JRC SCIENCE FOR POLICY REPORT

# Scientific, Technical and Economic Committee for Fisheries (STECF) - Fisheries Dependent Information – FDI (STECF-20-10)

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Joint Research Centre

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. The STECF reviewed the report of the EWG on Fisheries-dependent Information during its winter 2020 virtual plenary meeting.

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**SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) – FISHERIES DEPENDENT INFORMATION (STECF-20-10)**

**Request to the STECF**

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

The EWG-20-10 report was reviewed during the winter plenary meeting (09-13 November 2020).

**Background of the EW 20-10**

The STECF EWG 20-10 met virtually during 14–18 September 2020. 23 experts attended the meeting (incl. 4 STECF members), representing expertise from 18 countries to review the data transmitted by Member States under the 2020 FDI data call in order to judge whether:

  i) data submitted were complete in terms of areas of fishing, types of fleet segment and gear operated and species identified;

  ii) data submitted were complete in terms of type of data requested: capacity metrics, effort metrics, landings, unwanted catch and spatially disaggregated landings and effort.

The EWG was also asked to map the data on fishing effort obtained from the call for spatially disaggregated data. In considering the completeness of the data submitted the EWG was entitled to use external sources of data where necessary, as well as expert judgement.

**STECF comments**

The EWG addressed all the Terms of Reference. Below the main observations from STECF, for each ToR.

STECF considers that the EWG has addressed all the Terms of Reference. STECF observes the following:

**ToR 1. Review and document completeness of the data set and feedback from Member States on approaches used and problems encountered in responding to the data call**

*1.1. As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT). Such issues should be reported in full within 2 weeks of the end of the EWG.*

STECF acknowledges that the data provided by Member States in response to the 2020 FDI data call, and incorporated into the FDI database, represent the most comprehensive data set currently available on fishery-dependent information from European fleets. However, STECF notes that a small number of shortfalls and gaps remain in the data submitted. The unresolved issues that still require to be addressed by Member States were all recorded in an Excel version of the Data Transmission Monitoring Tool (DTMT), to be submitted subsequently to the online tool that was not in operation at the time of the meeting due to COVID-19 and internet security issues.

*1.2. Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2021.*

STECF notes that the EWG 20-10 reviewed the methodology and outputs of the *ad hoc* contract (Ref STECF 2076) awarded, as in previous years. This *ad hoc* contract provided data on landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each anticipated exemption contained in the individual discard plans for 2021. STECF observes that the methodology used in the *ad hoc* contract was appropriate and identical to the one used in previous years.

The main challenge of this exercise is to provide estimates for exemptions for which the Member State did not provide sufficient discards information (no or too few discard samples). In the absence of any appropriate samples at country level, the estimates were derived using extrapolation ('fill-ins') using data from other countries in the same métiers. STECF acknowledges that in these cases where sampling is insufficient the values provided by the *ad hoc* contract still represent the best available estimate.

*1.3. Review data quality checks and produce National methodological chapters.*

STECF observes that data submitted by each Member States were thoroughly reviewed. The review included the methodology used for responding to the data call and the coverage, quality and consistency of data submitted. The review sections by Member State are reproduced in Annex 1 of the EWG 20-10 Report.

STECF notes that Member States are responsible for providing checked and validated data. Given the complexity, size, and high level of disaggregation of the datasets submitted, some erroneous records are though still expected to occur occasionally, in spite of the extensive automated checks already implemented by the JRC.

STECF notes that transferring biological sampled data (based on national sampling protocol) into the very detailed Table A that would include catches at length is of major concern for all Member States as there is no uniformly defined method to do so. Progresses towards achieving such a unified methodology have been ongoing since the major renewal of the FDI data call in 2017, but some more work is still needed to ensure full agreement and adoption by all Member States.

## ToR 2. Provide landings and discards data for exemptions in discard plans

*2.1. STECF is asked to provide figures for landings and discards in 2019, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021. Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards) for 2019, if possible and enough data provided during data call.*

STECF acknowledges that EWG 20-10 attempted to provide discard estimates for each anticipated exemption for 2021. However, some exemptions required detailed information currently not available in the FDI database (i.e. distance fished from shore and vessels engine power). Based on the feasibility of the EWG to extract the relevant data, exemptions were characterised in three groups: "yes" (data were extracted), "partially" (data were partially extracted) or "no" (no data was extracted).

STECF agrees that a specific data request asking Member States to provide data relating to the vessels to which a proposed exemption is likely to apply, is a better option than using data provided to populate the FDI database. This is discussed in ToR 7.2 of this PLEN 20-03 report.

STECF observes that EWG 20-10 provided the discard information for each exemption in 2 separate formats: with and without fill-ins. In addition, the information was summarised in two types of tables: tables with landings and discards reported by MS and estimated for the fleets under exemptions (Tables 1-8 in Annex 2) and tables with FDI data reported and filled in aggregated by species and sub regions (Tables 9-13 in Annex 2).

STECF further observes that the main shortcoming to provide precise estimates lies on the fact that data from MS sampling programs were not always sufficient to provide discard estimates. This is mainly because observer programs undertaken under DCF national sampling programs are not designed to specifically sample fisheries with exemptions in place.

The STECF notes that the Member States (MS) sometimes uses different sources of discard information (scientific data, logbooks or a combination of the two) when reporting to FDI data call. Direct comparisons between Member States may therefore not only reflect a difference in actual discard levels, but also differences in methodology.

STECF notes that considering the shortcomings listed above, the resulting estimates should be interpreted with caution.

*2.2. STECF is asked to assess and if possible, provide percentages of discards estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021.*

STECF observes that proportions of discards above and below MCRS, in weight and number by species, were estimated. The information was calculated at the level of aggregation corresponding to the country, year, area, and metier and is presented in the form of tables and graphs in the Annex 3 of the EWG 20-10 Report.

STECF notes that estimates were calculated by merging Tables A (detailed catch table), D (discards length data) and F (landings length data) using the fields *domain_discards* and *domain_landings*. The variable *domains* were created to reflect the sampling programs of each country and to provide the best scientific estimates of the length structure of the landings/discards. Following the proposal of EWG 19-11 and the suggestion of STECF PLEN 19-03, the information on mean weight-at-length was requested from Member States for the first time in the FDI 2020 data call. It was used to calculate the discards in weight above and below MCRS.

**ToR 3. Produce dissemination tables and maps of spatial effort and landings by c-squares**

*3.1. Discuss and agree the format of the biological data (FDI Tables C, D, E and F) and of the refusal rate data to be publicly disseminated (FDI Table B).*

STECF notes that it will still be necessary to develop an agreed standard methodology for combining the biological parameters in Tables C, D, E and F with Table A. Data will be checked for compliance with the confidentiality agreements before the estimates of the age and length composition of catches can be made publicly available.

STECF agrees that once this method is agreed and applied, the following outputs could be made public:

- Relative length distribution by year, quarter, species, area and métier. Separately for landings and discards.
- Relative age distribution by year, quarter, species, area, métier. Separately for landings and discards.

STECF notes that 2020 data will be disseminated in the same format as agreed in 2019, without the need to formally notify to the Member States prior dissemination of data.

*3.2. If GIS technical skills are available in the EWG, produce maps of effort and landings by c-square (to be inserted in the EWG report) for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):*

a) Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters3
b) Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and traps.

STECF notes that a comprehensive set of maps of spatial effort and landings were produced for all fishing regions and major gear types. They were included in Annex 4 of the EWG Report and are available at the EU level for public access in the STECF web: https://stecf.jrc.ec.europa.eu/dd/fdi.

STECF observes that the geographical data validation process adopted last year was implemented and documented in a series of scripts. STECF agrees that these checks should be included in the FDI data call uploading tool.

STECF notes that quality of the spatial data provided by Member States has improved compared to previous years. The rate of invalid records was considered low (< 1.5 %).

**EWG 20-10 proposal for actions in 2021**

STECF observes that the EWG 20-10 proposes the following actions in 2021 to achieve the objectives of the ToRs:

1) A data dissemination *ad hoc* contract that would come up with a common methodology proposal to merge Table A with biological data Tables (C, D, E and F) and propose appropriate methods to disseminate biological data and quality of estimates.
2) The dissemination *ad hoc* contract will be followed by a first EWG meeting dedicated to Methodological issues (e.g. processes and methods to assemble the detailed table A) to further improve data quality and utility and to ensure appropriate dissemination of the FDI data. The EWG meeting would also be used to compile and check the MS data submitted through the FDI data call.
3) A second, EWG-FDI meeting to provide any advice dependent on FDI data and requested by the Commission, especially if the quantification of exemptions under the landing obligation will continue to be performed with FDI data.

**EWG 20-10 data call**

STECF observes that the biological data from the Mediterranean- and Black Sea were not requested in the 2020 FDI data call, on the basis that they are collected under the dedicated Mediterranean- and Black Sea data call. To start building consistent time series and publish it, STECF suggests that the biological data provided during the Mediterranean- and Black Sea data call is incorporated into the FDI database.

STECF notes that there is a need to have as long a time series of FDI data as possible. A progressive (one year at the time) backward extension with historical data (prior to 2015) was the approach preferred by Member States to achieve this time series. Member States considered that assembling and formatting historical data is time-consuming, and it is considered difficult to process several years at once.

**STECF conclusions**

STECF concludes that the EWG 20-10 addressed all ToRs appropriately.

*STECF conclusions for ToR 1 and ToR 2*

STECF reiterates that the *ad hoc* contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for the following year has proven its usefulness over the years and if possible, should be repeated in 2021.

STECF concludes that the methodology used to estimate discards is appropriate. However, for some cases, the low level of sampling or the absence of samples, can lead to imprecise estimates or estimates potentially not fully representative of the true (but unknown) level of discarding for the relevant fleets.

STECF concludes that the methodology used to calculate the percentages below and above MCRS of landings and discards is appropriate and useful to inform on trends in size composition in the context of the landing obligation. The inclusion of the variable MEAN_WEIGHT_AT_LENGTH in Tables D and F (discards and landings by length, respectively) has increased the precision of the estimates.

To ensure the quality of the data and to continue building standard procedures to maintain the FDI database, STECF reiterates its conclusion from previous years that two separate Expert Working group meetings would be needed in 2021. The first Working Group, Methodology FDI EWG, would be solely dedicated to compiling and checking the data submitted through the FDI data call and address the methodological discussions needed to improve comparability of the data submitted by MS. This working group could meet just after the deadline of the data call in July if the data call can be launched as previously in early June. A second, Advice FDI EWG meeting would meet around the same time as previously (mid September) and respond to any requests

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from the Commission dependent on FDI data, including the quantification of exemptions under the landing obligation if still required. This second EWG could also focus on the comparison of the data with the economic data call as required for the Annual Economic Report.

If only one EWG meeting is possible in 2021, STECF proposes that processes and methods to assemble the detailed Table A from the Member States' sample data be thoroughly investigated through a dedicated contract ahead of the 2021 FDI data call. This would leave enough time during the EWG meeting to address the other requests.

*STECF conclusions for ToR 3*

STECF concludes that dissemination of EWG outputs in form of sets of capacity, catches and effort tables and maps of EU fleets landings and effort is of generic interest both within and outside STECF requirements, as discussed in PLEN 19-03, and is to be encouraged.

For the appropriate dissemination of FDI data, ensuring the quality of the information and preserving the data confidentiality, STECF supports the proposal of the EWG to issue a data dissemination *ad hoc* contract in 2021. This dissemination contract will be focused on merging Table A with biological data Tables (C, D, E and F) and proposing dissemination methods.

*STECF conclusions for data call*

To populate the FDI database with the biological data from the Mediterranean and Black Sea, STECF suggests that DG MARE sends a letter to the Member States requesting authorisation to transfer data from the Med BS database to the FDI database at JRC using transfer protocol to be agreed (the protocol could also be agreed and defined during the methodology EWG meeting). If this is not possible, Member States could be asked directly to submit the biological data from the Mediterranean and Black Sea under the FDI data call.

STECF agrees with the suggestion of EWG 20-10 to request historical data backwards one year at the time. In 2021, the data call will thus request data for both 2014 and 2020.

**Contact details of STECF members**

[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: https://stecf.jrc.ec.europa.eu/adm-declarations

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# REPORT TO THE STECF

# EXPERT WORKING GROUP ON
# Fisheries Dependent Information – "FDI" (EWG-20-10)

# Virtual meeting, 14-18 September 2020

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

# 1      INTRODUCTION

The STECF EWG 20-10 met as a virtual meeting during 14–18 September 2020. The meeting was opened at 9 am on 14 September and was adjourned at 16.30 on 18 September 2020. Working conditions were challenging but adequate.

## 1.1      Terms of Reference for EWG-20-10

**DG Mare focal person:** Evelien Ranshuysen and Jonathan Shrives

**Chairs:** Willy Vanhee and Arina Motova

**Background**

An STECF Expert Working Group on Fisheries Dependent Information will be convened from 14-18 September 2020 in a virtual meeting to review the data transmitted by Member States under the 2020 FDI data call to judge:

     i) If data submitted is complete in terms of areas of fishing, types of fleet segment and gear operated and species identified;

     ii) If data submitted is complete in terms of type of data requested: capacity metrics, effort metrics, landings, discards and spatially disaggregated landings and effort.

In addition, the EWG is asked to map the data on fishing effort obtained from the call for spatially disaggregated data.

In considering the completeness of the data submitted the EWG is entitled to use external sources of data where necessary, as well as expert judgement.

**Terms of Reference EWG 20-10**

Based upon the STECF EWG 19-11 conclusions including the establishment of common practices (use of confidentiality data records and dissemination tools), and the methodology concluded to partition data (numbers at length) from Tables C and D (aggregations according to sampling programs) to Table A (detailed catch table), the STECF EWG is requested to:

**1 – Review and document completeness of the data set and feedback from Member States on approaches used and problems encountered in responding to the data call.**

1. As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT).  Such issues should be reported in full within 2 weeks of the end of the EWG.

2. Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2021.

3. Review data quality checks and produce National methodological chapters.

## 2 – Provide landings and discards data for exemptions in discard plans.

Based upon the previous work and method established in STECF EWG 19-11:

1. STECF is asked to provide figures for landings and discards in 2019, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021.

2. STECF is asked to assess and if possible, provide percentages of discards estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021.

3. Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards[1]) for 2019, if possible and enough data provided during data call.

## 3 - Produce dissemination tables and maps of spatial effort and landings by c-squares

1. Discuss and agree the format of the biological data (FDI Tables C, D, E and F) and of the refusal rate data to be publicly disseminated (FDI Table B).

2. If GIS technical skills are available in the EWG, produce maps of effort and landings by c-square (to be inserted in the EWG report) for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):

   a. Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters[2]

   b. Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and traps.

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[1] 'Discards' are defined here as the fish/crustaceans thrown overboard.

[2] Defined here as waters not covered by the previously listed areas.

## 2    DATA PROVISION AND CHECKS

### 2.1 DCF FDI data call 2020

The DCF Fisheries Dependent Information (FDI) data call 2020 was launched on 23 July 2020 with the legal deadline on 7 September 2020.

The 2020 FDI data call was consistent with the comments and suggestions from the EWG 19-11 (see the STECF report of the EWG 19-11). In particular, the following changes proposed during the EWG 19-11 were implemented in the 2020 data call:

- In order to improve the data provided for the *Nephrops* stocks distinguishing the different Functional Units (FUs), an extra column called NEP_SUB_REGION was added to the tables A, C, D, E and F.

- To estimate the weight of discards and landings above and below Minimum Conservation Reference Size (MCRS), two new columns called respectively MEAN_WEIGHT_AT_LENGTH and WEIGHT_UNIT were added in tables D and F.

- A column called PRINCIPAL_SUB_REGION was added in table J indicating the sub-region (i.e. GSA for the Mediterranean and Black Sea) where a vessel carries out most of his fishing activity during the year.

- In order to have all discard estimates provided at the domain level (DOMAIN_DISCARDS), a new optional table (called Table K) was added requesting discard weight by domain.

The data format to be used to answer the data call was detailed in the annex sent to the Member States with the official letter. The annex was also published with the Excel templates on the JRC DCF website (https://datacollection.jrc.ec.europa.eu/data-calls).

In the annex to the data call, 15 tables were described, among which 1 was optional and 5 were not requested for Mediterranean and Black Sea regions (GFCM GSAs).

Data were requested for 5 years (from 2015 to 2019) for all the tables except table H and table I that contain spatial information. For Mediterranean and Black Sea regions (GFCM GSAs), spatial data were requested for the period 2017-2019 only; data for years 2015 and 2016 were welcomed if available, but their submission was not compulsory.

**Declaration about data confidentiality**

In the context of the confidential data used during the EWG 20-10 meeting, the experts signed the following declaration at the beginning of the meeting.

*In order to answer the term of reference of the EWG 20-10, the Fisheries Dependent Information (FDI) data provided by Member States in the context of the DCF FDI 2019 data call will be used. The FDI data call requests data at a detailed level; for this reason, it is possible for Member States to mark data as confidential.*

*I hereby declare that I was informed by the STECF secretariat and the chairs of the EWG 20-10 that the dataset used during the EWG contains some confidential data and that access to and use of the dataset is only permitted in the EWG context. Consequently, all DCF FDI datasets shall be removed all the electronic supports used (e.g. hard disk, memory stick, etc.), and no electronic or paper copies of the data shall be kept by experts after completion of the EWG 20-10 report.*

*Signing the present declaration, I acknowledge that I was informed on the above.*

### 2.2    Data checks on uploads and data evaluations before EWG 20-10 meeting

*Timeliness and coverage*

Both timeliness and coverage improved compared to the previous year (2019) data call.

All Member States submitted data by the legal deadline of the data call (see Table 2.2.1.a and 2.2.1.b).

**Table 2.2.1.a:** Timeliness overview: data sets uploaded by Member States during the FDI data call with the date of the first successful upload (Table K is optional).

| Data set | Belgium | Bulgaria | Croatia | Cyprus | Denmark | Estonia | Finland | France | Germany | Greece | Ireland | Italy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TABLE_A | 03/09/2020 | 21/08/2020 | 04/09/2020 | 07/09/2020 | 05/09/2020 | 07/09/2020 | 12/08/2020 | 07/09/2020 | 02/09/2020 | 07/09/2020 | 31/08/2020 | 04/09/2020 |
| TABLE_B | 30/07/2020 | 25/08/2020 | | 04/09/2020 | 02/09/2020 | | 04/09/2020 | | 02/09/2020 | | 31/08/2020 | |
| TABLE_C | 04/09/2020 | | | | 05/09/2020 | 07/09/2020 | 14/08/2020 | 11/09/2020 | 03/09/2020 | | 06/09/2020 | |
| TABLE_D | 06/09/2020 | | | | 06/09/2020 | 07/09/2020 | 17/08/2020 | 07/09/2020 | 02/09/2020 | | 06/09/2020 | |
| TABLE_E | 06/09/2020 | | | | 07/09/2020 | 07/09/2020 | 17/08/2020 | 11/09/2020 | 03/09/2020 | | 06/09/2020 | |
| TABLE_F | 07/09/2020 | | | | 07/09/2020 | 07/09/2020 | 19/08/2020 | 07/09/2020 | 02/09/2020 | | 06/09/2020 | |
| TABLE_G | 29/07/2020 | 21/08/2020 | 04/09/2020 | 04/09/2020 | 27/08/2020 | 07/09/2020 | 17/08/2020 | 04/09/2020 | 20/08/2020 | 07/09/2020 | 02/09/2020 | 04/09/2020 |
| TABLE_H | 30/07/2020 | 25/08/2020 | 04/09/2020 | 04/09/2020 | 27/08/2020 | 07/09/2020 | 20/08/2020 | 04/09/2020 | 24/08/2020 | 07/09/2020 | 02/09/2020 | 07/09/2020 |
| TABLE_I | 30/07/2020 | 25/08/2020 | 04/09/2020 | 04/09/2020 | 27/08/2020 | 07/09/2020 | 20/08/2020 | 04/09/2020 | 24/08/2020 | 07/09/2020 | 02/09/2020 | 07/09/2020 |
| TABLE_J | 29/07/2020 | 21/08/2020 | 04/09/2020 | 31/08/2020 | 27/08/2020 | 07/09/2020 | 20/08/2020 | 04/09/2020 | 20/08/2020 | 07/09/2020 | 02/09/2020 | 04/09/2020 |
| TABLE_K | 06/09/2020 | | | | 06/09/2020 | | | | 03/09/2020 | | | |

**Table 2.2.1.b:** Timeliness overview: data sets uploaded by Member States during the FDI data call with the date of the first successful upload (table K is optional).

| Data set | Latvia | Lithuania | Malta | Netherlands | Poland | Portugal | Romania | Slovenia | Spain | Sweden | United Kingdom |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TABLE_A | 25/08/2020 | 14/08/2020 | 07/09/2020 | 06/09/2020 | 04/09/2020 | 02/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 03/09/2020 | 03/09/2020 |
| TABLE_B | 27/08/2020 | 14/08/2020 | 07/09/2020 | | 04/09/2020 | 07/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 07/09/2020 | 04/09/2020 |
| TABLE_C | 27/08/2020 | 18/08/2020 | | 07/09/2020 | 04/09/2020 | 07/09/2020 | | | 08/09/2020 | 03/09/2020 | 03/09/2020 |
| TABLE_D | 27/08/2020 | 18/08/2020 | | 07/09/2020 | 04/09/2020 | 07/09/2020 | | | 08/09/2020 | 03/09/2020 | 03/09/2020 |
| TABLE_E | 27/08/2020 | 18/08/2020 | | 07/09/2020 | 04/09/2020 | 07/09/2020 | | | 08/09/2020 | 03/09/2020 | 03/09/2020 |
| TABLE_F | 27/08/2020 | 18/08/2020 | | 07/09/2020 | 04/09/2020 | 07/09/2020 | | | 08/09/2020 | 06/09/2020 | 04/09/2020 |
| TABLE_G | 27/08/2020 | 18/08/2020 | 07/09/2020 | 07/09/2020 | 04/09/2020 | 02/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 03/09/2020 | 23/08/2020 |
| TABLE_H | 27/08/2020 | 18/08/2020 | 07/09/2020 | 07/09/2020 | 04/09/2020 | 02/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 03/09/2020 | 21/08/2020 |
| TABLE_I | 27/08/2020 | 18/08/2020 | 07/09/2020 | 07/09/2020 | 04/09/2020 | 02/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 06/09/2020 | 24/08/2020 |
| TABLE_J | 27/08/2020 | 18/08/2020 | 07/09/2020 | 07/09/2020 | 04/09/2020 | 03/09/2020 | 18/08/2020 | 31/07/2020 | 07/09/2020 | 04/09/2020 | 07/09/2020 |
| TABLE_K | | | | | 04/09/2020 | | | | | | |

As shown in Figure 2.2.1, many Member States re-uploaded data after the legal deadline because the checks conducted by JRC revealed errors in the uploaded data and/or missing data. However, compared to the previous year, the number of re-uploads during the EWG was much lower, allowing experts more time to work on the ToRs assigned to the working group.

Regarding data coverage, Member States submitted data for most of the variables for all the years requested.

The coverage of discards data in Table A is generally poor largely because the agreed sampling schemes in National Work Plans are designed primarily to obtain fishery dependent data for stock assessments of the major stocks and fleets. Resources to undertake sampling are also limited which means fleet-specific data are not always available at the level of disaggregation specified in the FDI data call.

For all the 5 years, from a total of 2,263,169 rows, there are 288,464 entries with an estimate for discards greater than 0; 250,471 entries with discards equal to 0; and 1,724,234 entries with discards not known (NK code).
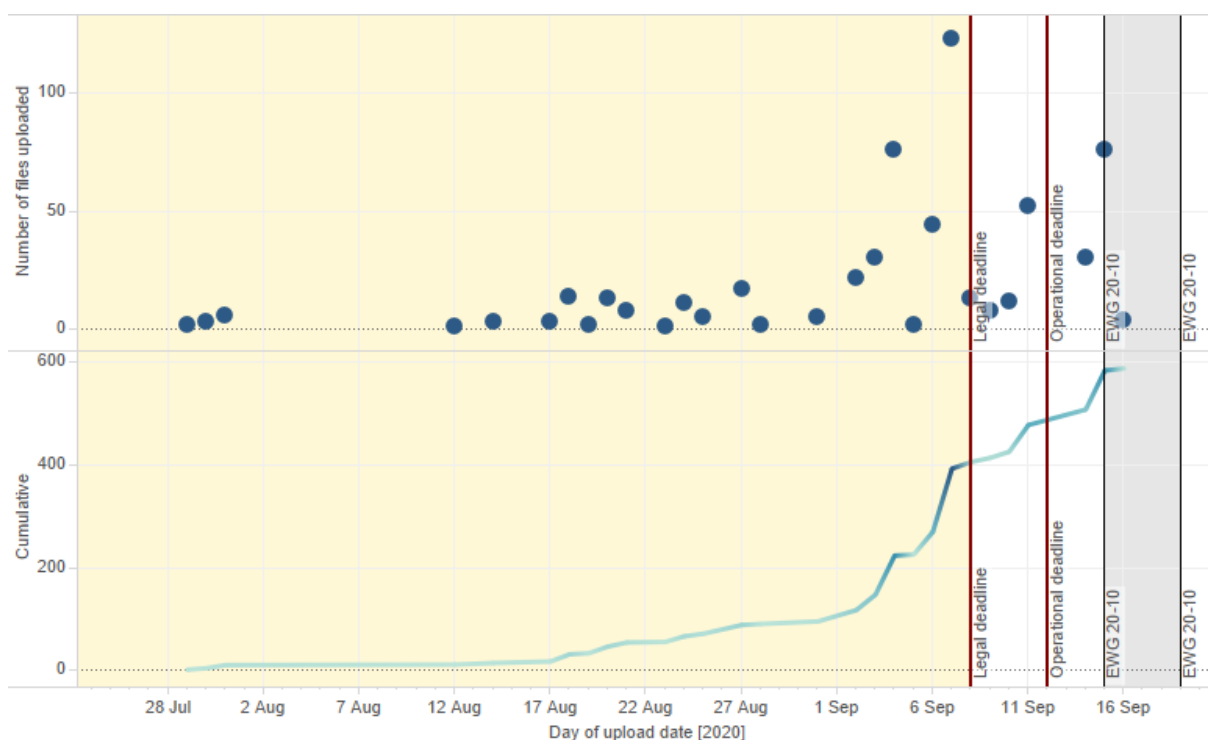
**Figure 2.2.1:** Uploading progress: the graph shows the number of datasets (i.e., files Excel) uploaded over the time period covering the FDI data call and the EWG 20-10.

