?	Y			
	Are there appropriate protocols for handling/removal of dead specimens? (e.g. dead removed regularly)	Y			
	Are there appropriate protocols for monitoring live specimens?	N			

	Is there sufficient frequency in observations during the monitoring period?	Y			
	Was there potential for stress/injury in subjects during observation unlikely?	N			
	Was mortality observed to (or very near to) asymptote?	Y			
Controls (maximum score 5)	Were controls representative of the treatment groups? i.e. biologically (length, sex, condition), number, spatial & temporal origin	Y			
	Did control subjects experience same experimental conditions?	Y			
	Were treatment and controls randomly selected to account for bias?	N			
	Were "blind controls" used to account for performance/measurement bias?	N			
	Is potential for effects when combining stressors from acquisition methods discussed?	N			
Analysis (maximum score 3)	Is the analysis that derived the survival estimates described?	Y			
	Are the conclusions based on data summary or statistical inference?	Y			
	Are the conclusions supported by the data / analysis?	N			
Total					

16 CONTACT DETAILS OF EWG-17-03 PARTICIPANTS

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LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on:
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- Declarations of invited and JRC experts (see also section 16 of this report – List of participants)
- EWG-17-03 background documents(zip file)
- Additional background documents at PLEN-17-02 (zip file)

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