Considering the landings for all 5 years 2015-2019, from total reported landings of 26,037,750 tonnes, only 3,784,983 tonnes of landings had corresponding reported discard estimates greater than 0; discards was reported equal to 0 for 3,681,101 tonnes of landings; and discards is not known for 18,571,665 tonnes of landings. In Table 2.2.2 the coverage of discards is reported by year.

**Table 2.2.2:** Discards coverage in Table A.

| Year | Landings provided with discards>0 | Landings provided with discards=0 | Landings provided with discards=NK | Landings provided total |
|---|---|---|---|---|
| **2015** | 820,068 tonnes | 678,280 tonnes | 3,763,000 tonnes | *5,261,350 tonnes* |
| **2016** | 818,367 tonnes | 687,863 tonnes | 3,676,545 tonnes | *5,182,776 tonnes* |
| **2017** | 707,731 tonnes | 772,271 tonnes | 3,946,382 tonnes | *5,426,384 tonnes* |
| **2018** | 754,208 tonnes | 811,499 tonnes | 3,789,585 tonnes | *5,355,294 tonnes* |
| **2019** | 684,608 tonnes | 731,186 tonnes | 3,396,152 tonnes | *4,811,946 tonnes* |

Concerning the data on refusal rates requested in Table B: Croatia, Estonia, France, Greece, Italy, Netherlands did not provide this table (see Table 2.2.3). In addition, Lithuania and Romania provided data with all the variables set to not known (NK value).

**Table 2.2.3:** List of Member States that provided table B with the number of rows where the refusal rate variable is different from NK (not known).

| Country | Template | Variable | Year 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|
| Belgium | TABLE_B | refusal_rate (rows number) | 1 | 1 | 1 | | |
| | | trips sampled onboard (rows number) | 1 | 1 | 1 | | |
| Bulgaria | TABLE_B | coverage rate (rows number) | | | | 4 | 4 |
| | | refusal_rate (rows number) | | | | 4 | 4 |
| | | trips sampled onboard (rows number) | | | | 4 | 4 |
| Cyprus | TABLE_B | coverage rate (rows number) | 2 | 2 | 2 | 2 | 1 |
| | | refusal_rate (rows number) | 1 | 1 | 2 | 2 | 1 |
| | | trips sampled onboard (rows number) | 2 | 2 | 2 | 2 | 1 |
| Denmark | TABLE_B | coverage rate (rows number) | 7 | 7 | 6 | 6 | 6 |
| | | refusal_rate (rows number) | 7 | 7 | 6 | 6 | 6 |
| | | trips sampled onboard (rows number) | 7 | 7 | 6 | 6 | 6 |
| Finland | TABLE_B | refusal_rate (rows number) | | | | | 13 |
| | | trips sampled onboard (rows number) | | | | | 13 |
| Germany | TABLE_B | coverage rate (rows number) | 9 | 9 | 9 | 9 | 9 |
| | | refusal_rate (rows number) | 9 | 9 | 9 | 9 | 9 |
| | | trips sampled onboard (rows number) | 9 | 9 | 9 | 9 | 9 |
| Ireland | TABLE_B | coverage rate (rows number) | | | | 3 | 4 |
| | | refusal_rate (rows number) | | | | 3 | 4 |
| | | trips sampled onboard (rows number) | | | | 3 | 4 |
| Latvia | TABLE_B | coverage rate (rows number) | 4 | 4 | 4 | 4 | 4 |
| | | refusal_rate (rows number) | 4 | 4 | 4 | 4 | 4 |
| | | trips sampled onboard (rows number) | 4 | 4 | 4 | 4 | 4 |
| Malta | TABLE_B | coverage rate (rows number) | 5 | 5 | 3 | 4 | 5 |
| | | refusal_rate (rows number) | | 5 | 3 | 4 | 5 |
| | | trips sampled onboard (rows number) | 5 | 5 | 3 | 4 | 5 |
| Poland | TABLE_B | coverage rate (rows number) | | | 15 | 15 | 15 |
| | | refusal_rate (rows number) | | | 13 | 14 | 14 |
| | | trips sampled onboard (rows number) | | | 15 | 15 | 15 |
| Portugal | TABLE_B | coverage rate (rows number) | | | 6 | 6 | 6 |
| | | refusal_rate (rows number) | | | 6 | 6 | 6 |
| | | trips sampled onboard (rows number) | | | 6 | 6 | 6 |
| Slovenia | TABLE_B | coverage rate (rows number) | 1 | 1 | 1 | 1 | 1 |
| | | trips sampled onboard (rows number) | 1 | 1 | 1 | 1 | 1 |
| Spain | TABLE_B | coverage rate (rows number) | | 3 | 5 | 4 | 4 |
| | | refusal_rate (rows number) | | 3 | 5 | 4 | 4 |
| | | trips sampled onboard (rows number) | | 3 | 5 | 4 | 4 |
| Sweden | TABLE_B | coverage rate (rows number) | 43 | 41 | 42 | 48 | 39 |
| | | refusal_rate (rows number) | | 27 | 26 | 28 | 22 |
| | | trips sampled onboard (rows number) | 44 | 41 | 42 | 48 | 39 |
| United Kingdom | TABLE_B | coverage rate (rows number) | | 5 | 16 | 16 | 19 |
| | | refusal_rate (rows number) | | 5 | 16 | 16 | 19 |
| | | trips sampled onboard (rows number) | 5 | 5 | 17 | 17 | 20 |

### Checks during the upload of the data

The majority of the checks performed during the upload of the data concerned the use of valid codes listed in the various appendices of the data call and the type of the data entered (numeric or text).

In particular, the upload tool verified the format of the files provided and checked the codes used to specify the following information: country, fishing technique, vessel length, gear type, target assemblage, mesh size range, metier, species, supra-region, sub-region, geographical indicator, EEZ indicator, deep fisheries, specific conditions related to technical measures (variable name: specon tech).

In addition, in Tables A, G, H and I, the consistency between sub-region codes and EEZ indicator codes were verified; in Tables C and D, the age value was validated against the min-max age range provided; in tables D and F, the length value was validated against the min-max length range provided; and in tables H and I, the format of the c-square was checked.

In the upload tool, the following check among different tables was provided: during the upload of Tables C, D, E, F and K, a control was performed on the presence of domain landings and domain discards codes in Table A for the same country, year and species.

### *Post-upload data checks*

After the upload of the data by Member States, the JRC carried out quality checks for:
- Consistency between the data submitted and the specification of the data call
- Consistency between the data submitted in the different tables of the FDI data call
- Data comparison among years
- Cross checks with another data source (EUROSTAT data)

In more detail, the following checks were performed and visualized with Tableau:
- Comparison of any given metric over the time series (2015-2019).
- Using the total weight landings and total value landings fields from table A, an average price per species and year were calculated and compared to the average price calculated per country.
- Comparison between discards [tonnes] and the sum of products [tonnes] = no_age [number in thousand]*mean_weight [kg] (Tables C and D).
- Comparison between totwghtlandg [tonnes] and the sum of products [tonnes] = no_age [number in thousand]*mean_weight [kg] (Tables E and F).
- Where domain landings codes match between Tables A, E and F, the sum of total weight landings values in Table A for the given domain name was check against the total weight landings value in Tables E and F.
- Where domain discards codes match between Tables A, C and D, the sum of total weight landings values in Table A for the given domain name was check against the total weight landings value in Tables C and D.
- Comparison between total weight landings and total value landings: totwghtlandg>0 and totvallandg=0 in Table A.
- Comparison between weight landings and effort: totwghtlandg>0 in Table A and effort (totfishdays and totseadays) not present or NK in Table G.
- Comparison between spatial weight landings in Table H and weight landings in Table A: totwghtlandg>0 in Table H and totwghtlandg not present in Table A.
- Comparison between spatial effort in Table I and effort in Table G: totfishdays>0 in Table I and totfishdays not present or NK in Table G.
- Average length vessels compatibility with the vessel length category (Table J).
- Comparison of number of vessels from Table J and Table G: totves>0 in Table G and totves in Table J is not present or NK.

The most relevant issues highlighted by the data checks implemented at JRC were as follows:
- Data provided with different unit of measures (in Tables A, C, D, E, F, G, H and I).
- Row data provided instead of data raised to the total production (in Tables C, D, E and F).
- For the same domain landings, different values of total weight landings (in Tables E and F).

- For the same domain discards, different values of discards (in Tables C and D).
- For the same domain discards, different values of total weight landings (in Tables C and D).

### Cross-checks with EUROSTAT data

The purpose of cross-checks with an external data source was to check for completeness of submitted data sets. EUROSTAT datasets were downloaded from:

http://ec.europa.eu/eurostat/web/fisheries/data/database

Results of the checks were made available to national correspondents (with access credentials that restricted them to seeing information about their own country only) and the EWG 20-10 experts (with access credentials that allowed them to see information about all countries)

## 3   RESPONSES TO THE TERMS OF REFERENCE

### 3.1   Review and document completeness of the data set and feedback from Member States on approaches used and problems encountered in responding to the data call

#### 3.1.1   *As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT)*

The data provided by Member States in response to the 2020 FDI data call and incorporated into the FDI database hosted by the JRC, represents the most comprehensive data set currently available.  Nevertheless, a limited number of shortfalls in data collection and provision remain.

The EWG was requested to record all unresolved data transmission issues online via the data transmission monitoring tool (https://datacollection.jrc.ec.europa.eu/web/dcf/dtmt). However, due to unresolved technical issues, confounded by the Covid-19 pandemic, the DTMT tool was unavailable. Hence, important data transmission issues, which the EWG considers require an explanatory comment from Member States, were recorded in an Excel version of the Data Transmission Monitoring Tool (DTMT). As far as was practically possible, such issues were reported in accordance with the current guidelines[3].

Since access to data transmission issues must be restricted to the relevant Member States, the completed Excel template will not be made publically available. DG MARE Unit C3 will be provided with the data transmission issues in an Excel template. DG MARE will need to decide how best to communicate the data issues to the relevant Member States.

#### 3.1.2   *Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2021*

The EWG reviewed the outputs of the *ad hoc* contract (Ref STECF 2076 – Ad-hoc contract in support of STECF EWG 20-10: Fisheries Dependent Information) awarded to provide catches, landings and discards (catch fractions), at a level of aggregation corresponding to the fleet, area and gear type as specified in each anticipated exemption of each discard plan for 2021.

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[3] DTMT Guidance version 30052019.docx. The expert group notes that the STECF EWG 20-08 report (pages 38-41) proposed several modifications to the DTMT guidance and the STECF (PLEN 20-02), stated "*STECF considers that STECF EWGs working with data should continue working with the current version of the DTMT and the DTMT guidance document for the time being. STECF PLEN 20-03 should be tasked with finalising the DTMT guidance document and providing details of the required technical changes to the DTMT web portal to the JRC.*"

The methodology used is appropriate although in a number of cases, the estimates from exemptions were based on a small number of discard samples only or in the absence of any appropriate samples, the estimates were derived using extrapolation (so-called 'fill-ins').

Therefore, recalling the obsevations of the EWG 19-11, EWG 20-10 wishes to emphasise that the discard estimates are derived using data collected under sampling plans that are not designed to provide data at the level of detail required to specifically address requests for exemptions from the obligation to land all catches. The discard estimates provided in Table A are fundamental to estimating the expected discard fraction associated with each exemption requests. However, such estimates may not be representative of the true level of discarding for those vessels to which an exemption is to apply, especially if such vessels were not sampled for discards. In order to 'fill-in' estimates for fleets that are not sampled for discards, the available sample data are aggregated across strata. As a result, in doing so, many untested assumptions have to be made, such as Member State variation in species naming codes (e.g. HOM/JAX) and spatial aggregations (i.e. *Nephrops* Functional Units). As a consequence and recalling the conclusion of the STECF EWG 17-12, such 'fill-in estimates' *will likely not be statistically sound and may be biased because for example of the need to assume equal discard rates among the disaggregated levels contained within the retained strata'*. Hence, the estimated discards cannot be considered robust, but still may provide a useful overview to DG MARE.

EWG also analysed the sources of Member States discard information (see Table 3.1.1). The information from 18 Member States was available to the EWG. Discard data were derived from scientific sampling programmes by 11 Member States and from logbook information by 2 Member States. 5 Member States obtained the discard information from both scientific sampling programmes and logbooks and 1 Member State mentioned other sources. The different origin of discard data means that it is difficult to make direct comparisions between Member States. Nevertheless, the EWG considers that the discard information provided under the FDI data call should be the best information available and stresses the need for Member States to provide data that are representative of the level of discarding and are statistically sound.

The EWG recognises that output from ad hoc contract (Ref STECF 2076) is a valuable planning tool for DG MARE, and the EWG endeavoured to provide estimates of catch fractions for as many as possible exemptions anticipated for 2021. However, EWG was not able to provide catch fractions for exemptions containing operation-specific conditions such as engine power (kW), tow duration (≤90 mins) and proximity to the shore (within 12 nautical miles), as such information is not available in the FDI database. Therefore, EWG could extract only partial information for some exemptions.

**Table 3.1.1:** Source of discard information used by EU Member States to estimate discards for Table A.

| Member State | Scientific sampling | Logbooks | Combination of both | Other |
|---|---|---|---|---|
| BEL | X | | | |
| BGR | | X | | |
| CYP | | | X | |
| DUE | X | | | |
| DNK | | | X | |
| ESP | | | X | |
| EST | | | X | |
| FRA | X | | | |
| GRC | X | | | |
| HRV | | X | | X |
| IRL | X | | | |
| ITA | X | | | |
| LTU | | | X | |
| LVA | X | | | |
| NLD | X | | | |
| POL | X | | | |

| Member State | Scientific sampling | Logbooks | Combination of both | Other |
|---|---|---|---|---|
| PRT | X | | | |
| SWE | X | | | |
| **Sum** | **11** | **2** | **5** | **1** |

Member State specific catch fractions were provided for the majority of anticipated 2021 exemptions. Two sets of estimates were computed:

    i)      estimates for exempted fleets for which discard sample data were provided and

    ii)     estimates for exempted fleets for which no sample data were available, so-called 'fill-ins'.

A rudimentary, but much-needed measure of quality and sampling coverage was computed for the discard estimates ('% of total landings'). The value for '% of total landings' represents the weight of landings from which the discard samples were taken, divided by the total landings from the fleet operating under each exemption.

The results are presented in section 3.2.1 and Annex 2. Although results provide discard estimates by exemption, in some cases, such estimates may at best be imprecise (see above) and may not be representative of the true level of discards of the fleets fishing under each particular exemption.

### 3.1.3 *Review data quality checks and produce National methodological chapters*

The EWG recognises the potential benefits of making the the FDI database publicly available. However, there are concerns on how the data will be used by third parties, particularly the sampling data (discards and biological estimates). We emphasise that there is a need to manage expectations of end-users based on the resolution of the sampled data (discards, length- and catch-at-age distributions): to request data at such high levels of aggregation requires an estimation procedure that respects the sampling design and the samples available in the targeted aggregation level. Under most, present sampling designs and sampling efforts currently in place, the quality of the estimates uploaded cannot be assured, at the high level of disaggregation the STECF FDI data call specifies. This is an extremely important point and needs to be understood by all potential users of the data. The EWG therefore proposes that processes and methods to assemble the detailed Table A from the Member States' sample data be thoroughly investigated through a dedicated contract ahead of the 2021 FDI data call (see section 3.3.1 Recommendations from EWG).

The EWG suggests that to ensure that data held in the FDI database are quality assured, in future a dedicated Expert Group meeting needs to be convened annually simply to check the data provided by Member States in response to FDI data calls. While the EWG recognises that it is the responsibility of Member States to provide checked and validated data, there are issues that will inevitably arise for numerous reasons e.g. misinterpretation of what is being requested, coding misspecification between different databases in Member States and simple human error. Already numerous automatic checks have been implemented during and post-upload. However, there will always be a requirement for Expert checks to be undertaken. Hence the EWG 20-10 reiterates its suggestion that the Terms of Reference for such a dedicated meeting should be restricted to aspects of checking the integrity of the database and should not include any requests for advice. Once the database has been cleared for interrogation, such requests for advice from the STECF can be put to a different Expert Group or to a follow-up to the dedicated data checking EWG. Either way, it is highly desirable that experts with an intimate knowledge of the database participate in such a EWG.

Member States sections on Methodology, Data availability, Coverage, Problems encountered and other comments related to data submitted to FDI data call are listed in Annex 1.

**3.2 Provide landings and discards data for exemptions in discard plans**

*3.2.1* ***STECF is asked to provide figures for landings and discards in 2019, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021. Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards) for 2019, if possible and enough data provided during data call.***

*Discard estimates by exemption – (General – Methodology – Shortcomings – Extraction procedure)*

**General Conclusions**

While the EWG attempted to provide discard estimates for each anticipated exemption for 2021, it was not feasible to produce such estimates for exemptions that require e.g. detailed trip and vessel level information (i.e. distance fished from shore and vessels engine power) which do not currently exist in the FDI database. Therefore, exemptions were characterised in three groups; yes, partially or no, based on the feasibility of the EWG to extract the relevant data. In case of partial data extraction, the part of exemptions which could not be extracted from the data set are highlighted in bold red in the summary table below. All results under this ToR must be interpreted with caution, taking into account the shortcomings listed below.

Given that the exemptions show a wide variety of definitions to identify a certain group of vessels (and it cannot be predicted what will happen in future years), a specific data call asking Member States to provide data relating to the vessels to which a proposed exemption is likely to apply, may be a better option than using data provided to populate the FDI database.

**Methodology and Shortcomings**

The group based the calculation of the discards by exemption on estimates available in Table A. These estimates are the result of the partitioning *(done by Member State, following the conclusion of the STECF Expert Working Group 17-12)* of discard estimates available in Tables C&D into the detailed disaggregated levels specified in the Table A of the FDI data call.

The variable Domain is used to link the discard estimates in tables C&D to Table A. The variable Domain is defined by the Member State, and its structure describes the raising procedure and sampling deign used by Member States to estimate discards. The EWG 20-10 stresses that such estimates may not be reliable estimates of the true discards.

The EWG has attempted to provide an estimate of different catch fractions for fleets that are likely to take advantage of anticipated exemptions from the landing obligation in 2021, based on data provided for 2019. The following shortcomings have to be taken into account to avoid misinterpretation of results:

1. The EWG notes that the data call asked for scientific estimates of discards (see also Table 3.1 for Member States specific data sources used during 2020 FDI data call).  The estimated values based on scientific sampling programs are uncertain (and potentially biased) and do not constitute an official estimate like landings reported in logbooks.  Therefore, any estimate provided under ToR2 for discards of species under the landing obligation cannot be interpreted as discards for control purposes of de-minimis exemptions.

2. The EWG further notes that providing reliable and robust estimates of catches, i.e. landings and discards for fleets that are granted exemptions from the landing obligation is problematic. For many of these fleets, estimates are unavailable, because Member States are not obliged to sample these metiers according to the national DCF sampling plans. For those fleets where discards have been sampled, the achieved sampling coverage is often much lower than required to provide a robust estimate of the true discard fractions at the level of disaggregation requested by FDI. At best, such estimates are likely to be rather uncertain. In general, the sampling programs under the DCF are designed to inform assessments of stocks and not provide discard information in the highly disaggregated format requested in the FDI data call.  Alternatively, official logbook information could be used. However, for most Member States and fisheries, the records of unwanted catch fractions (discards + BMS landings) in logbooks are believed to be an

unreliable source of information. To improve the situation, Member States may have to find ways to improve compliance and may have to adapt their national sampling programs especially in cases where they have a larger amount of landings under a certain exemption, but no discard information. To provide estimated catch fractions for fleets that have not been sampled requires extrapolation of catch samples taken from other fleets which may not be representative of the catch composition of the unsampled fleets, because of differences in fishing patterns (where, when and how the fleets fish), target species, catch quota and differences in species and size selectivity etc. A further complication arises when the sampled catch fractions of a particular fleet or fleets relate to only a small proportion of the total catch of the same species by all fleets involved in a fishery. It is impossible to judge whether the estimates of the discard fractions derived from extrapolation of sampled fleets are likely to be representative of those fleets that are not sampled.

In principle, there is scope for the EWG to use its expert judgement to determine whether the catch fraction estimates from sampled fleets are likely to be representative of the catches for other fleets. However, in practice, such an assumption may be erroneous because, influence of factors, such as differences between the fleets in fishing pattern, timing of fishing and quota availability are not always known by the EWG. Therefore, the estimates based on extrapolation may be inaccurate. Hence the EWG considers that extrapolating catch fraction estimates for one fleet or fleets to other fleets simply to generate fleet-specific estimates needs to be carefully considered and be restricted to fleets likely to have similar catch compositions. Therefore, the EWG has adopted the following selection criteria:

**For all areas apart from the Mediterranean Sea (outside area 37)**

year, quarter, species, sub_region, gear_type, mesh_size_range, target_assemblage, specon_tech

**For the Mediterranean Sea (area 37)**

year, quarter, species, sub_region, metier, specon_tech

In more detail, the following procedure and equations were used:

Let the following notation be: D=discards, L= landings, *snf* = national fishery with a discard estimate from 0 to X, *unf* = non-sampled fishery without discard information.

The available landings and discards are aggregated (summed) over fisheries

- for all areas apart from the Mediterranean Sea, by year, quarter, species, sub_region, gear_type, mesh_size_range, target_assemblage, specon_tech

- for the Mediterranean Sea, by year, quarter, species, sub_region, metier, specon_tech

and mean discard rates DR are calculated:

$$DR = \frac{\sum_{snf} D_{snf}}{\sum_{snf}(L_{snf}+D_{snf})} \qquad \text{if} \qquad D_{snf} \geq 0 \quad \text{and with} \quad L_{snf} + D_{snf} > 0$$

Fisheries specific discard amounts are then calculated if no discard information is available by

$$D_{unf} = \frac{L_{unf}.DR}{(1-DR)} \qquad \text{where } D_{unf} \quad \text{is null (empty)}$$

Fisheries without any quantitative discard information, i.e. no average DR could be estimated, remain without any discard estimation.

For 2019, the data submitted in response to the data call amounted to 4,811,946 tonnes of landings, 29.4% of which (1,415,794 tonnes) were reported with associated discard estimates. 731,186 tonnes (15.2% of the total reported landings) had discard estimates of zero i.e. no discards. Despite the substantial issues mentioned above and the relatively low proportion of landings with associated discard estimates, the EWG took the decision to provide the discard information for each exemption in 2 separate formats: with and without fill-ins. In most cases, the fill-ins do not add a substantial amount of discard information or increase the coverage substantially. This again highlights the general issue that for several fisheries under exemptions, data from sampling was not sufficent to provide discard estimates, largely because observer programs undertaken under DCF national sampling programs are not designed to specifically

sample fisheries under exemption or are anticipated to avail of a proposed exemption. To provide information about the accuracy of the discards estimates reported and fill-ins, the coverage as percentage of landings with discards is provided in the data Tables (Annex 2).

3. The EWG notes that given the aggregation level of the data in the FDI database, it was impossible to filter the database to the exact fishing tactic specified for the various exemptions. For example, the mesh size categories specified in the FDI database often do not exactly match those defined in certain exemptions. Also area definitions in exemptions were sometimes too detailed (e.g., areas up to a certain longitude or latitude) to match with the aggregation level of the FDI database.

4. The EWG notes that it was sometimes unclear which gear types are under a certain exemption. For example, a large part of *Nephrops* catches are made with gear type OTT in division 3a. However, the discard plans only mention OTB and TBN as gear codes in exemptions for *Nephrops*. In other exemptions for demersal, OTT is mentioned explicitly next to OTB and TBN suggesting that OTT would have been mentioned if catches with OTT are included under a certain exemption. Nevertheless, it is open to interpretation whether TBN (*Nephrops* trawls, an old gear code hardly used in current logbooks) may also contain OTT. To avoid speculations the EWG only used gear codes mentioned explicitly under a certain exemption for filtering the database (i.e. excluding OTT).

5. The EWG further notes that all shortcomings in data quality and coverage identified under ToR 1 also apply to ToR 2 and 3.

**Extraction procedure**

Information, related to certain exemptions was extracted in following steps:

1. All exemptions and their definitions were translated to FDI database codes (see Tables 3.2.2.1 - 3.2.2.5 for the list of FDI codes associated with exemptions);

2. Exceptions and their parts which contained information that could not be found in the FDI data call (i.e distance fished from shore, vessel engine power) are highlight in bold red in the summary tables (Tables 3.2.2.1 - 3.2.2.5). Those marked in bold red were either not estimated or estimated using partial data while ignoring missing information.

3. The data for each exemption were extracted from both the FDI database and the database with fill-ins using codes described in the Tables 3.2.2.1-3.2.2.5;

4. The information was summarised in two main formats:

   a. Tables with landings and discards reported by MS and estimated for the fleets under exemptions (Annex 2, Tables 1-8)

   b. Tables with FDI data reported and filled in aggregated by species and subregions (Annex 2, Tables 9-13)

   **In both sets of tables there are the following columns:**

- 'Total weight of landings, tonnes' – total landings recorded in FDI database for particular excemption and species;

- Discards (with or without fill-inns) – weight of discards reported to FDI and estimated using fill-ins;

- 'Coverage % of total landings reported' - percentage of total weight of landings for which associated discard estimates data were reported under the FDI data call and estimated using fill-ins.

   **In all Annex 2 Tables the following abbreviations are used:**

- c – data reported as confidential during the data call, if there are more than 4 métiers which are reported by a Member State as confidential, the data are considered not to be confidential after aggregation, as there would be no possibility to attribute the aggregate catches to identify individual vessels;

- n.a. – not available.

### 3.2.2 *Discard estimates by exemption*

The estimated discards for fleets likely to make use of anticipated exemptions to the landing obligation in 2021, the details of the anticipated exemptions and associated data availble are given for each region in sections 3.2.2.1 to 3.2.2.5 and in Annex 2 Tables 1-8

#### 3.2.2.1 Baltic Sea region

**Table 3.2.2.1:** The anticipated exemptions for discard plans for 2021 in the Baltic Sea region and the related FDI codes.

| | Exzmption Articla | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | arget Assemblag | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **2021** | | | | | | | | |
| Survivability | 2018/211,Art3.1 | Baltic (IIIb-d) | Yes | trap nets-creels/pots-fyske nets-pound nets | | FPO-FYK-FPN | All | All | All | | | Salmon | SAL | - |
| | 2018/306 | Baltic (IIIb-d) | Yes | trap nets-creels/pots-fyske nets-pound nets | | FPO-FYK-FPN | All | All | All | | | Plaice | PLE | - |
| MCRS* | 2018/211,Art3(2) | Baltic (IIIb-d), 27.3.d.25-27.3.d.30 and 27.3.d.32 | **Partly** | | | All | All | All | All | | | Salmon | SAL | 60cm |
| | | Baltic (IIIb-d), 27.3.d.31 | **Partly** | | | All | All | All | All | | | Salmon | SAL | 50 cm |
| | 2018/306 | Baltic (IIIb-d) | **Partly** | | | All | All | All | All | | | Cod | COD | 35 cm |
| | 2018/306 | Baltic (IIIb-d) | **Partly** | | | All | All | All | All | | | Plaice | PLE | 25 cm |

\* MCRS are partly because the extraction is not split up by lenght.

## 3.2.2.2 North Sea region

**Table 3.2.2.2:** The anticipated exemptions for discard plans for 2021 in the North Sea region and the related FDI codes.

| Exemption Article | Area | Description | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **2021 - Part 1** | | | | | | |
| JR-xx.2020 Art.11.1 | II-IIIa-IV | De minimis exemption for fishing vessels using trammel nets and gill nets (GN-GNS-GND-GNC-GTN-GTR-GEN-GNF) in 2a, 3a and 4 | Yes | Trammel nets and gill nets | GN-GNS-GND-GNC-GTN-GTR-GEN-GNF | GND-GNS-GNC-GTR-GTN | All | All | All | | All | Sole | Sol | 3% |
| JR-xx.2020 Art.11.2 | IV | De minimis exemption for fishing vessels using TBB gear 80-119 mm with Flemish panel in the North Sea | Yes | Beam trawls | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | TBBFP | All | Sole | SOL | 5% |
| JR-xx.2020 Art.11.3 | IIIa | Fish bycatch caught in Nephrops targeted trawl fishery | Yes | Bottom trawls | OTB-OTT-TBN | OTB-OTT-PTB | 70-89 | 70S90 | All | GRID35 | CRU | Sole-haddock-whiting-cod-saithe and hake | SOL-HAD-WHG-COD-POK-HKE | 4 % of the total annual catches of Nephrops-common sole-haddock-whiting-Northern prawn-cod-saithe and hake |
| JR-xx.2020 Art.11.4 | IIIa | Fish bycatch caught in Northern prawn trawl fishery with sorting grid-with unblocked fish outlet in ICES area 3a | Yes | Bottom trawls | OTB-OTT | OTB-OTT | >35 | 32D80 | All | GRID19 | CRU | sole-haddock-whiting-cod-saithe-plaice-herring-Norway pout-greater silver smelt-blue whiting | SOL-HAD-WHG-COD-POK-PLE-HER-NOP-ARG-ARU-ARY-WHB | 5 % of the total annual catches of species under landing obligation (Norway lobster-common sole-haddock-whiting hake-Northern prawn-cod-saithe-plaice-Norway pout-Argentina spp.-herring and blue whiting |
| JR-xx.2020 Art.11.5 | IIIa | Whiting caught in bottom trawls 90-119 mm with SELTRA panels and bottom trawls with a mesh size of 120 mm and above in the Skagerrak and the Kattegat (ICES Area 3a) | Yes | Bottom trawls | OTB-OTT-TBN-PTB | OTB-OTT-PTB | 90-119 | 80D100-100D110-110D120 | All | SELTRA | All | Whiting | WHG | 2% of the total annual catches of Nephrops-cod-haddock-whiting-saithe-common sole-plaice and hake |
| | | | | | | | >=120 | 120DXX | All | | | | | |
| JR-xx.2020 Art.11.6 | IV | Plaice by-catches in the Nephrops trawl fishery in combination with a technical measure (use of SepNep) | Yes | Bottom trawls | OTB-PTB | OTB-OTT-PTB | 80-99 | 80D100 | All | SEPNEP | CRU | Plaice | PLE | 3 % of the total annual catches of saithe-plaice-haddock-whiting-cod-Northern prawn-sole and Nephrops |
| JR-xx.2020 Art.11.7 | IVb-IVc | By-catches in the brown shrimp fishery in the North Sea | Yes | Beam trawls | TBB | TBB | | 16D32 | All | | CRU | All species subject to catch limits | USK-HER-COD-LEZ-MON-ANF-MNZ-ANK-HAD-WHG-HKE-WHB-WIT-LEM-BLI-LIN-PLE-POL-POK-TUR-BLL-GHL-MAC-SOL-SPR-HOM-JAX-NOP-ARG-ARU-NEP-PRA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK | 6 % of the total catch for all species subject to catch limits |
| JR-xx.2020 Art.11.8 | IV | Ling (Molva molva) for vessels using bottom trawls (OTB,OTT,PTB) with mesh size greater than 120 mm in the North Sea (ICES area 4) | Yes | Bottom trawls | OTB-OTT-PTB | OTB-OTT-PTB | >=120 | 120DXX | All | | All | Ling | LIN | 3 % of the total annual catches of ling |
| JR-xx.2020 Art.11.9 | IVc | Whiting and cod for the vessels using bottom trawls or seines (OTB-OTT-SDN-SSC) of mesh size 70-99mm (TR2) in ICES division 4c | Yes | Bottom trawls-demersal seines | OTB-OTT-SDN-SSC | OTB-OTT-SDN-SSC | 70-99 | 70S90-80D100 | All | | All | Whiting-cod | WHG-COD | 5%-maximum of 2% can be used for cod |
| JR-xx.2020 Art.11.10 | Iva-Ivb | Whiting and cod for the vessels using bottom trawls or seines (OTB-OTT-SDN-SSC) of mesh size 70-99mm (TR2) in ICES division 4a and 4b | Yes | Bottom trawls-demersal seines | OTB-OTT-SDN-SSC | OTB-OTT-SDN-SSC | 70-99 | 70S90-80D100 | All | | All | Whiting | WHG | 4% |

**Table 3.2.2.2 (continued):** The anticipated exemptions for discard plans for 2021 in the North Sea region and the related FDI codes.

| | Excemption Article | Area | Description | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | JR-xx.2020 Art.11.11 | IV | Whiting caught by beam trawls 80-119 mm in the North Sea ICES area 4 | Yes | Beam trawls | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | | All | Whiting | WHG | 2% of catches of plaice and sole |
| | JR-xx.2020 Art.11.12 | IVb-Ivc (only south of 54!) | De minimis exemption for fishing vessels using pelagic trawlers up to 25 m and mid-water trawls (OTM-PTM) in 4b and 4c south of 54 degrees | Partly | Pelagic trawls, midwater trawls (up to 25m) | OTM-PTM | OTM-PTM | All | All | VL0010-VL1012-VL1218-VL1824 | All | All | Herring-horse mackerel-mackerel-whiting | HER-HMM-JAX-HOM-HMC-HMZ-HMG-TUZ-MAC-WHG | 1% of the total catches of herring-horse mackerel-mackerel-whiting |
| | JR-xx.2020 Art.11.13 | IIIa-IV | Fish bycatch caugt in mixed fishery with trawl (OTB-OTM-OTT-PTB-PTM-SDN-SPR-SSC-TB-TBN) with mesh obove 80 mm and caught in Northern prawn trawl fishery with sorting grid (19mm) or device above 35 mm | Yes | Trawls | OTB-OTM-OTT-PTB-PTM-SDN-SPR-SSC-TB-TBN | OTB-OTT-PTB-SDN-SSC | >80 | 80D100-100D110-110D120-120DXX | All | | All | Sprat-sandeel-Norway pout-blue whiting | SPR-SAD-NOP-WHB | 1 % of the total annual catches made in mixed demersal fishery and fishery for Northern prawn |
| | | | | | | | | >35 | 32D80 | All | GRID19 | | | | |
| | JR-xx.2020 Art.11.14 | IV | Ling (Molva molva) for vessels using longlines (LLS) in the North Sea (ICES area 4) | Yes | Longlines | LLS | LLS | | | All | | | Ling | LIN | 3 % of the total annual catches of ling |
| | JR-xx.2020 Art.11.15 | IVb-IVc | Pelagic species under landing obligation for demersal vessels using bottom trawls (OTB-OTT-PTB) of mesh size 80-99mm (TR2) in the North Sea | Yes | Bottom trawls | OTB-OTT-PTB | OTB-OTT-PTB | 80-99 | 80D100 | All | | | Horse mackerel | HOM-JAX-HMG | 6% of the total annual catches of horse mackerel |
| | JR-xx.2020 Art.11.16 | IVb-IVc | Pelagic species under landing obligation for demersal vessels using bottom trawls (OTB-OTT-PTB) of mesh size 80-99mm (TR2) in the North Sea | Yes | Bottom trawls | OTB-OTT-PTB | OTB-OTT-PTB | 80-99 | 80D100 | All | | | Mackerel | MAC | 6% of the total annual catches of mackerel |
| | JR-xx.2020 Art.11.17 | IV | | Partly | Pelagic trawl | | OTM-PTM | | All | All | | SPF-SLP | Blue whiting | WHB | 5 % of the total annual catches of blue whiting |

**Table 3.2.2.2 (continued):** The anticipated exemptions for discard plans for 2021 in the North Sea region and the related FDI codes.

| | Excemption Article | Area | Description | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Survivability | JR-xx.2020 Art.3.1.a | IIa-IIIa-IV | Nephrops caught using pots | Yes | Pots | FPO | FPO | NA | NA | All | | | Norway lobster | NEP | - |
| | JR-xx.2020 Art.3.1.b.i & ii | IIa-IIIa-IV | Nephrops caught by demersal trawls with a cod end larger than 80mm (70mm/35mm) | Yes | Bottom trawls | OTB-OTT-TBN | OTB-OTT-PTB | >80 | 80D100-100D110-110D120-120DXX | All | All | All | Norway lobster | NEP | - |
| | | | | | | | | >70 | 70S90 | All | GRID35 | | | | |
| | JR-xx.2020 Art.4.1&2 | IVc | Survival exemption for 'undersized' common sole (sole less than MCRS of 24cm) caught by 80-99mm otter trawl gears in ICES area 4c **within 6 nautical miles of coasts-albeit outside identified nursery areas**; vessellengt max 10 m and **max engine power of 221 kw, depth less 30 m and tow duration less then 1:30 hours** | **Partly** | Otter trawls | OTB | OTB | 80-99 | 80D100 | VL0010 | | All | Sole | SOL | - |
| | JR-xx.2020 Art.5 | IIIa-IV | Survivability of fish by-catches in pots (creels) and fyke nets | Yes | Pots and fyke nets | FPO-FYK | FPO-FYK | NA | NA | All | | All | All TAC-species | Area IV: USK-HER-COD-LEZ-MON-ANF-MNZ-ANK-HAD-WHG-HKE-WHB-WIT-LEM-BLI-LIN-PLE-POL-POK-TUR-BLL-GHL-MAC-SOL-SPR-HOM-JAX-NOP-ARG-ARU-NEP-PRA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK  Area IIIa: USK-HER-COD-HAD-WHG-HKE-WHB-BLI-LIN-PLE-POL-POK-MAC-SOL-SPR-NOP-ARG-ARU-NEP-PRA-RJK-RAJ-SRX-SKA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-TTO-TTR | - |
| | JR-xx.2020 Art.6.1.a | IIIa-IV | Catch of plaice by vessels using nets in ICES areas 3a and 4 | Yes | Nets | GNS-GTR-GTN-GEN | GNS-GTR-GTN | All | All | All | | All | Plaice | PLE | - |
| | JR-xx.2020 Art.6.1.b | | Catch of plaice by vessels using Danish seine in ICES areas 3a and 4 | Yes | Danish seine | SDN | SDN | | All | All | | | Plaice | PLE | - |
| | JR-xx.2020 Art.6.1.c.i | | Catch and by-catch of plaice by vessels using bottom trawls (OTB-PTB) of mesh sizes ≥ 120 mm in ICES areas 3a and 4 | Yes | Bottom trawls | OTB-PTB | OTB-OTT-PTB | >=120 | 120DXX | All | | All | Plaice | PLE | - |
| | JR-xx.2020 Art.6.1.c.ii | IIIa | Catch of plaice with trawls (OTB-PTB) with mesh size 90-119 mm with Seltra panel targetting flatfish and roundfish in ICES areas 3a | Yes | Trawls | OTB-PTB | OTB-OTT-PTB | 90-119 | 80D100-100D110-110D120 | All | SELTRA | All | Plaice | PLE | - |
| | JR-xx.2020 Art.6.1.c.iii | IV | Catch of plaice with trawls (OTB-PTB) with mesh size 80-119 mm targetting flatfish and roundfish in ICES areas 4 | Yes | Trawls | OTB-PTB | OTB-OTT-PTB | 80-119 | 80D100-100D110-110D120 | All | | All | Plaice | PLE | - |

**Table 3.2.2.2 (continued):** The anticipated exemptions for discard plans for 2021 in the North Sea region and the related FDI codes.

| | Exemption Article | Area | Description | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **2021 - Part 4** | | | | | | | |
| Survivability | JR-xx .2020 Art.7.1.a | IIa-IV | Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES area 2a and 4 with **flip-up rope or Benthos release panel (BRP) - engine >221 kW** | **Partly** | Beam trawls | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | | All | Plaice | PLE | - |
| | JR-xx .2020 Art.7.1.b | IIa-IV | Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES area 2a and 4 **implementing the roadmap for the Fully Documented** Fisheries | **No ( included in JR-xx 2020.Art.7.1.a)** | Beam trawls | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | | All | Plaice | PLE | - |
| | JR-xx .2020 Art.7.2 | IIa-IV | Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES area 2a and 4 with **engine <221 kW or less then 24m in twelve miles zone and tow duration less than ninety min.** | **No** | Beam trawls | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | | All | Plaice | PLE | - |
| | JR-xx .2020 Art.8 | IV | Survival exemption for turbot caught by beam trawls with a cod end larger than 80mm in ICES area 4 | Yes | Beam trawls | TBB | TBB | >80 | 80D100-100D110-110D120-120DXX | All | | All | Turbot | TUR | - |
| | JR-xx .2020 Art.9 | IIa-IIIa-IV | skates and rays caught by all fishing gears in the North Sea (areas 4-3a and EU waters of 2a) | Yes | All | All | All | All | All | All | | All | Skates and rays | JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK | - |
| | JR-xx .2020 Art.10 | IIa-IIIa-IV | Survival exemption for mackerel and herring in purse seine fisheries in ICES area 2a,3a and 4 **with several operational measures** | **Partly** | Purse seine | | SDN-SPR-SSC-SV | All | All | All | | All | Mackerel-herring | MAC-HER | - |

## 3.2.2.3 North Western Waters

**Table 3.2.2.3:** The anticipated exemptions for discard plans for 2021 in the North Western Waters region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Legislation mesh size | Mesh size regulation | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | XX/2020 Article 13.1.a | VIIb-k | yes | Bottom trawls , Seines | OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBN-TBS-TB-TX | OTB-OTT-PTB-SDN-SPR-SSC-SV-SB | >80 | 80D100-100D110-110D120 -120DXX | All | All | All | Whiting | WHG | 5 |
| | | VIIb-k | yes | Pelagic trawls | OTM-PTM | OTM-PTM | All | All | All | All | All | Whiting | WHG | 5 |
| | | | yes | Beam trawl | BT2 | TBB | 80-119 | 80D100-100D110-110D120 | All | All | All | Whiting | WHG | 5 |
| | XX/2020 Article 13.1.b | VIId-g | yes | Trammel and gill nets | GN-GNS-GND-GNC-GTN-GTR-GEN-GNF | GND-GNS-GNC-GTR-GTN | All | All | All | All | All | Sole | SOL | 3 |
| | XX/2020 Article 13.1.c | VIId-h | yes | Beam trawl | TBB | TBB | 80-119 | 80D100-100D110-110D120 | All | TBBFP | All | Sole | SOL | 3 |
| | XX/2020 Article 13.1.d.i | VIIb-c and VIIe-k | **Partly** **less then 30% Nephrops** | Bottom trawls , Seines, **less then 30% Nephrops** | OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV | OTB-OTT-PTB-SDN-SPR-SSC-SV-SB | >100 | 100D110-110D120 -120DXX | All | All | All | Haddock | HAD | 5 |
| | XX/2020 Article 13.1.d.ii | | **Partly** | Bottom trawls , Seines, **more then 30% Nephrops** | | OTB-OTT-PTB-SDN-SPR-SSC-SV-SB | >80 | 80D100-100D110-110D120 -120DXX | All | All | All | Haddock | HAD | 5 |
| | XX/2020 Article 13.1.d.iii | | yes | Beam trawl with Flemish panel | TBB | TBB | >80 | 80D100-100D110-110D120 -120DXX | All | TBBFP | All | Haddock | HAD | 5 |
| | XX/2020 Article 13.1.e | VIIa | Yes | Beam trawl, targetting brown shrimp with mesh size equal to or greater than 31 mm | TBB | TBB | >31 | 32D80-70D80-80D100-100D110-110D120 -120DXX | All | All | CRU | Plaice | PLE | 0.85 |
| | | | | | | | | | | | | Whiting | WHG | 0.15 |
| | XX/2020 Article 13.1.f | VIIb-c and VIIf-k | yes | Bottom trawls | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | All | All | All | All | All | Boarfish | BOR-BOC-ZAC-ZAI-EVI-PZH-RIG-SWH-ENV-EMV-ZAL | 0.5 |
| | XX/2020 Article 13.1.g | VII (specific area's) | **Partly** | Beam trawl | BT2 | TBB | 80-119 | 80D100-100D110-110D120 | All | All | All | Megrim | MEG-LDB-LEZ | 4 |
| | XX/2020 Article 13.1.g.i | VIIf-g, part of 7h | yes | Bottom trawls, more 55% whiting or 55% anglerfish, hake or megrim combined | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | 70-99 | 80D100-70D80 | All | All | All | Megrim | MEG-LDB-LEZ | 4 |
| | XX/2020 Article 13.1.g.ii | VIIa-e, VIIk | yes | Bottom trawls | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | 70-99 | 80D100-70D80 | All | All | All | Megrim | MEG-LDB-LEZ | 4 |

**Table 3.2.2.3 (continued):** The anticipated exemptions for discard plans for 2021 in the North Western Waters region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Legislation mesh size | Mesh size regulation | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* 3 | XX/2020 Article 13.1.h | VIIa | yes | Beam trawl with Flemish panel | BT2 | TBB | 80-119 | 80D100-100D110-110D120 | All | TBBFP | All | Sole | SOL | 3 |
| | XX/2020 Article 13.1.i | Vb-VI | Partly (0.6% of catches from all gears) | Bottom trawls | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | >100 | 100D110, 110D120, 120DXX | All | All | All | Great silver smelt | ARG-ARU-ARY | 0.6 |
| | XX/2020 Article 13.1.j | VI and VIIb-k | yes | Bottom trawls , Seines, beam trawls | OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBB-TBN-TBS-TB-TX | OTB-OTT-PTB-SDN-SPR-SSC-SV-SB-TBB | All | All | All | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | 3 |
| | XX/2020 Article 13.1.k | | yes | Bottom trawls , Seines, beam trawls | OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBB-TBN-TBS-TB-TX | OTB-OTT-PTB-SDN-SPR-SSC-SV-SB-TBB | All | All | All | All | All | Makerel | MAC | 3 |
| | XX/2020 Article 13.1.l | VIa | Partly | Bottom trawls, with one of the following selective gears: square mesh panel 300 mm; 200 mm and vessel > 12 m; Seltra panel; Sorting grid 35 mm; CEFAS-netgrid;Flip-flap trawl | OTT-OTB-TBS-TBN-TB | OTB-OTT-PTB | <119 | 32D70 - 70D80 - 80D100-100D110-110D120 | All | GRID35-TBBFP-SELTRA-NETGRID-SEPNEP | All | Haddock | HAD | 3 |
| | XX/2020 Article 13.1.m | Vb-VI-VII | yes | pelagic trawls | | OTM-PTM | All | All | All | All | All | Blue whiting | WHB | 5 |
| | XX/2020 Article 13.1.n | VII | yes | midwater pair trawl | PTM | PTM | All | All | All | All | All | Albacore tuna | ALB | |
| | XX/2020 Article 13.1.o | VIId | yes | Pelagic trawls, midwater trawls (up to 25m) | OTM-PTM | OTM-PTM | All | All | VL0010-VL1012-VL1218-VL1824 | All | All | Mackerel | MAC | 1 |
| | | | yes | | | | | | | | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | | | yes | | | | | | | | All | Herring | HER | |
| | | | yes | | | | | | | | All | Whiting | WHG | |

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**Table 3.2.2.3 (continued):** The anticipated exemptions for discard plans for 2021 in the North Western Waters region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Legislation mesh size | Mesh size regulation | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Survivability* | XX/2020 Article 3.1.a | VI-VII | Yes | Pots,traps,creel | FPO-FIX-FYK | FPO-FPN-FYK | All | All | All | All | All | Norway Lobster | NEP | - |
| | XX/2020 Article 3.1.b | VII | Yes | Bottom trawls | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | >100 | 100D110, 110D120, 120DXX | All | All | All | Norway Lobster | NEP | - |
| | XX/2020 Article 3.1.c | VII | Partly | Bottom trawls, with one of the following selective gears: square mesh panel 300 mm; 200 mm and vessel > 12 m; Seltra panel; Sorting grid 35 mm; 100 mm cod-end, dual cod-end < 90 mm/300 mm | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | 70-99 | 70D80-80D100 | All | GRID35-TBBFP-SELTRA-NETGRID-SEPNEP-T90 | All | Norway Lobster | NEP | - |
| | XX/2020 Article 3.1.d | VIa - within 12 NM | No | Otter trawls | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTT-OTB-OTM | 80-110 | 80D100,100D110 | All | All | All | Norway Lobster | NEP | - |
| | XX/2020 Article 3.2 | Celtic protection zone (BSA) | Partly | Bottom trawls, with one of the following selective gears: square mesh panel 300 mm; 200 mm and vessel > 12 m; Seltra panel; Sorting grid 35 mm; 100 mm cod-end, dual cod-end < 90 mm/300 mm | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTB-OTT-PTB | 70-99 | 70D80-80D100 | All | GRID35-SELTRA-NETGRID-SEPNEP-T90 | All | Norway Lobster | NEP | - |
| | XX/2020 Article 3.3 | VIIa | Partly | Bottom trawls, with one of the following selective gears: square mesh panel 300 mm; 200 mm and vessel > 12 m; Seltra panel; Sorting grid 35 mm; CEFAS-netgrid;Flip-flap trawl | | | | | All | GRID35-TBBFP-SELTRA-NETGRID-SEPNEP | All | Norway Lobster | NEP | |
| | XX/2020 Article 4.1.a,b | VIId | No | Otter trawls, within 6 nautical miles, max power 221kW, max 10 m, depth 30m, duration 1:30 h | OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX | OTT-OTB-OTM | 80-99 | 80D100 | VL0010 | All | All | Sole | SOL | - |
| | XX/2020 Article 5 | VI-VII | Yes | All | All | All | All | All | All | All | All | Skates & rays | SRX-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR | - |
| | XX/2020 Article 6.1.a | VIId,VIIe,VIIf and VIIg | Yes | Trammel nets | GTR-GTN-GEN-GN | GND-GNS-GNC-GTR-GTN | All | All | All | All | All | Plaice | PLE | - |
| | XX/2020 Article 6.1.b | | Yes | Otter trawls | OTT,OTB,TBS,TBN,TB,PTB,OT,PT,TX | OTT-OTB-OTM | All | All | All | All | All | Plaice | PLE | - |
| | XX/2020 Article 6.1.c | VIIa-VIIg | Partly | Beam trawl, max power 221 kW, flip-up or bentic panel | TBB | TBB | All | All | All | SELTRA-GRID35 | All | Plaice | PLE | - |
| | XX/2020 Article 6.1.d | VIIa-VIIg | Partly | Beam trawl, max power 221 kW, or max 24m, within 12 nm, duration 1:30 h | TBB | TBB | All | All | All | All | All | Plaice | PLE | - |
| | XX/2020 Article 6.1.e | VIId | Yes | Danish seines | SDN | SDN | All | All | All | All | All | Plaice | PLE | - |
| | XX/2020 Article 7 | V (excl Va)-Vb-VI-VII | Yes | Pots,traps,creel | FPO-FIX-FYK | FPO-FPN-FYK | All | All | All | All | All | All | - | - |
| | XX/2020 Article 8 | VI | Yes | Purse seine with several operational measures | | SDN-SPR-SSC-SV | All | All | All | All | All | Mackerel-herring | MAC-HER | - |

### 3.2.2.4 South Western Waters

**Table 3.2.2.4:** The anticipated exemptions for discard plans for 2021 in the South Western Waters region and the related FDI codes.

| | Excemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* | | | | | | 2021 part 1 | | | | | | | | |
| | *XX/ 2019 Article 6.1.k* | VIII-IX | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Plaice | PLE | 5 |
| | *XX/ 2019 Article 6.1.l* | | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 3 |
| | *XX/ 2019 Article 6.1.q* | | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Pollack | POL | 5 |
| | *XX/ 2019 Article 6.1.r* | | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 2 |
| | *XX/ 2020 Article 14.1.a* | VIII-IX | yes | Trawls and seines | OTM-PTM-OTT-OTB-PTB-OT-PT-TBN-TBS-TX-SSC-SPR-TB-SDN-SX-SV | OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Hake | HKE | 5 |
| | *XX/ 2020 Article 14.1.b* | VIIIa-VIIIb | yes | Pelagic trawls, beam and bottom trawls | OTM-PTM-TBB-OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX | OTM-PTM-TBB-OTB-OTT-PTB | All | All | All | All | All | Sole | SOL | 5 |
| | *XX/ 2020 Article 14.1.c* | | yes | Trammel and gill nets | GNS-GN-GND-GNC-GTN-GTR-GEN | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 3 |
| | *XX/ 2020 Article 14.1.d* | X | yes | Hooks and lines | LHM-LHP-LLD-LLS | LHM-LHP-LLD-LLS | All | All | All | All | All | Alfonsinos | ALF-BRX | 5 |
| | *XX/ 2020 Article 14.1.e* | VIII-IX | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | 5 |
| | *XX/ 2020 Article 14.1.f* | VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0 | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 3 |
| | *XX/ 2020 Article 14.1.g* | VIII-IX | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Mackerel | MAC | 5 |
| | *XX/ 2020 Article 14.1.h* | VIII-IX-CECAF 34.1.1-34.1.2-34.2.0 | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | Mackerel | MAC | 3 |
| | *XX/ 2020 Article 14.1.i* | VIII-IX | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-SDN-SPR-SSC-SV | All | All | All | All | All | Megrim | MEG-LDB-LEZ | 5 |
| | *XX/ 2020 Article 14.1.j* | | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 4 |
| | *XX/ 2020 Article 14.1.K* | | yes | Pelagic trawls, beam, bottom trawls and seines | OTM-PTM-TBB-OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | OTM-PTM-TBB-OTB-OTT-PTB-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Anglerfish | MON-ANK-ANG-MVA-MVO-MVJ-MVN-MNZ-LHS-LHU-KZZ-IDZ-IVV-ANF | 5 |
| | *XX/ 2020 Article 14.1.L* | | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 4 |

**Table 3.2.2.4 (continued):** The anticipated exemptions for discard plans for 2021 in the South Western Waters region and the related FDI codes.

| | Excemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* | *XX/ 2020 Article 14.1.m* | VIII | yes | Pelagic trawls, beam, bottom trawls and seines | OTM-PTM-TBB-OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | OTM-PTM-TBB-OTB-OTT-PTB-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Whiting | WHG | 5 |
| | *XX/ 2020 Article 14.1.n* | | yes | Gillnets | GNS-GND-GNC-GTN-GTR | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | | | 4 |
| | *XX/ 2020 Article 14.1.o* | VIII-IX | yes | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Anchovy | ANE | 5 |
| | *XX/ 2020 Article 14.1.p* | **IXa in Gulf of Cadiz** | **No** | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-TB-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Red seabream | SBR | 5 |
| | *XX/ 2020 Article 14.1.q* | **IXa in Gulf of Cadiz** | **No** | Beam trawls, bottom trawls and seines | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-TB-SSC-SPR-SDN-SX-SV | TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB | All | All | All | All | All | Sole | SOL | 1 |
| | *XX/ 2020 Article 14.1.r* | VIII | yes | Industrial pelagic trawl fishery using midwater trawls and midwater pair trawls | OTM-PTM | OTM-PTM | All | All | All | All | SPF-SLP | Blue whiting | WHB | 5 |
| | *XX/ 2020 Article 14.1.s* | | yes | Midwater trawls and midwater pair trawls | OTM-PTM | OTM-PTM | All | All | All | All | All | Albacore tuna | ALB | 5 |
| | *XX/ 2020 Article 14.1.t* | | yes | Pelagic trawls | OTM-PTM | OTM-PTM | All | All | All | All | All | Anchovy | ANE | 4 |
| | *XX/ 2020 Article 14.1.t* | | | | | | All | All | All | All | All | Mackerel | MAC | |
| | *XX/ 2020 Article 14.1.t* | | | | | | All | All | All | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *XX/ 2020 Article 14.1.u* | VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0 | yes | Purse seines | PS | PS | All | All | All | All | All | Anchovy | ANE | 1 |
| | *XX/ 2020 Article 14.1.u* | | yes | | PS | PS | All | All | All | All | All | Mackerel | MAC | 4 |
| | *XX/ 2020 Article 14.1.u* | | yes | | PS | PS | All | All | All | All | All | Horse mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |

**Table 3.2.2.4 (continued):** The anticipated exemptions for discard plans for 2021 in the South Western Waters region and the related FDI codes.

| | Excemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Mesh size FDI | Vessel lenght | SPECON | Target Assemblage | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2021 part 3 | | | | | | | | |
| Survivability | 2018/188 Article 2 | | no | | - | SB | All | All | All | All | All | Anchovy | ANE | - |
| | 2018/188 Article 2 | VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0 | no | Artisanal purse seine | - | SB | All | All | All | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | - |
| | 2018/188 Article 2 | | no | | - | SB | All | All | All | All | All | Jack Mackerel | JAA | - |
| | 2018/188 Article 2 | | no | | - | SB | All | All | All | All | All | Mackerel | MAC | - |
| | DA XX/2020 Article 9 | VIII-IX | yes | Bottom trawls | OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX | OTB-OTT-PTB-OTM-PTM-TBB | All | All | All | All | All | Norway Lobster | NEP | - |
| | DA XX/2020 Article 10.1 | VIII-IX | yes | All | - | All | All | All | All | All | All | Skates & rays | SRX-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR | - |
| | DA XX/2020 Article 10.4.a | VIII-IX | yes | Trammel nets | - | GNS-GND-GNC-GTN-GTR | All | All | All | All | All | Cukoo ray | RJN | - |
| | DA XX/2020 Article 10.4.b | VIII | yes | Bottom trawls | | OTB-OTT-PTB-OTM-PTM-TBB | All | All | All | All | All | Cukoo ray | RJN | - |
| | DA XX/2020 Article 11 | IXa | No | Artisanal gear voracera | - | SB | All | All | All | All | All | Red seabream | SBR | - |
| | | VIII-IXa-X | yes | Hooks and lines | LHM-LHP-LLD-LLS | LHM-LHP-LLD-LLS-LTL | All | All | All | All | All | Red seabream | SBR | - |
| | DA XX/2020 Article 12 | VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0 | no | Purse seine with net not fully taken on board | PS | SDN-SPR-SSC-SV | All | All | All | All | All | Anchovy- horse mackerel - mackerel | ANE-HMM-JAX-HOM-HMC-HMZ-HMG-TUZ-MAC | - |

### 3.2.2.5 Mediterranean Sea

**Table 3.2.2.5:** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | | | | | | 2021 - Part 1 | | | | | |
| | 86/2017, Article 4 (a) i, 153/2018 (1) 3 | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Hake | HKE | 6 |
| | | | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (a) ii, , 153/2018 (1) 3 | | yes | Gill nets and and trammel nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Hake | HKE | 1 |
| | | | yes | Gill nets and and trammel nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (b) i | Adriatic Sea (GSA17-GSA18) | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Hake | HKE | 6 |
| | | | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (b) ii | Adriatic Sea (GSA17-GSA18) | yes | Gill nets and and trammel nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Hake | HKE | 1 |
| | | | yes | Gill nets and and trammel nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (b) iii | Adriatic Sea (GSA17-GSA18) | yes | Beam trawl | TBB | TBB | All | All | Hake | HKE | 1 |
| | | | yes | Beam trawl | TBB | TBB | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (b) iv | | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Sole | SOL | 2 |
| | 86/2017, Article 4 (b) v | | yes | Gill nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Sole | SOL | 0 |
| | 86/2017, Article 4 (c) i | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Hake | HKE | 6 |
| | | | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (c) ii | | yes | Gill nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Hake | HKE | 1 |
| | | | yes | Gill nets | DFN | ND-GNS-GNC-GTR-GT | All | All | Red mullet | MUT-MUX-MUM | |
| | 86/2017, Article 4 (c) iii | | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Deep water rose shrimp | DPS | 6 |
| | 86/2017, Article (4) c | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Trawl nets | DTS | OTB-OTT-PTB-OTM | All | All | Hake | HKE | 6 |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* | | | | | | **2021 - Part 2** | | | | | |
| | 161/2018 Article 3(1) Annex I (1) | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Anchovy | ANE | 5 |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Sardine | PIL | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Mackerel | MAC | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | 161/2018 Article 3(1) Annex I (2) | | yes | pelagic purse seines | PS | PS | All | All | Anchovy | ANE | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | 161/2018 Article 3(1) Annex II (1) | South Eastern Mediterranean Sea GSA15 GSA16 GSA19 GSA20 GSA22 GSA23, GSA25 | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Anchovy | ANE | 5 |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Sardine | PIL | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Mackerel | MAC | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | 161/2018 Article 3(1) Annex II (2) | South Eastern Mediterranean Sea GSA 25 | yes | pelagic purse seines | PS | PS | All | All | Anchovy | ANE | 5 |
| | | | yes | pelagic purse seines | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* | | | | | | | | | | | |
| | *161/2018 Article 3(1) Annex III (1)* | Adriatic Sea (GSA17-GSA18) | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Anchovy | ANE | 5 |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Sardine | PIL | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Mackerel | MAC | |
| | | | yes | pelagic midwater trawls | OTM-PTM | OTM-PTM | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *161/2018 Article 3(1) Annex III (2)* | Adriatic Sea (GSA17) | yes | pelagic purse seines | PS | PS | All | All | Anchovy | ANE | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *161/2018 Article 3(2) Annex IV* | Malta Island and South of Sicily (GSA15-GSA16) | yes | pelagic midwater trawls | PS | PS | All | All | Anchovy | ANE | 3 |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *161/2018 Article 3(2) Annex V* | Southern Agean Sea and Crete Island (GSA22-GSA23) | yes | pelagic midwater trawls | PS | PS | All | All | Anchovy | ANE | 3 |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic midwater trawls | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *161/2018 Article 3 (2) Annex VI* | Southern Adriatic Sea and Ionian Sea (GSA18-GSA19-GSA20) | yes | pelagic purse seines | PS | PS | All | All | Anchovy | ANE | 3 |
| | | | yes | pelagic purse seines | PS | PS | All | All | Sardine | PIL | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Mackerel | MAC | |
| | | | yes | pelagic purse seines | PS | PS | All | All | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | | | | | | | | | European seabass | BSS | |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | 4/2020 , Article 4 (1,a,iii) of 86/2017 | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | 5 |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | | | | | | | | | Deep-water rose shrimp | DPS | |
| | | | | | | | | | European seabass | BSS | |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | 4/2020 , Article 4 (1,a,iv) of 86/2017 | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | Gill nets and and trammel nets | DFN | GND-GNS-GNC-GTR-GTN | All | All | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | 3 |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Deminimis* | | | | | | | | | | | |
| | *4/2020 , Article 4 (1,a,v) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | Hooks, lines | | LHM-LHP-LLD-LLS | All | All | European seabass | BSS | 1 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | *4/2020 , Article 4 (1,a,vi) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Anchovy | ANE | 5 |
| | | | | | | | | | Sardine | PIL | |
| | | | | | | | | | Mackerel | MAC | |
| | | | | | | | | | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |
| | *4/2020 , Article 4 (1,b,v) of 86/2017* | Adriatic Sea (GSA17-GSA18) | yes | Bottom trawls | | OTB-OTT-PTB | All | All | European seabass | BSS | 5 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | | | | | | | | | Deep-water rose shrimp | DPS | |

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**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Deminimis** | | | | | | | | | | | |
| | *4/2020 , Article 4 (1,b,vi) of 86/2017* | Adriatic Sea (GSA17-GSA18) | yes | Gill nets and and trammel nets | DFN | GND-GNS-GNC-GTR-GTN | All | All | European seabass | BSS | 3 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | *4/2020 , Article 4 (1,b,vii) of 86/2017* | Adriatic Sea (GSA17-GSA18) | yes | Hooks, lines | | LHM-LHP-LLD-LLS | All | All | European seabass | BSS | 1 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | *4/2020 , Article 4 (1,a,vi) of 86/2017* | Adriatic Sea (GSA17-GSA18) | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Anchovy | ANE | 5 |
| | | | | | | | | | Sardine | PIL | |
| | | | | | | | | | Mackerel | MAC | |
| | | | | | | | | | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | | | | | | **2021 - Part 7** | | | | | |
| | 4/2020 , Article 4 (1,c,iv) of 86/2017 | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Bottom trawls | | OTB-OTT-PTB | All | All | European seabass | BSS | 5 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | | | | | | | | | Deep-water rose shrimp | DPS | |
| | 4/2020 , Article 4 (1,c,v) of 86/2017 | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Gill nets and and trammel nets | DFN | GND-GNS-GNC-GTR-GTN | All | All | European seabass | BSS | 3 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Deminimis | 4/2020 , Article 4 (1,c,vi) of 86/2017 | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Hooks, lines | | LHM-LHP-LLD-LLS | All | All | European seabass | BSS | 1 |
| | | | | | | | | | Annular seabream | ANN | |
| | | | | | | | | | Sharpsnout seabream | SHR | |
| | | | | | | | | | White seabream | SWA | |
| | | | | | | | | | Common two-banded seabream | CTB | |
| | | | | | | | | | Grouperd | GPD-GPW-EIU-EPA-ELD-EEN-EEC-EER-EIF-EFX-EPZ-EPT-GPN | |
| | | | | | | | | | Striped seabream | SSB | |
| | | | | | | | | | Spanish seabream | SBA | |
| | | | | | | | | | Red seabream | SBR | |
| | | | | | | | | | Common pandora | PAC | |
| | | | | | | | | | Common seabream | RPG | |
| | | | | | | | | | Wreckfish | WRF | |
| | | | | | | | | | Sole | SOL | |
| | | | | | | | | | Gilthead seabream | SBG | |
| | 4/2020 , Article 4 (1,c,vii) of 86/2017 | South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | yes | Bottom trawls | DTS | OTB-OTT-PTB | All | All | Anchovy | ANE | 5 |
| | | | | | | | | | Sardine | PIL | |
| | | | | | | | | | Mackerel | MAC | |
| | | | | | | | | | Horse Mackerel | HMM-JAX-HOM-HMC-HMZ-HMG-TUZ | |

**Table 3.2.2.5 (continued):** The anticipated exemptions for discard plans for 2021 in the Mediterranian Sea region and the related FDI codes.

| | Exemption Article | Area | Possible or not | Fishing Techniques | Gear code | FDI gear code | Mesh size | Vessel lenght | Species | Species codes | Procent/MCRS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Survavability* | *153/2018, Article 3 (1. a) of 86/2017* | GSA17-GSA18 | Yes | Beam trawl | TBB | TBB | All | All | Sole | SOL | - |
| | *153/2018, Article 3 (1. b) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | Yes | Mechanised dredges | HMD | HMD | All | All | Scallop | SJA | - |
| | *153/2018, Article 3 (1. c) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | Yes | Mechanised dredges | HMD | HMD | All | All | Carpet clam | VEN | - |
| | *153/2018, Article 3 (1. d) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | Yes | Mechanised dredges | HMD | HMD | All | All | Venus shells | CLV | - |
| | *04/2020 , Article 3.1* | Italian territorial waters in GSA9-GSA10-GSA17-GSA18 | Yes | Hydraulic dredges | | DRB | All | All | Venus shells | CLV | - |
| | *153/2018, Article 3 (1. e) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | Yes | bottom trawls | OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX | OTB-OTT-PTB | All | All | Norway Lobster | NEP | - |
| | *04/2020 , Article 3 (1. g) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) | Yes | hooks, lines | LHP, LHM, LLS, LLD, LL, LTL, LX | LHM-LHP-LLD-LLS | All | All | Red Seabream | SBR | - |
| | *04/2020 , Article 3 (1. h) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) Adriatic Sea (GSA17-GSA18) South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | Yes | nets, pots and traps | GNS, GN, GND, GNC, GTN, GTR, GEN, FPO, FIX | All | All | All | Lobster | LBE | - |
| | *04/2020 , Article 3 (1. h) of 86/2017* | Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12) Adriatic Sea (GSA17-GSA18) South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27) | Yes | nets, pots and traps | GNS, GN, GND, GNC, GTN, GTR, GEN, FPO, FIX | All | All | All | Crawfish | VLO | - |

*3.2.3* ***STECF is asked to assess and if possible, provide percentages of discards estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2021***

**Estimaton method and assumptions**

Estimation of the proportion of fish above and below the MCRS by species, country, métier, year was done merging Tables A, D and F using the fields *domain_discards* and *domain_landings*.

In Table A, if a métier has been sampled for landings it has a *domain_landings* associated and the length structure of the landings is displayed in Table F. Similarly, if discards have been sampled, a *domain_discards* is associated and the length structure of the discards displayed in Table D.

Discard and Landings length structure are then provided by domain and the spatial/temporal resolution of these domains are country/fishery dependent and are specific to the national sampling programs. Domains were created to reflect the sampling programs of each country and to provide the best scientific estimates of the length structure of the landings/discards. In most cases a domain will then aggregate métier and/or areas and/or quarter and/or mesh sizes from Table A. Values in column *totwghtlandg* and *discards* of Table A are then expected to be lower than *totwghtlandg* and *discards* in Table D and *totwghtlandg* in Table F as they can encompass several lines in Table A.

The main and strong assumption made in the following calculations is that the length structure of landings and discards for line métier in Table A will be the length structure of the landings of the associated domain in Table F and the length structure of the discards of the associated domain in Table D.

But the landings and discards weight reported in Table A are the reference figures from which the percentage above and below MCRS shoud be computed.

Computation of numbers of individual fish above and below MCRS by species, country, year, area, and métier can be divided in the following steps:

1. Compute the proportion of fish [in number and weight] at length for a standardized unit of landings in Table F and a unit of discard in Table D;
2. Compute weights at length discarded/landed: multiply the *totwghtlandg* by these proportions at length of landings for each corresponding strata in Table A [and respectively *discards* by the proportions at length of discards];
3. Define if the length is under or above the MCRS using the reference tables [by species/area];
4. Sum the weight of fishes under and above MCRS over "country_code", "year","area", "metier","species", "testMCRS".

As not all métiers in Table A are associated to a domain, the total length structure of the catches cannot be computed and estimates above and below MCRS depend upon the number of domains provided and the number of samples in each domain and how representative the samples are of each domain. **A "quality" column** is added to the export files computing the percentage of landings and discards in Table A covered by landings length samples in Table D and discards length samples in Table F. In fact the merge of country, year, area, and métier might cover several lines in Table A for which some might have domains [landings and discards] associated and other might not have domains associated. A full sampling landing coverage [100%] will then mean that all lines in Table A for a given country, year, area, and métier strata had domain associated in Table F [i.e. Table D for discards]. Conversely, a value under 100% in landing [i.e. discard coverage] means that some lines aggregated had no domain associated in Table F [i.e. Table D].

**Step 1: compute the proportion of fish [in number and weight] at length for a standardized unit of landings in Table F and a unit of discard in Table D**

Table F:

$$Prop\ Weight\ Landings_{domain,species,l} = \frac{mean\ weight_{domain,species,l} * Number_{domain,species,l}}{\sum_l mean\ weight_{domain,species,l} * Number_{domain,species,l}}$$

$$Prop\ Number\ Landings_{domain,species,l} = \frac{Number_{domain,species,l}}{\sum_l Number_{domain,species,l}}$$

Table D:

$$Prop\ Weight\ Discards_{domain,species,l} = \frac{mean\ weight_{domain,species,l} * Number_{domain,species,l}}{\sum_l mean\ weight_{domain,species,l} * Number_{domain,species,l}}$$

$$Prop\ Number\ Discards_{domain,species,l} = \frac{Number_{domain,species,l}}{\sum_l Number_{domain,species,l}}$$

**Step 2: Compute weights at length discarded/landed**

Merge Table A and D by domain  discard [Table AD]:

$$Distrib\ Length\ by\ Weight\ Landings_{domain,species,l} = Prop\ Weight\ Landings_{domain,species,l} * totwghtlang_{domain,species}$$

$$Distrib\ Length\ by\ Number\ Landings_{domain,species,l} = Prop\ Number\ Landings_{domain,species,l} * totwghtlang_{domain,species}$$

Merge Table A and F by domain landings [Table AF]:

$$Distrib\ Length\ by\ Weight\ Discardss_{domain,species,l} = Prop\ Weight\ Discardss_{domain,species,l} * discards_{domain,species}$$

$$Distrib\ Length\ by\ Number\ Discardss_{domain,species,l} = Prop\ Weight\ Discardss_{domain,species,l} * discards_{domain,species}$$

**Step 3: Define if the length is under or above the MCRS**

Merge Tables AD and AF and MCRS reference table and define if lengths are under or above MCRS

**Step 4: Compute the proportion above and under MCRS**

$$Percentage\ Landings\ in\ weight\ Above\ MCRS_{country,year,met,species}$$
$$= \frac{\sum_{l>MCRS} Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l}}{\sum_l Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l} + \sum_l Distrib\ Length\ by\ Weight\ discards_{country,year,met,specie,l}}$$

$$Percentage\ Landings\ in\ weight\ Under\ MCRS_{country,year,met,species}$$
$$= \frac{\sum_{l<MCRS} Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l}}{\sum_l Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l} + \sum_l Distrib\ Length\ by\ Weight\ discards_{country,year,met,specie,l}}$$

$$Percentage\ Discards\ in\ weight\ Above\ MCRS_{country,year,met,species}$$
$$= \frac{\sum_{l>MCRS} Distrib\ Length\ by\ Weight\ Discards_{country,year,met,specie,l}}{\sum_l Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l} + \sum_l Distrib\ Length\ by\ Weight\ discards_{country,year,met,specie,l}}$$

Percentage Discards in weight Under MCRS$_{country,year,met,species}$

$$= \frac{\sum_{l<MCRS} Distrib\ Length\ by\ Weight\ Discards_{country,year,met,specie,l}}{\sum_{l} Distrib\ Length\ by\ Weight\ Landings_{country,year,met,specie,l} + \sum_{l} Distrib\ Length\ by\ Weight\ discards_{country,year,met,specie,l}}$$

*met* - metier in Table A

*domain* - either *domain_discards* when computing discards numbers at length or *domain_landings* when computing landings numbers at length.

*l* - length

**Example:**

Figure 3.2.3.1 and Table 3.2.3.1 represent the distribution of the catches in Table A in weight and number by species and category (landings/discards above/under MCRS or without length samples) for the Belgian fleets fishing in the North Sea with Beam Trawl using a mesh size between 70 and 99 mm between 2015 and 2019.
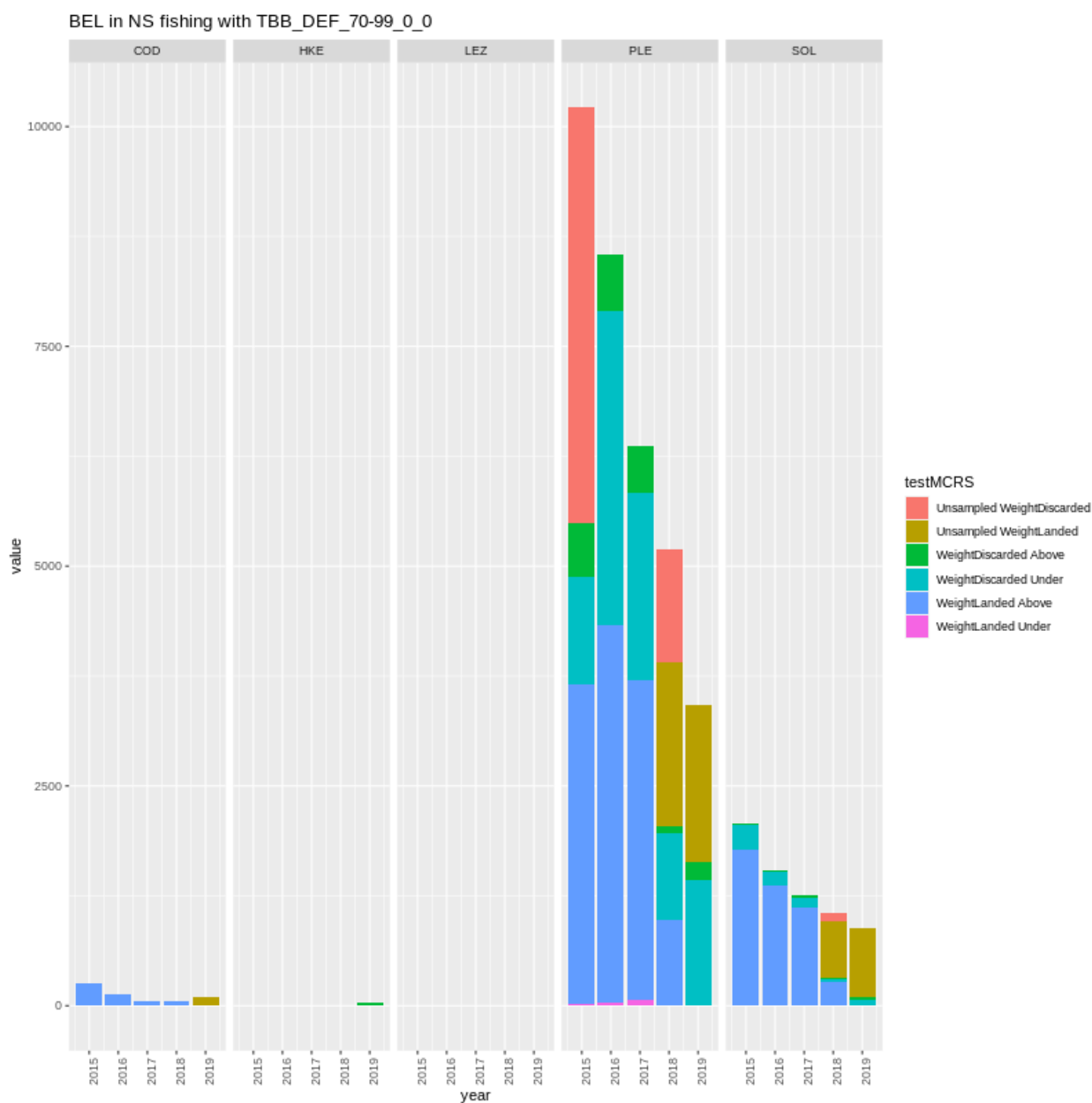
**Figure 3.2.3.1:** Estimated catch categories above and below MCRS in weight (tonnes) by species and year [from Table A] for the Belgian beam trawl fleet using a mesh size between 70 and 99 mm

**Table 3.2.3.1:** Estimated catch categories above and below MCRS in number by species and year [from Table A] for the Belgian beam trawl fleet using a mesh size between 70 and 99 mm

| country_code | year | Area | Metier | species | Percentage Diacarded Above (in number) | Percentage discarded Under (in number) | Percentage landed Above (in number) | Percentage landed Under (in number) | Discarded Sampled | Landed Sampled |
|---|---|---|---|---|---|---|---|---|---|---|
| BEL | 2018 | NS | TBB_DEF_70-99_0_0 | COD | 1 | 4 | 95 | 0 | 100 | 100 |
| BEL | 2018 | NS | TBB_DEF_70-99_0_0 | HKE | 63 | 17 | 20 | 0 | 100 | 100 |
| BEL | 2018 | NS | TBB_DEF_70-99_0_0 | LEZ | 15 | 1 | 83 | 0 | 100 | 92 |
| BEL | 2018 | NS | TBB_DEF_70-99_0_0 | PLE | 2 | 50 | 48 | 1 | 45 | 35 |
| BEL | 2018 | NS | TBB_DEF_70-99_0_0 | SOL | 1 | 12 | 85 | 2 | 32 | 29 |
| BEL | 2019 | NS | TBB_DEF_70-99_0_0 | HKE | 66 | 19 | 16 | 0 | 100 | 100 |
| BEL | 2019 | NS | TBB_DEF_70-99_0_0 | LEZ | 19 | 2 | 79 | 0 | 100 | 50 |
| BEL | 2019 | NS | TBB_DEF_70-99_0_0 | PLE | 7 | 93 | 0 | 0 | 100 | 0 |
| BEL | 2019 | NS | TBB_DEF_70-99_0_0 | SOL | 27 | 73 | 0 | 0 | 100 | 0 |

## Results

Estimated proportions of landings and discards in weight and number by species and area at the level of aggregation corresponding to the fleet, area and gear type are given in Annex 3.

## 3.3 Produce dissemination tables and maps of spatial effort and landings by c-squares

### 3.3.1 *Discuss and agree the format of the biological data (FDI Tables C, D, E and F) and of the refusal rate data to be publicly disseminated (FDI Table B)*

The data submitted in response to the FDI data call are available to DG MARE and STECF expert groups but remain the property of Member States. Member States also have the right to mark certain data records as confidential, specifically data records in Tables A, G H and I of the data call. As discussed at the 2019 FDI meeting (STECF 19-11), there is a need to develop an agreed standard method for combining the biological parameters in Tables C, D, E and F with Table A in order that estimates of the age and length composition of catches (landings and discards) can be made publically available, but at the same time ensure confidentiality is maintained.

**Biological data (tables C, D, E and F)**

The biological data submitted in Tables C, D, E and F are summarized as:

Table C: Discards age data. Number by age, species, country, year, domain and for *Nephrops* the functional units. In addition, information is reported on total weight of discards, number of samples, number of age measurements, mean weight and mean length.

Table D: Discards length data. Number by length, species, country, year, domain and for *Nephrops* the functional units. In addition, information is reported on total weight of discards, number of samples, number of length measurement and mean weight at length.

Table E: Landings age data. Number by age, species, country, year, domain and for *Nephrops* the functional units. In addition, information is reported on total weight of landings, number of samples, number of age measurements, mean weight and mean length.

Table F: Landings length data. Number by length, species, country, year, domain and for *Nephrops* the functional units. In addition, information is reported on total weight of landings, number of samples, number of length measurement and mean weight at length.

The tables are designed to report the age and length data by the domains corresponding to the national data sampling. The domains are country-specific but can include information on quarter, sub-region, métier, vessel length and species. The domain code is also included in Table A to enable disaggregation of the biological data to the level reported in Table A. Therefore, to report the biological information by area and métier, the Tables C, D, E and F need to be combined in a standardized way with Table A by domain, year and species, to enable disaggregation to e.g. areas and métiers. It has not been possible to develop a standard method for combining the tables during the EWG 20-10, so before the biological data can be published, such a standard method needs to be developed, building on the script developed for MCRS analysis. As suggested by previous FDI EWGs, the development of the method could be done under an *ad-hoc* contract, and the outputs reviewed and quality checked by the 2021 FDI EWG (see recommendation below and previous reports).

After developing an agreed standard method to combine the tables referred to above, the EWG proposes that the following outputs be made public:

- Relative length distribution by year, quarter, species, area and métier. Separately for landings and discards.

- Relative age distribution by year, quarter, species, area, métier. Separately for landings and discards

The output products should be reviewed by the FDI EWG to decide if they should be published by country or aggregated over countries. In some cases there can be differences in length distribution sampling results between countries within the same area. Also, inconsistencies of métiers for similar fisheries between the countries might affect the output.

The length and age distributions should be published as tables and could be illustrated with bar charts or bar plots.

Recognizing the need to devote additional time and expertise to further improve data quality and utility and to ensure appropriate dissemination of FDI data, the **EWG recommends** the following actions in 2021:

1- **Data dissemination *ad hoc* contract**: To realise the full potential of the FDI database as a tool to inform fisheries management, there is a need to ensure that the data can be made available to potential users. Furthermore, to ensure appropriate use of such data, any limitations need to be clearly pointed out. For example, to date, it has not been possible to disseminate biological data (e.g. length and age compositions of landings and discards) via the data dissemination tool provided by the JRC. Detailed data are fundamental to many analyses, such as analyses to simulate the likely outcomes of management proposals, hence there is a need to find a means to disseminate such data at the lowest permitted level of aggregation. The contract should consider how this might best be achieved and whether additional visualization tools can be incorporated to enhance the utility of the data and draw attention to any limitations.

2- **Methodology meeting:** Now that the data call has stabilized, resources need to be dedicated to the improvement of the processes implemented by MS when providing this data and associated partitioning of discards and biological data to the requested strata/domains (e.g Table A – catch summary), and propose a common best practice. The partitioning processes implemented by Member States vary greatly and there is a need to harmonize the processes between Member States to ensure that the final data product disseminated to all potential users is comparable between Member States. This requires time, analysis and discussion. This meeting will also discuss the findings of the ad hoc contract on data-dissemination. Ideally, the JRC would make a data call template available early in 2021, followed by the 2021 FDI data call to be released the first week of June, with the legal deadline last week of June, coincident with the methodology meeting. This would allow the possibility to re-upload data before the September EWG meeting. While biological data for the Mediterranean and Black Sea regions are provided under a separate data call, to ensure that the FDI database contains fishery dependent information for the entire EU fleet, such data (Tables C, D, E, F and K) for the Mediterranean and Black Sea need to be incorporated in the FDI database by transferring the data from Mediterranean and Black Sea data call into the FDI format/database. It would be desirable that experts involved in Mediterranean and Black Sea data call also attend the proposed methodology meeting. Furthermore, because age/length distributions are only checked and published for assessed stocks, including the biological data in the FDI data call would ensure that fishery dependent data for all stocks would be checked and made available on an annual basis.

## Refusal rates (Table B)

The derivation of the refusal rates reported by each Member State in Table B needs to be described. At the moment disseminating the refusal rates without such a description for each Member State could be misleading. Therefore, the EWG agreed to add a separate section to the national chapters which include a description of how refusal rates provided in Table B have been derived (explanations on sampling frames and how refusal rates are recorded).

## Dissemination of Tables A, G, H and I

In the 2020 FDI data call, two minor changes were made: the *Nephrops* functional units have been included in the aggregation (NEP_SUB_REGION) in Tables A, C, D, E and F and it is now possible to add more detail to the field that marks data that are considered confidential in tables A and H. The NEP_SUB_REGION can be included in the category fields for the dissemination of Table A.

At the FDI EWG in 2019, it was recommended that as data were to be disseminated in a new format, National Correspondents should be informed by DG MARE. Given that the 2020 data is to be disseminated in the same format as in 2019, the EWG suggests that Member States need not to be formally notified.

The spatial data in Tables H and I, will be aggregated over countries before dissemination to maintain Member States' anonymity. For data in Tables H and I confidential informartion submitted by Portugal for the OFR supra region, will not be disseminated.

In the data call Tables A and H there is a new possibility to mark data as confidential with all (A), none (N), weight (W), value (V). When W is used it is both TOTWGHTLANDG and DISCARDS that are confidential.

In the data call tables G and I the options Y (confidential) and N (not confidential) may be given.

Dissemination of data in Table A will be handled as follows:

|  | TOTWGHTLANDG | TOTVALLANDG | DISCARDS |
|---|---|---|---|
| A (All) | Confidential | Confidential | Confidential |
| N (None) | Value | Value | Value |
| W (Weight) | Confidential | Value | Confidential |
| V (Value) | Value | Confidential | Value |

In responding to the 2020 FDI data call, only Lithuania has marked the value of the landings (V) as confidential. The mark W was not used by any of the Member States.

A summary of the numbers of records marked as confidential by Member State is given in Table 3.3.1.1.

**Table 3.3.1.1:** Total number of records marked with the confidentiality options for the years 2015-2019.

| Member State | A | N | V |
|---|---|---|---|
| BEL | 14,044 | 10,030 | |
| BGR | | 4,404 | |
| CYP | | 12,499 | |
| DEU | | 34,496 | |
| DNK | 85,425 | 30,230 | |
| ENG | | 197,509 | |
| ESP | 87,311 | 219,467 | |
| EST | | 4,722 | |
| FIN | 2,869 | 6,437 | |
| FRA | 51,247 | 754,709 | |
| GBG | | 789 | |
| GBJ | | 925 | |
| GRC | | 4,212 | |
| HRV | | 29,903 | |
| IOM | | 803 | |
| IRL | 75,378 | 24,586 | |
| ITA | | 137,006 | |
| LTU | 56 | 1,481 | 917 |
| LVA | 230 | 3,656 | |
| MLT | 953 | 11,660 | |
| NIR | | 12,965 | |
| NLD | 14,093 | 8,604 | |
| POL | 710 | 10,347 | |
| PRT | 166,497 | 58,304 | |
| ROU | | 829 | |
| SCO | | 61,329 | |
| SVN | | 5,720 | |
| SWE | | 76,986 | |

3.3.2 *If GIS technical skills are available in the EWG, produce maps of effort and landings by c-square (to be inserted in the EWG report) for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call)*

   a) Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters[4]

   b) Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and traps.

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[4] Defined here as waters not covered by the areas previously listed.

**Data and methods**

The first step of the spatial data analysis was to ensure that data are in the correct format and information provided is consistent across variables.

According to the FDI data call specification, spatial data on landings and effort (Tables H and I) must be submitted using one of the following notations:

- C-square code at 0.5x0.5 degree resolution, or:
- Latitude and longitude of the center of the rectangle together and its dimensions in decimal degrees:
    - *0.5*0.5,* corresponding to a c-square,
    - *0.5*1,* corresponding to an ICES rectangle,
    - *1*1* for ICCAT squares,
    - *5*5* for IOTC squares.

For future FDI data calls and to ensure consistency of sparial data provision by Member States, the variables ***rectangle_lon*** and ***rectangle_lat*** should be renamed respectively to ***lon*** and ***lat*** and should be reported using two decimal figures.

In order to account for the different geographical formats allowed, the geographical data validation process adopted last year was implemented and documented in a series of scripts made available to the experts during and after the working group. The geographical data validation process includes three basic checks:

a. Some countries provided records containing both the **c-square code and coordinates**, the validation routine checked the compliance of c-squares notation with the geographical coordinates submitted.
b. Other countries reported **only c-square notation**; these records were verified against a list of all valid 0.5x0.5 c-square codes.
c. A third type of check was applied on records that contained **only coordinates and the type of rectangle.** The validation routine for these records calculated the remainder of the division and verified that the coordinates indicated were the geographical center of the rectangle/square indicated in the rectangle type field.

The expert working group recommends including the above mentioned data validation checks in the FDI data call uploading tool. Additional checks identified erroneous records that were misspecified (not global coordinates) or were land-based coordinates. To perform the point in polygon operation needed to identify points on land, a new c-square data set indicating the type of c-square (sea, land, and coast) was created and made available during the working group. The expert working group recommends incorporating the enriched c-square dataset in the FDI database and advise that all the datasets and scripts used in the checks are published on the data collection website and/or in the *Geodata* section of the EU Master data Register for fisheries.

After the preliminary spatial checks the subgroup identified the need to visualise the spatial effort and landings data during the EWG. Visual inspection through mapping will facilitate EWG experts in identifying less evident spatial issues like swapped coordinates, sub regions and supra_region mismatch.

Considering the volume and confidentiality of the data coupled with different level of aggregations needed for visual inspection, the expert working group recommends a server-based architecture hosted on the JRC's secure network be created. Access to the server and publishing rights (to deploy own data analysis to the server) should be restricted to the invited experts to the EWG and relevant Commission staff (e.g. JRC personnel) and should be limited to the duration of the working group.

The geographical data validation process highlighted an overall improved quality of the spatial data submitted with only 1.41% of invalid records for Table I and 1.13% invalid records for Table H. After the invalid records were omitted, the spatial data sets were created by aggregating the individual records of Table I and Table H at the following level:

***Country, Year, Quarter, Macro-gear, Confidentiality, Specon, Sub region, Fishing zone, ICES Rectangle, value (effort/landings) and c-square code***

The aggregated spatial landings and spatial effort data sets were utterly cleaned of all records where there was no indication of the Sub-region and where the unit of measurement for landings was incorrect.

When viewing the results of spatial analysis, it is important to note that data submissions for the Mediterranean and Black Sea was mandatory for the years 2017-2019 but voluntary for 2015 and 2016.

A comprehensive catalogue of maps depicting fishery-dependent spatial data is given in Annex 4.

A selection of maps depicting effort by main Fishing Region are given in Figures 3.3.2.1. and by macro-gear type are given in Figures 3.3.2.2.

**Figure 3.3.2.1:** Spatial effort maps by main fishing zones

a) Baltic Sea

b) North Sea

## c) North Western Waters

## d) South Western Waters



Logarithm of Fishing days: -10 -5 0 5 10

## e) Mediterranean and Black Sea



Logarithm of Fishing days: -5 0 5 10

## f) Distant Waters

**Figure 3.3.2.2:** Spatial effort maps by main gear types
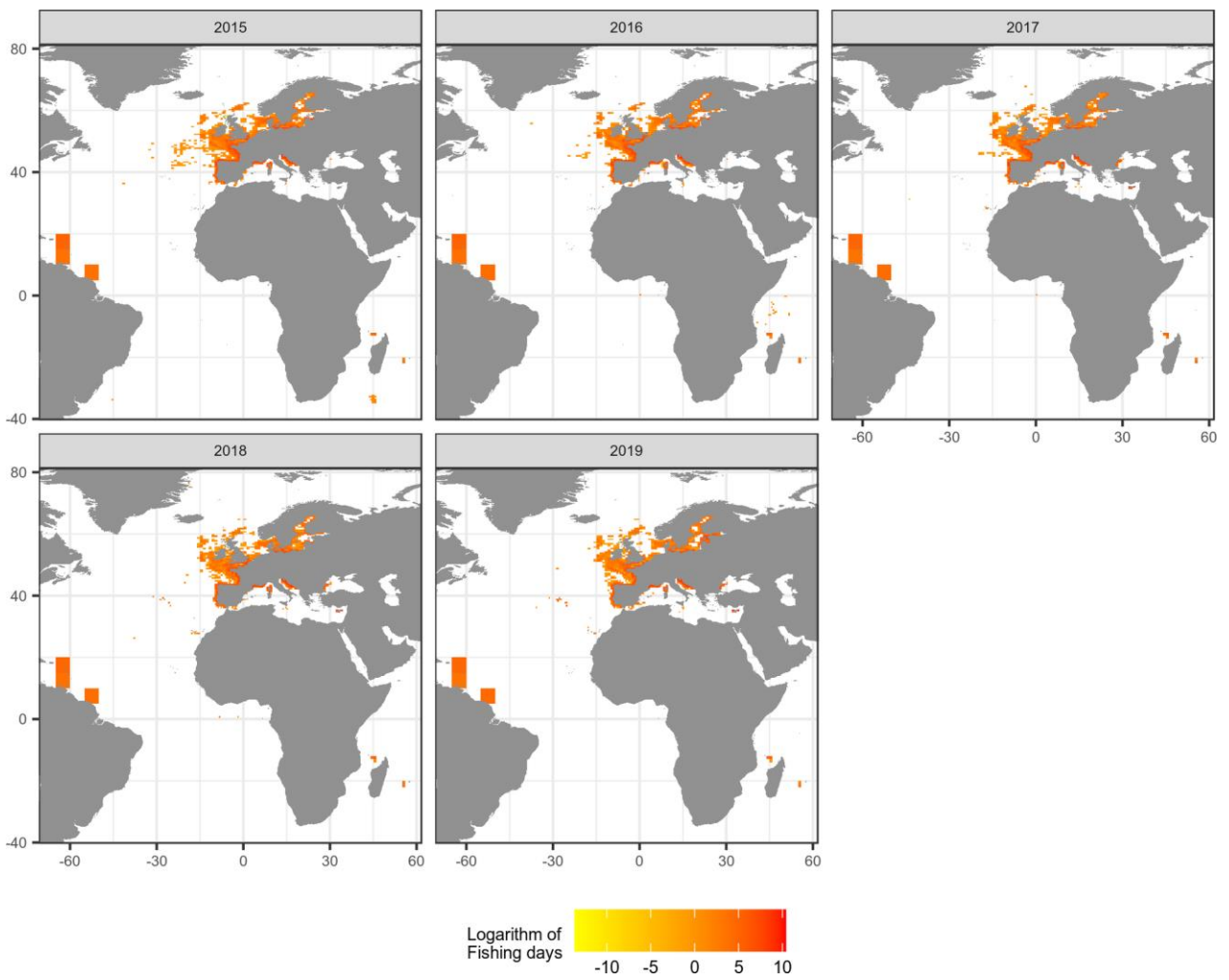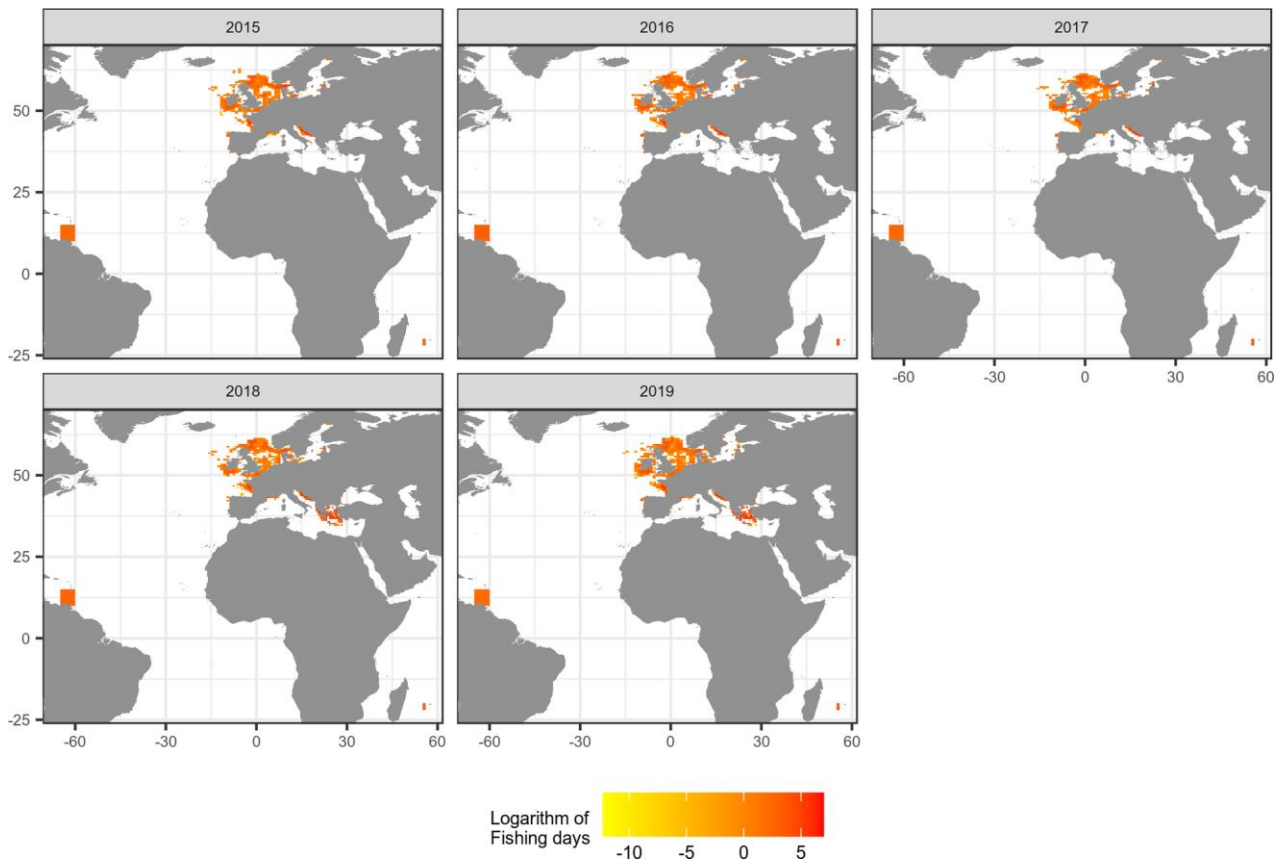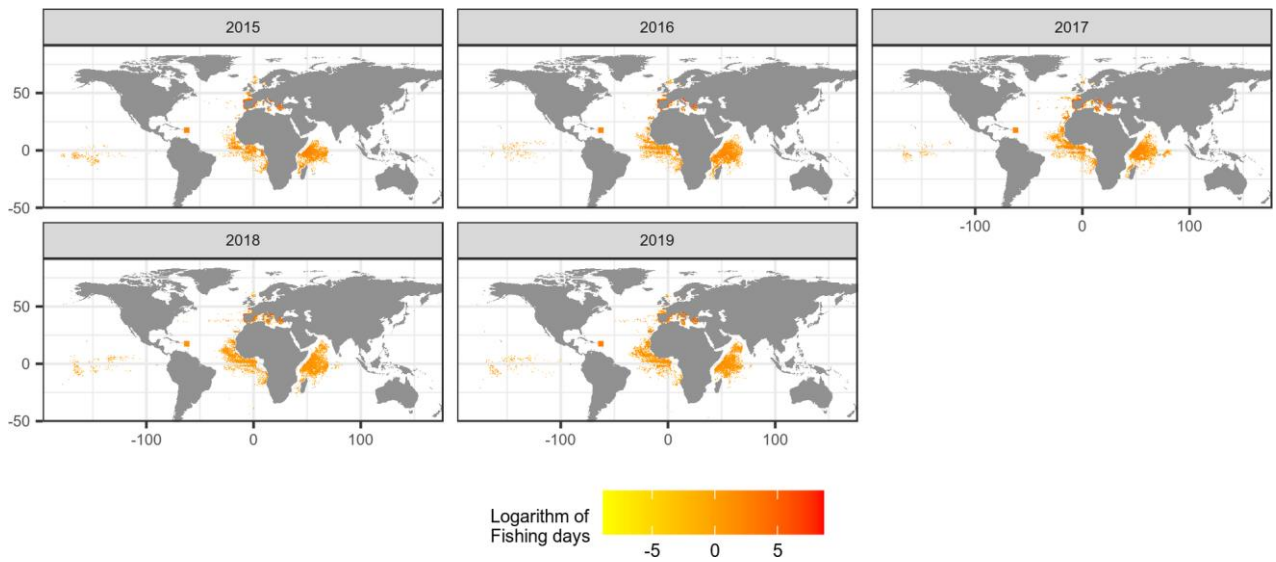
a) Dredges

## b) Hooks



Logarithm of
Fishing days

## c) Nets



Logarithm of
Fishing days

## d) Seines



## e) Surrounding nets

f) Beam trawlers with less than 120mm mesh size
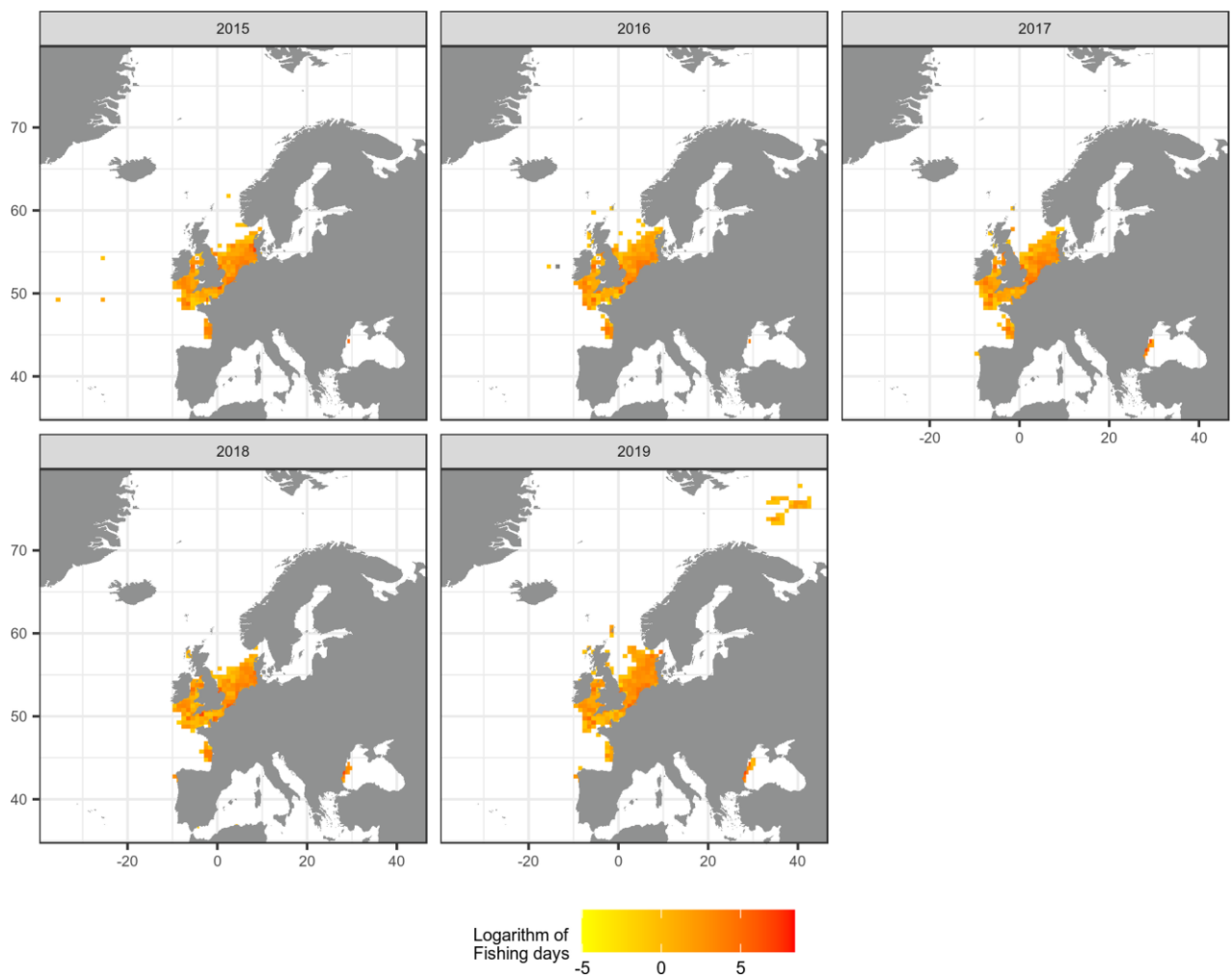
## g) Beam trawlers with more than 120mm mesh size
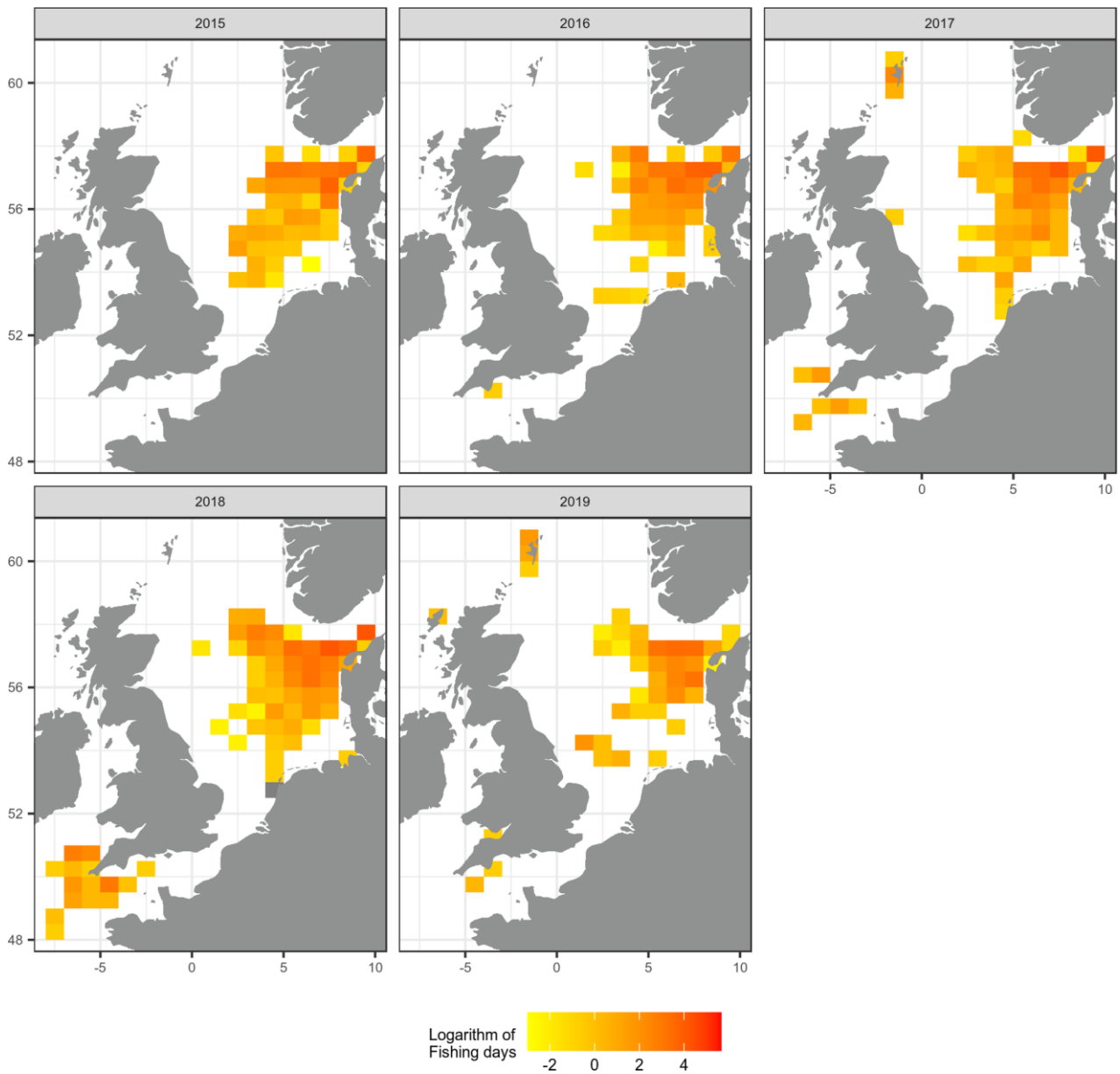
h) Beam trawlers with unknown mesh size
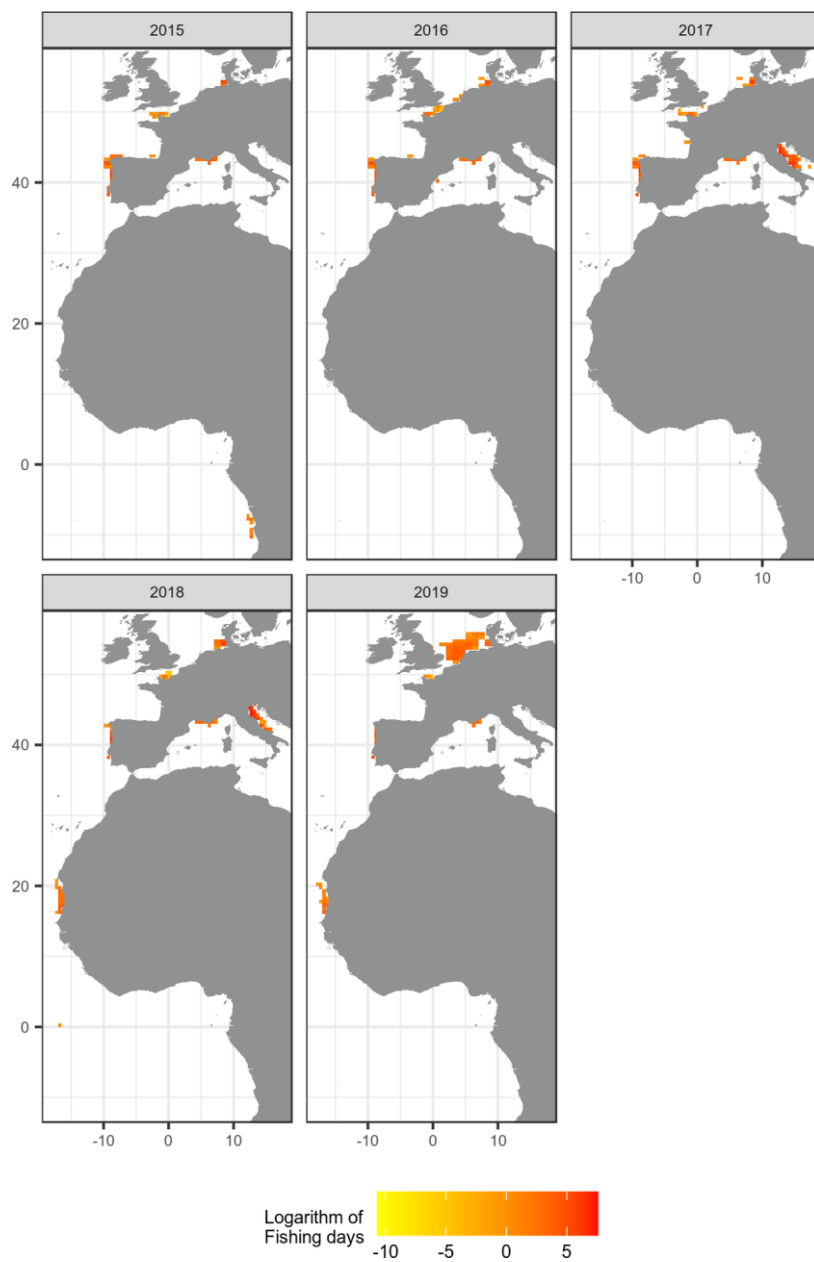
## i) Traps
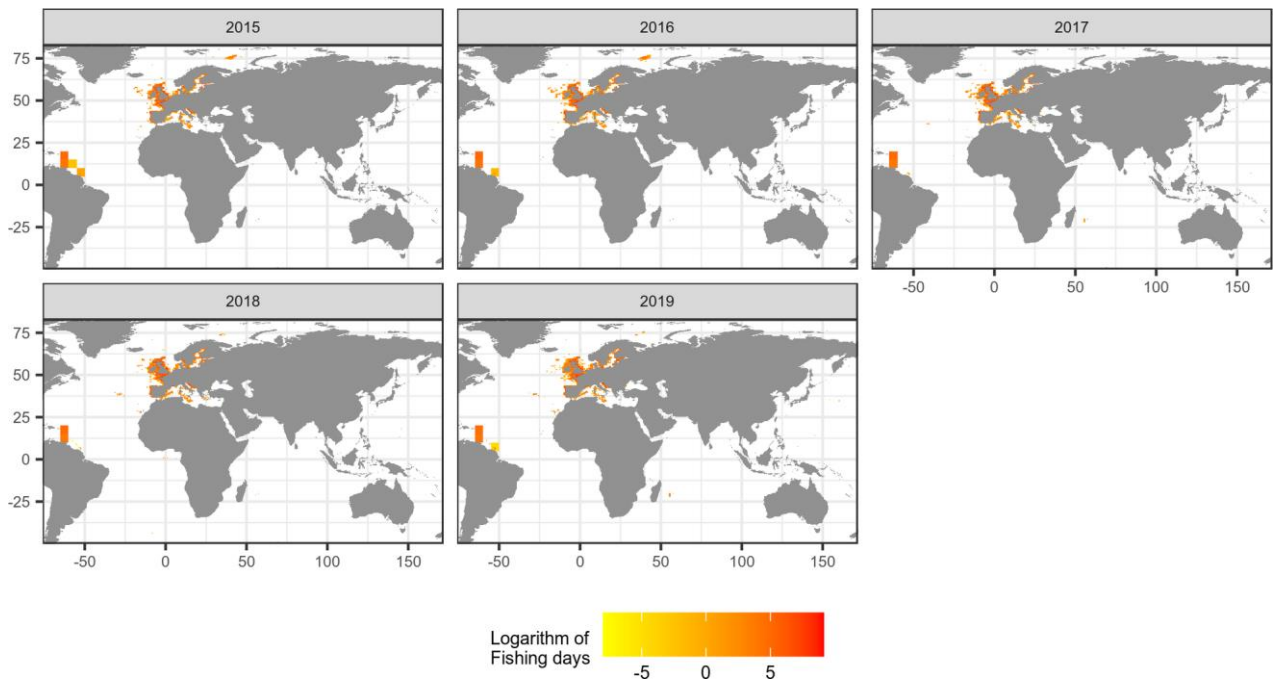


## j) Trawlers with less than 100mm mesh size
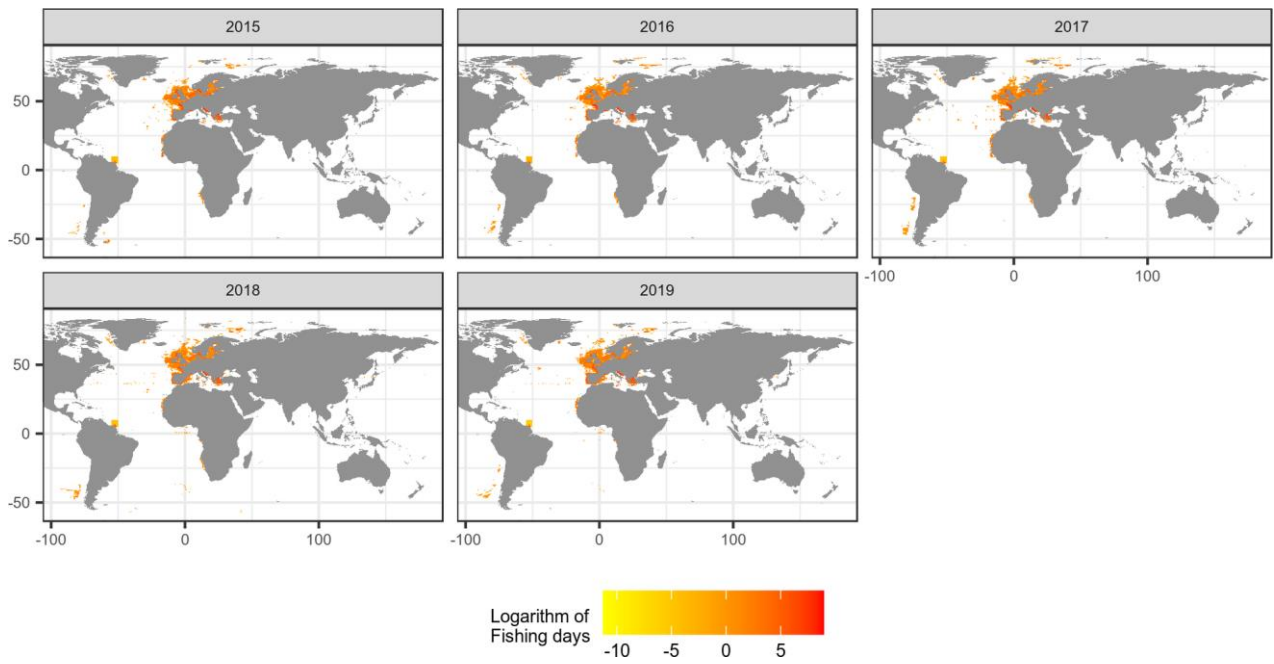
k) Trawlers with more than 100mm mesh size
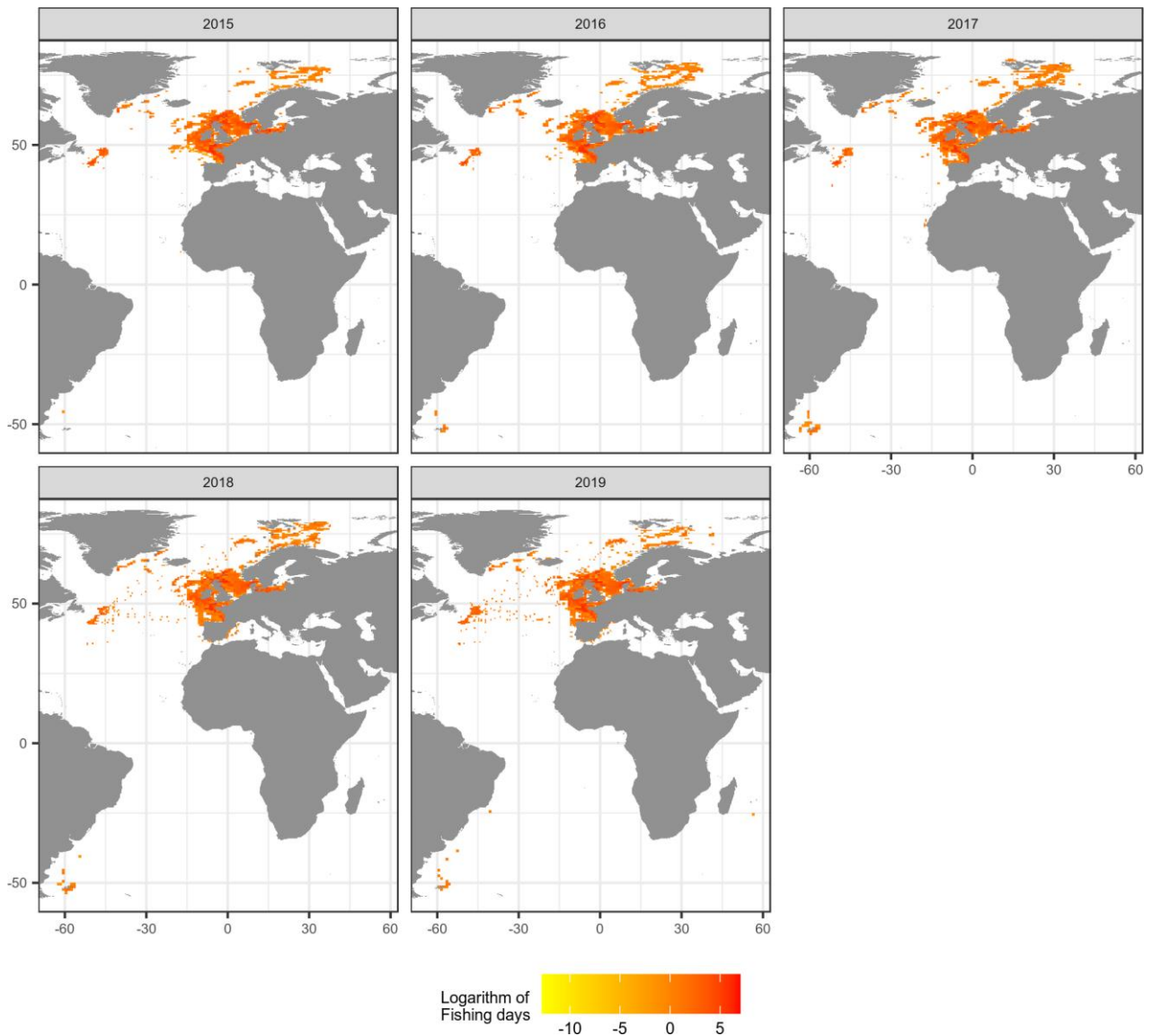


l) Trawlers with unknown mesh size
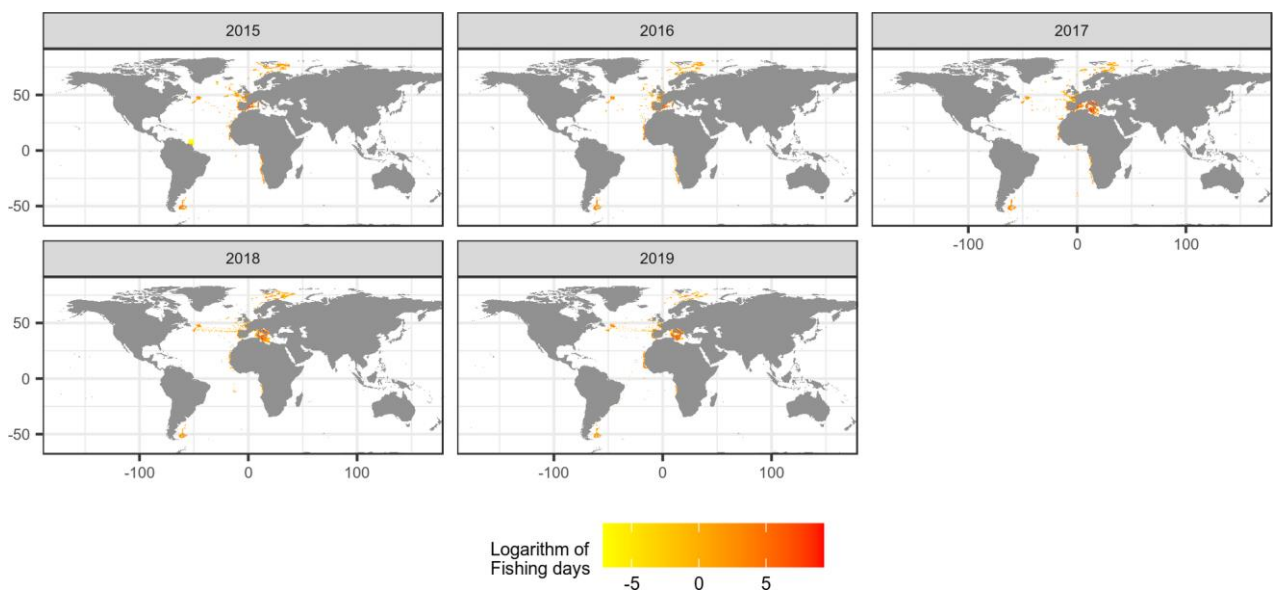
**Figure 3.3.2.3:** Spatial landings maps by main fishing region

a) Baltic Sea
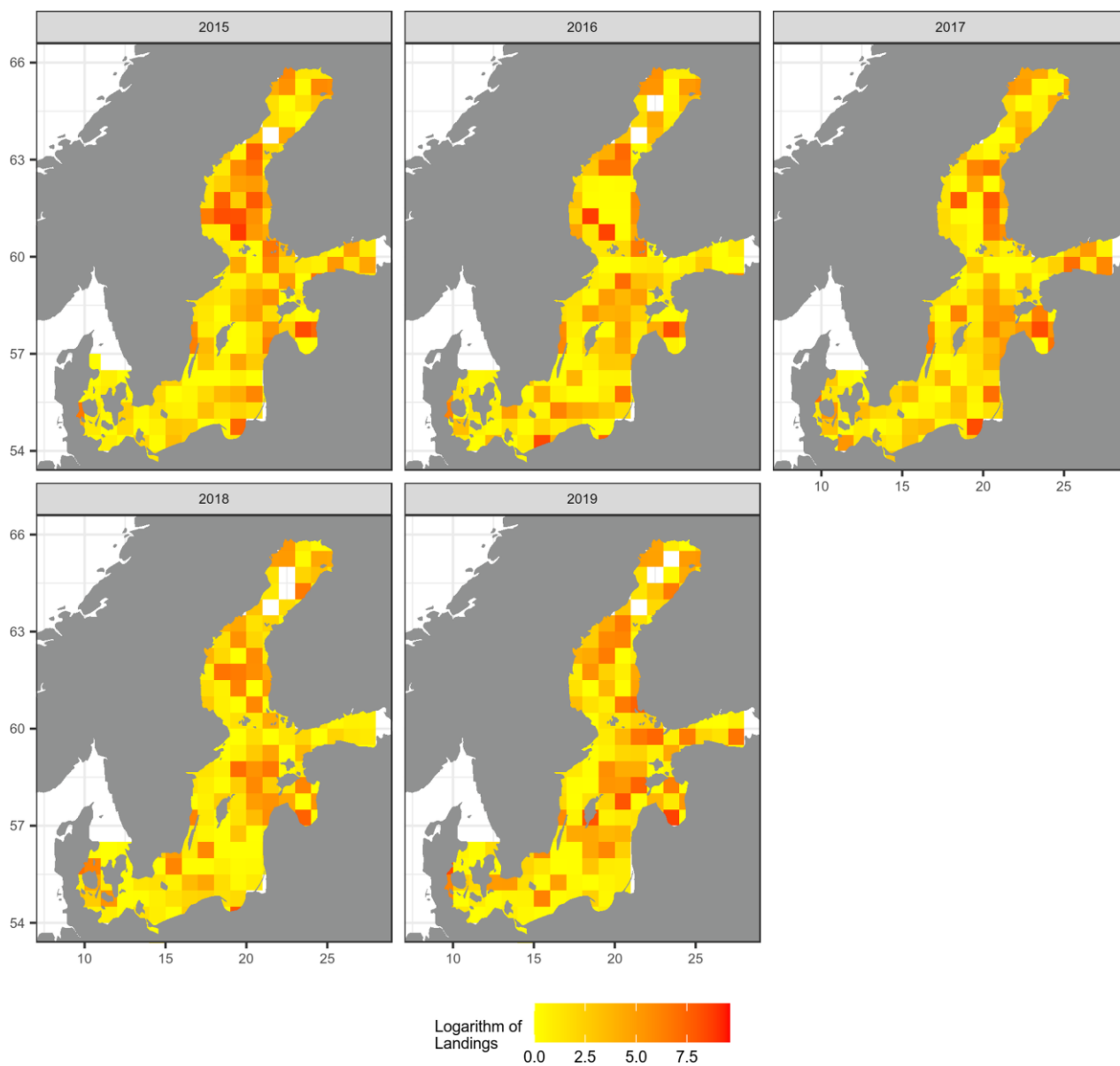
b) North Sea
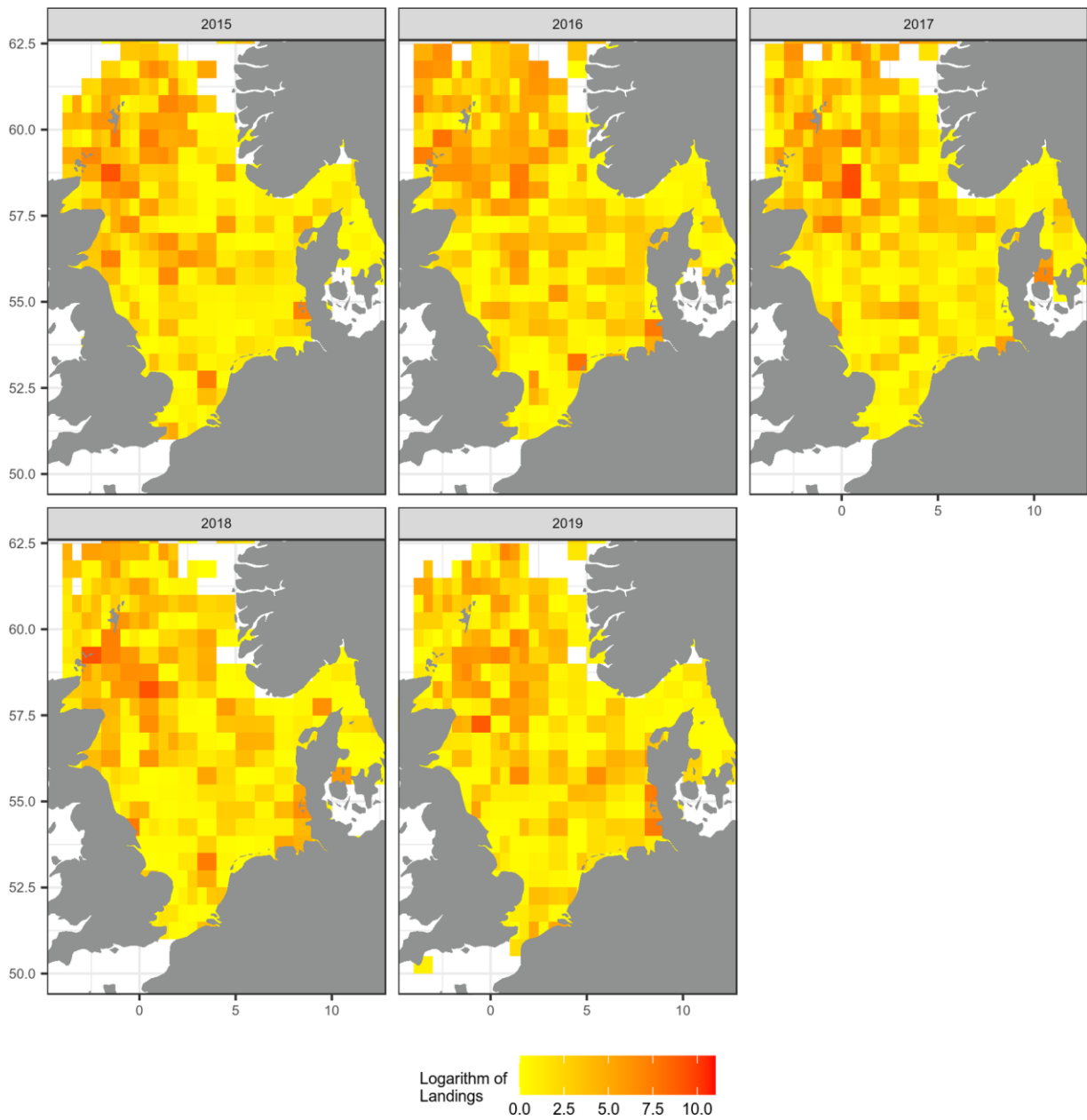
## c) North Western Waters
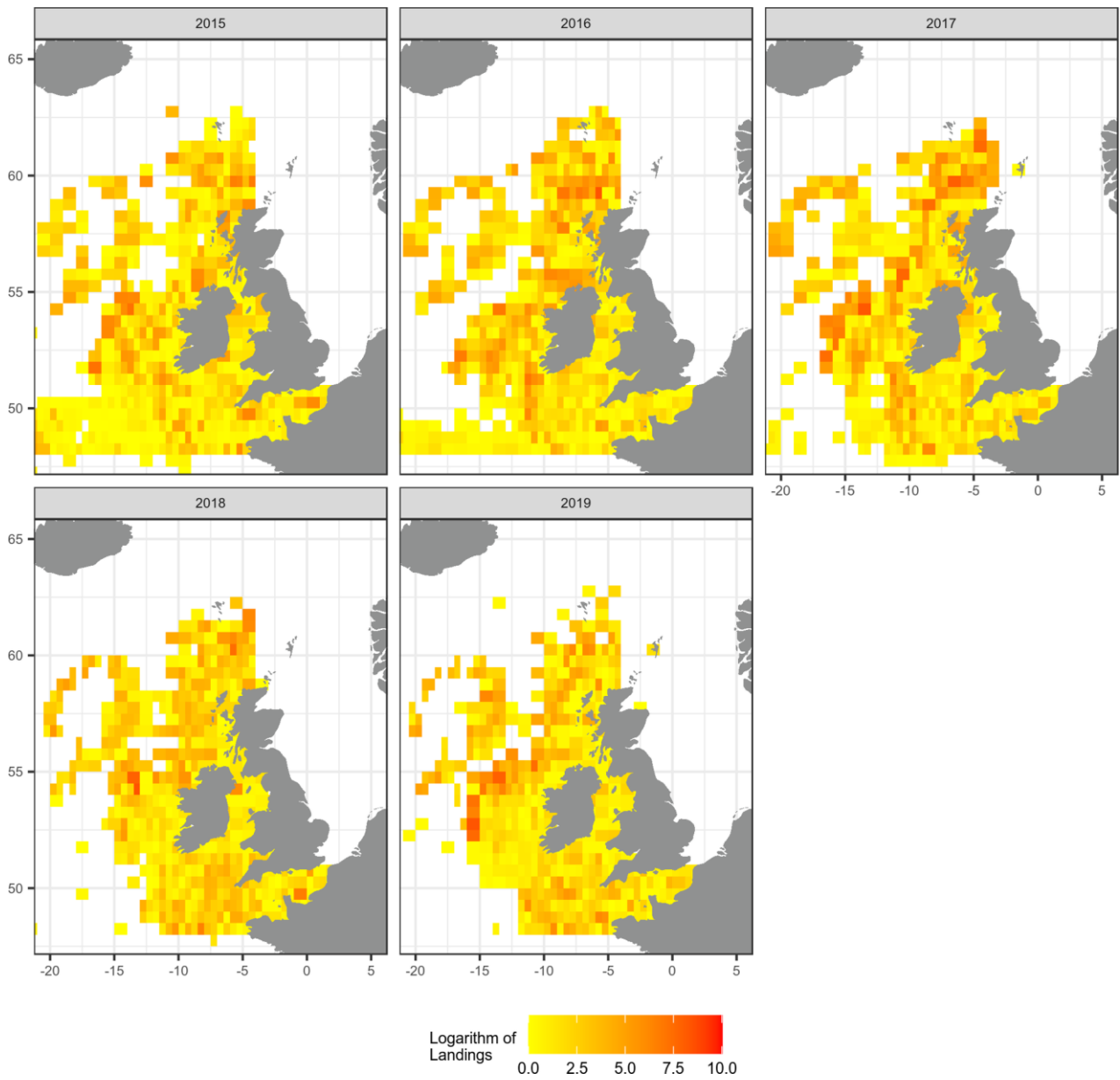
d) South Western Waters
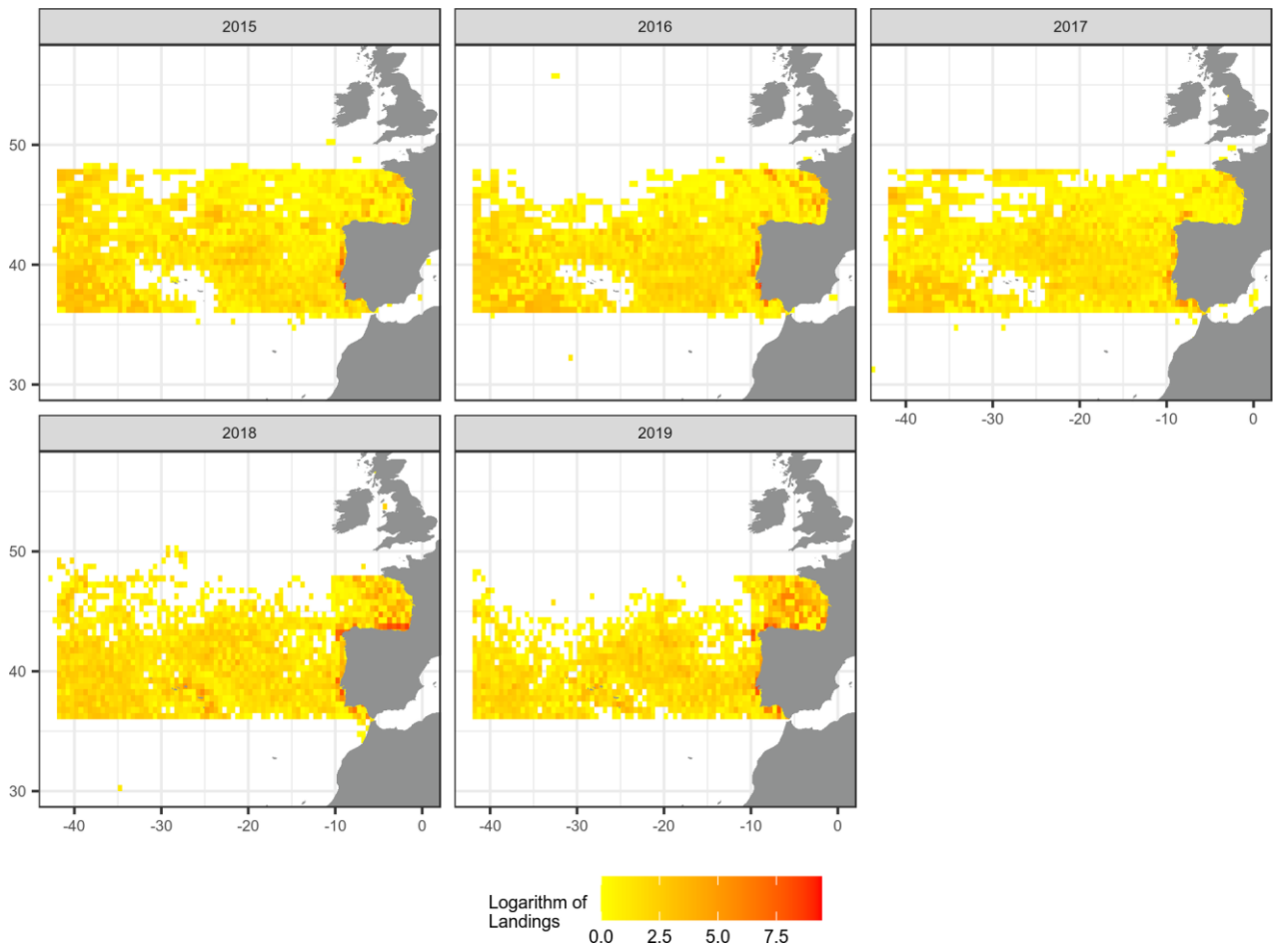
## e) Mediterranean and Black Sea
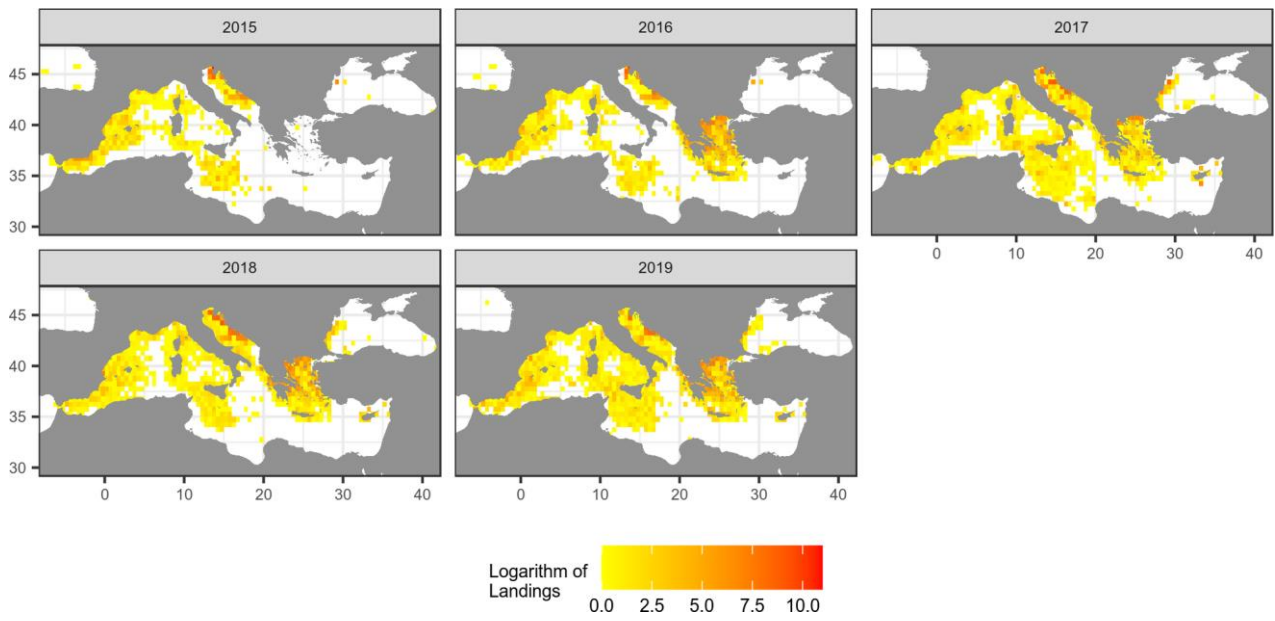


## f) Distant waters
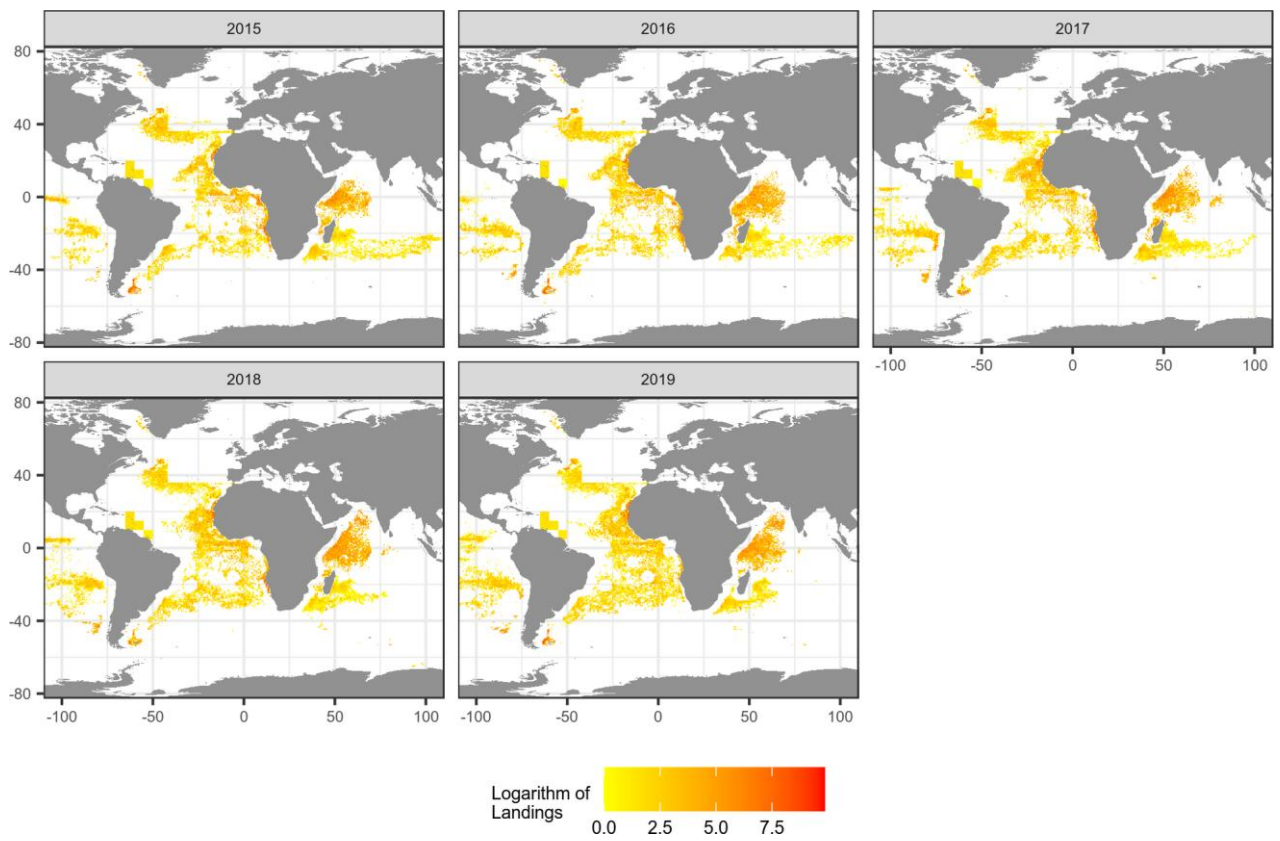
**Figure 3.3.2.4:** Spatial landings maps by main gear types
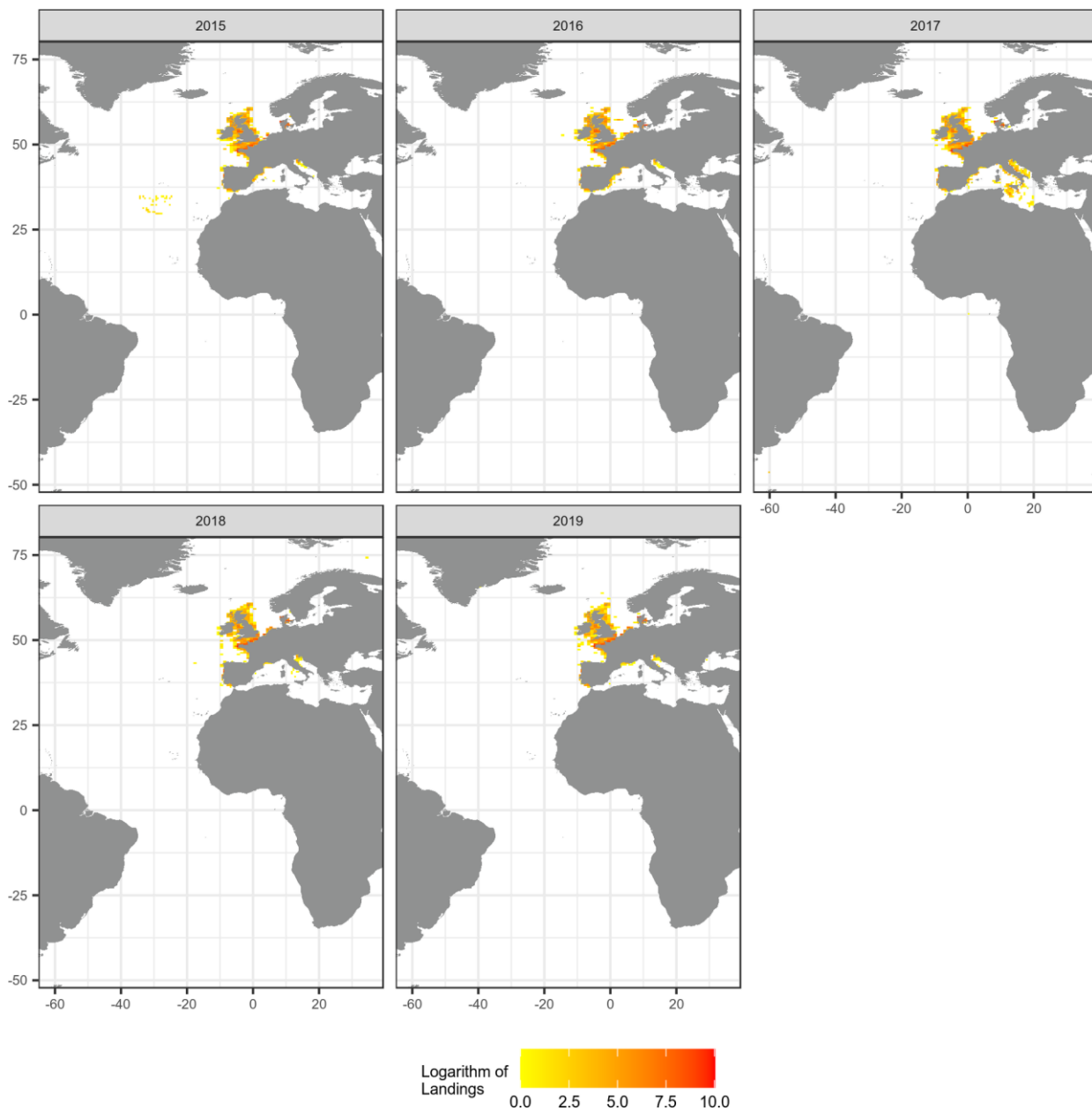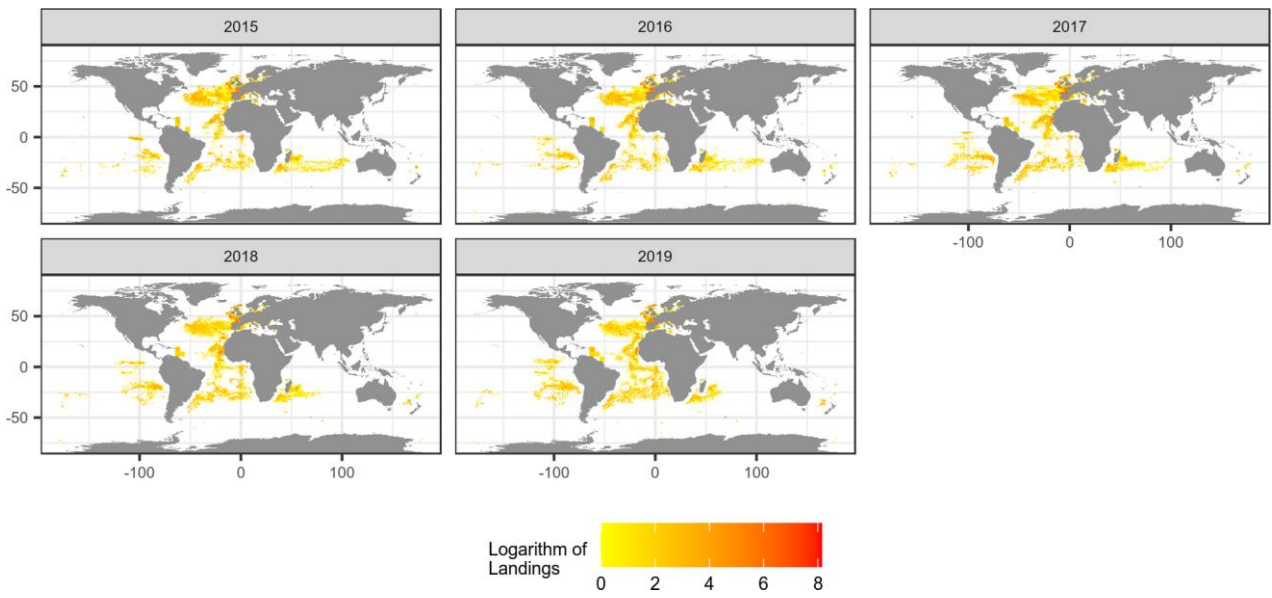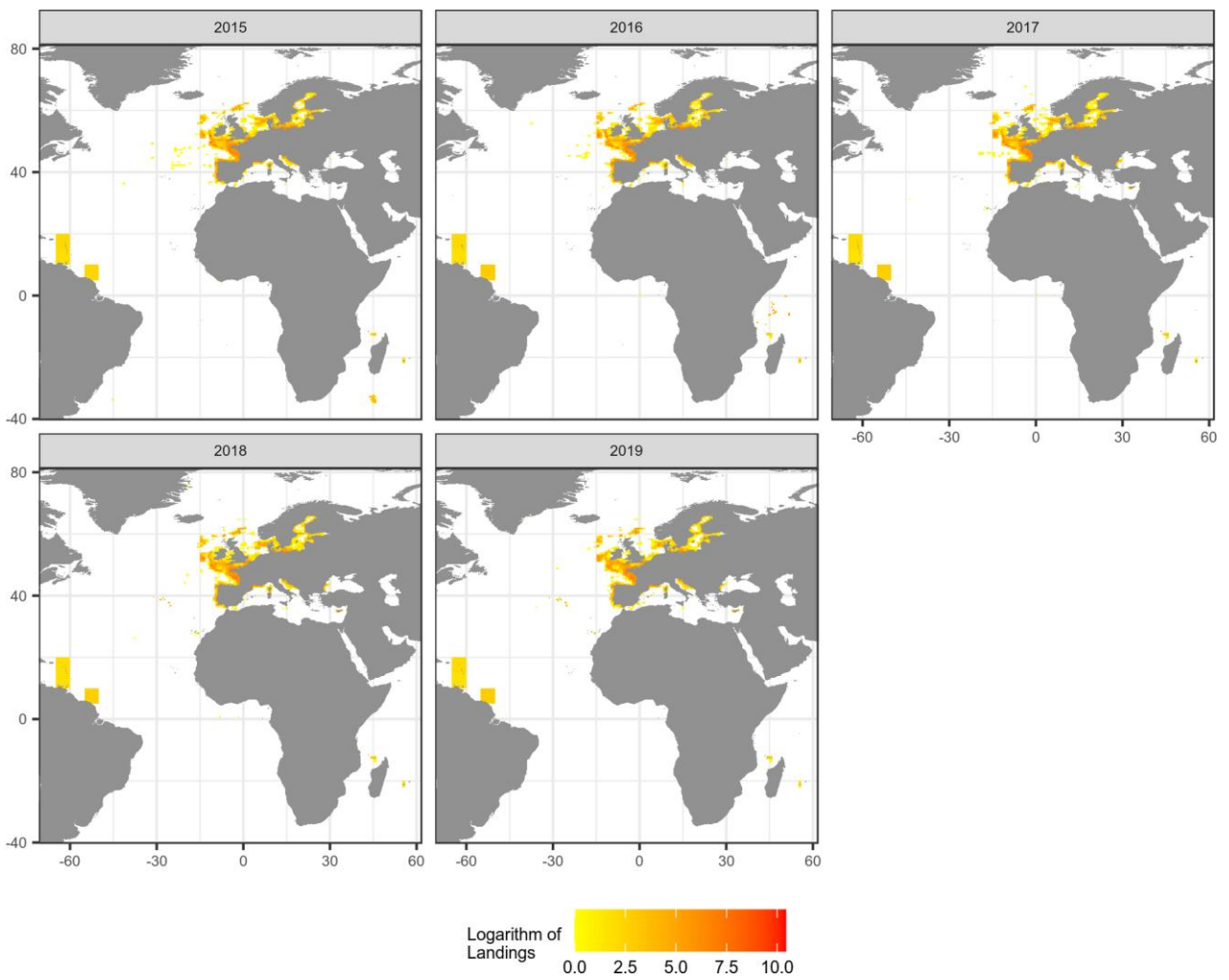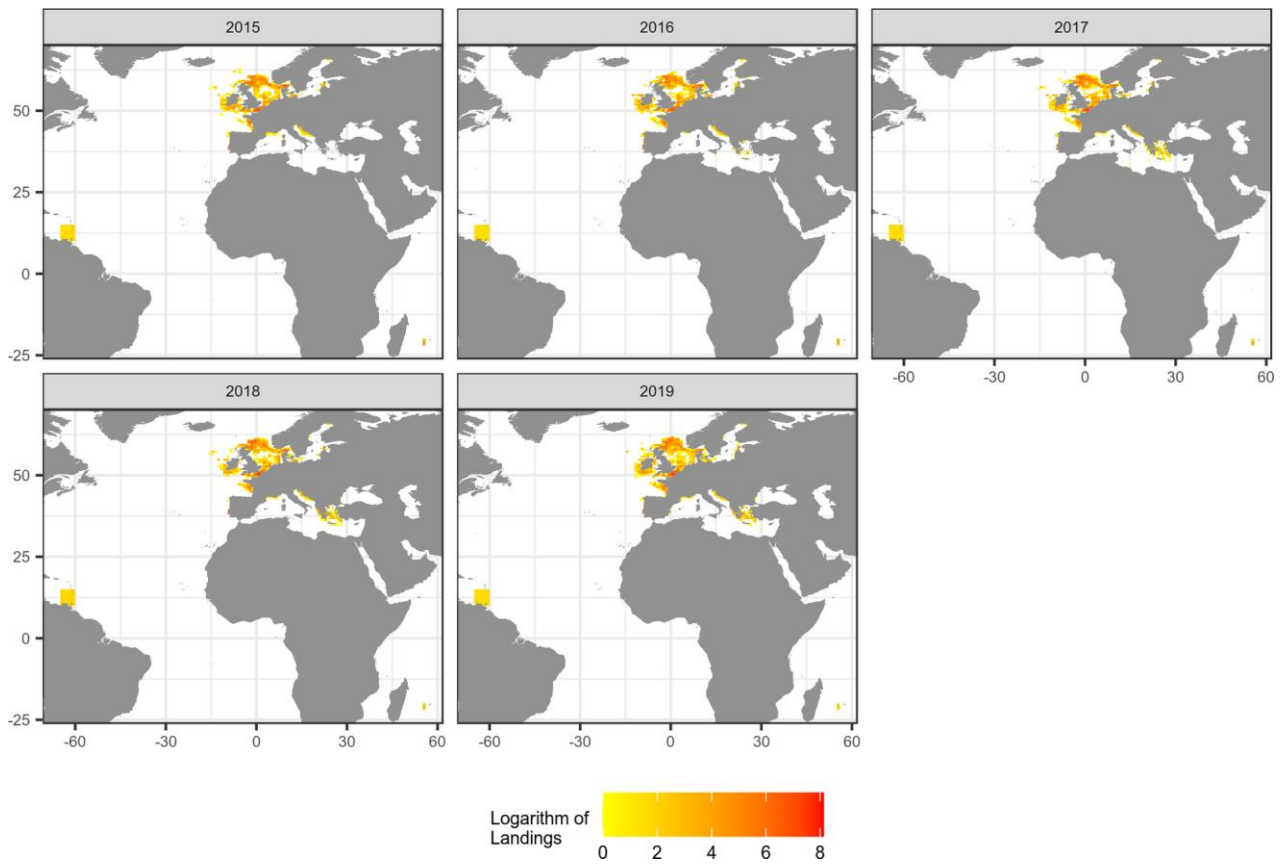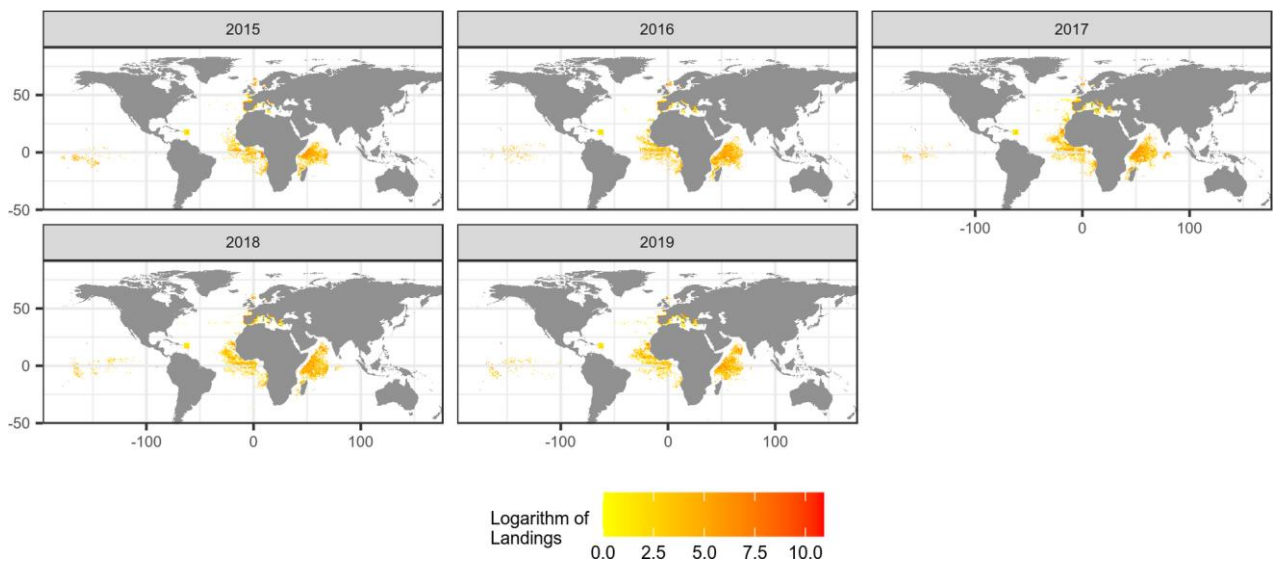
a) Dredges

## b) Hooks



Logarithm of Landings: 0 2 4 6 8

## c) Nets



Logarithm of Landings: 0.0 2.5 5.0 7.5 10.0

## d) Seines



## e) Surrounding nets

f) Beam trawlers with less than 120mm mesh size
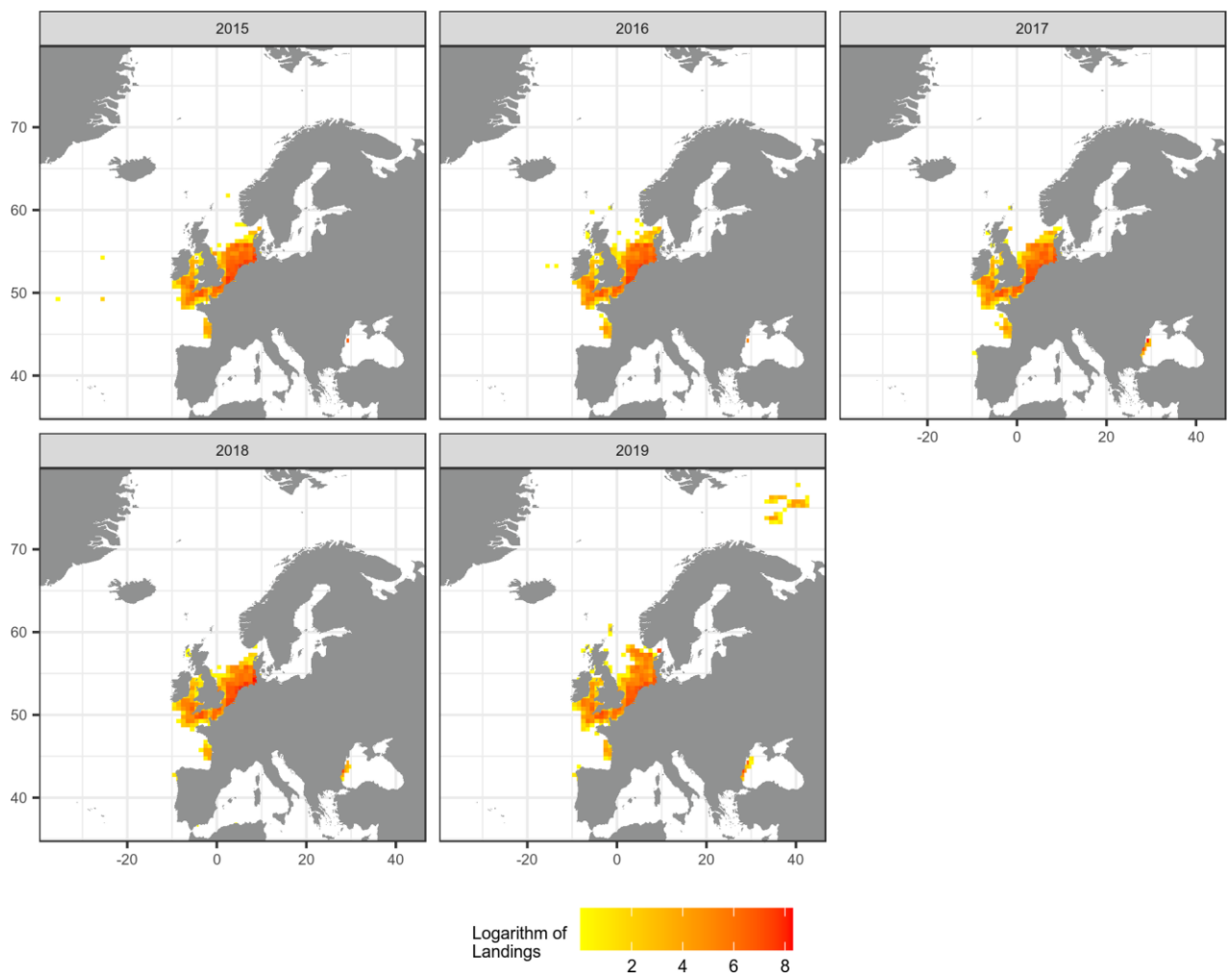
g) Beam trawlers with more than 120mm mesh size
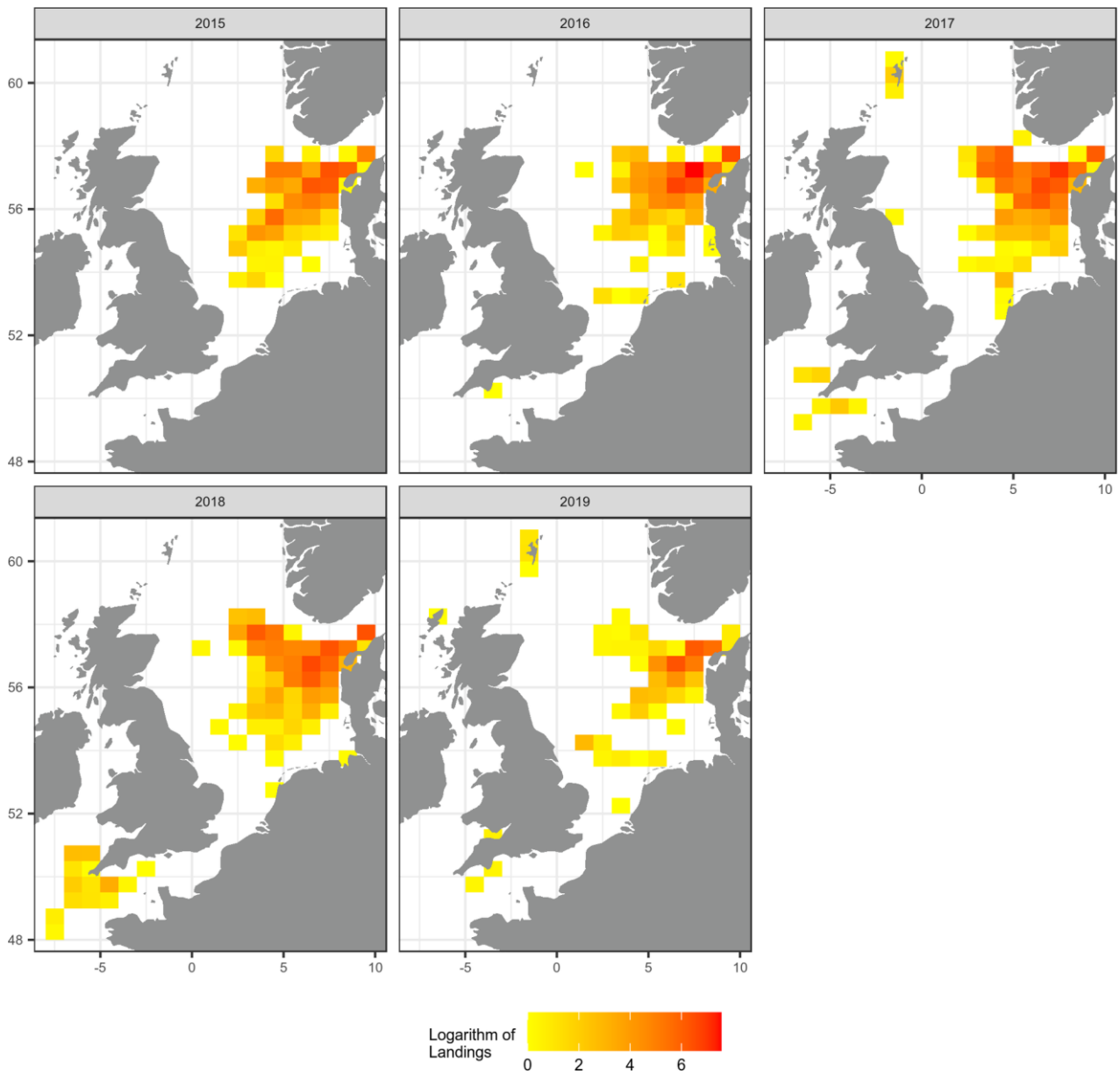
h) Beam trawlers with unknown mesh size
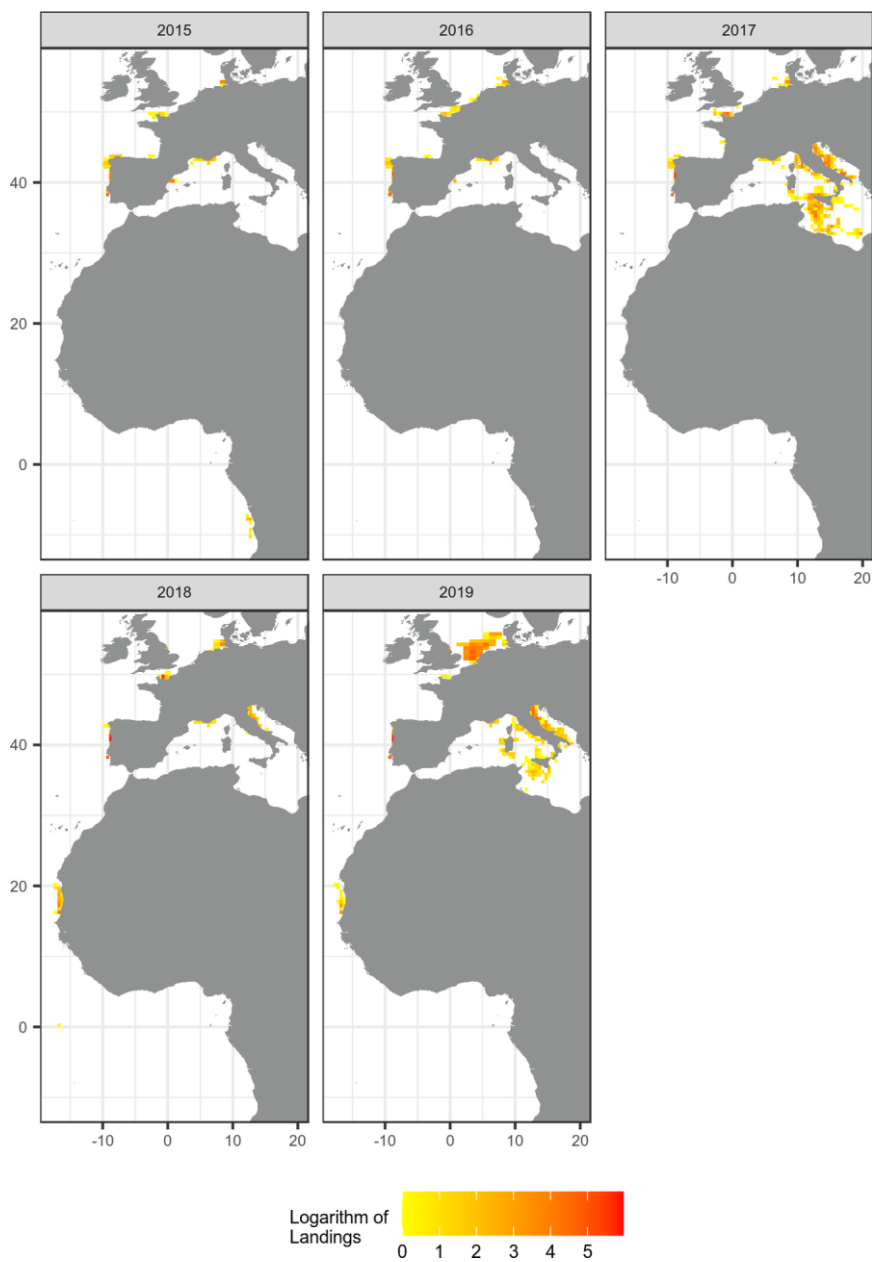
## i) Traps
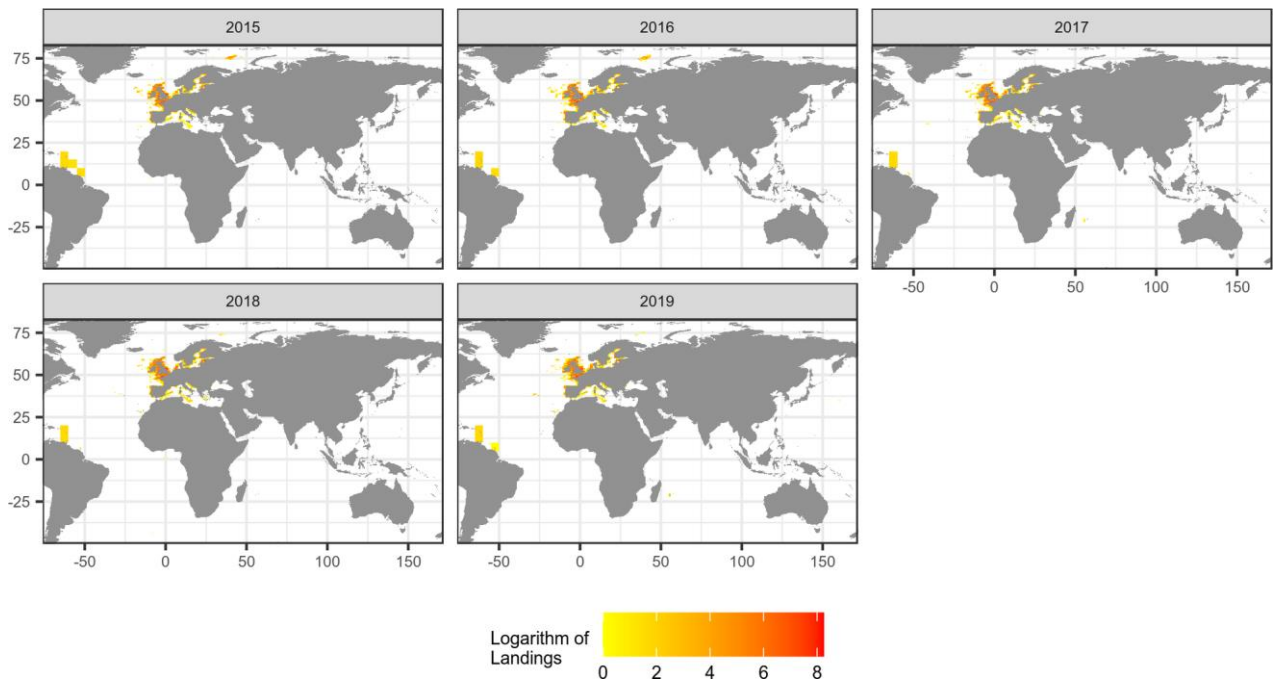


## j) Trawlers with less than 100mm mesh size
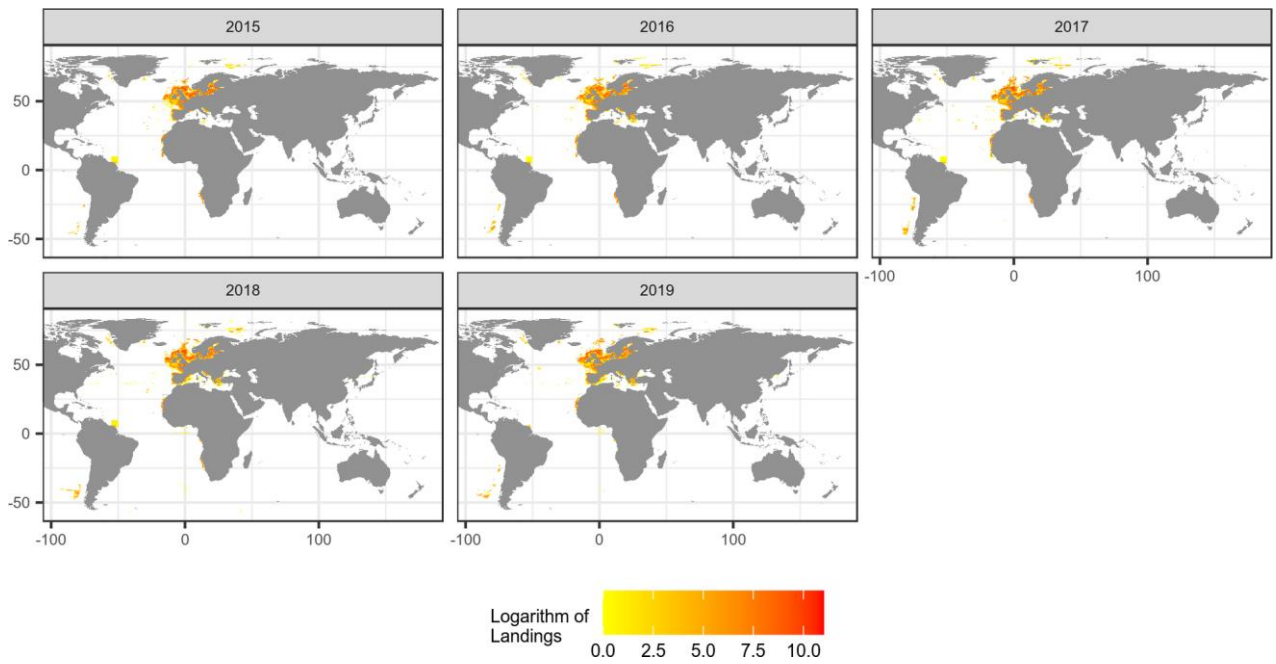
k) Trawlers with more than 100mm mesh size
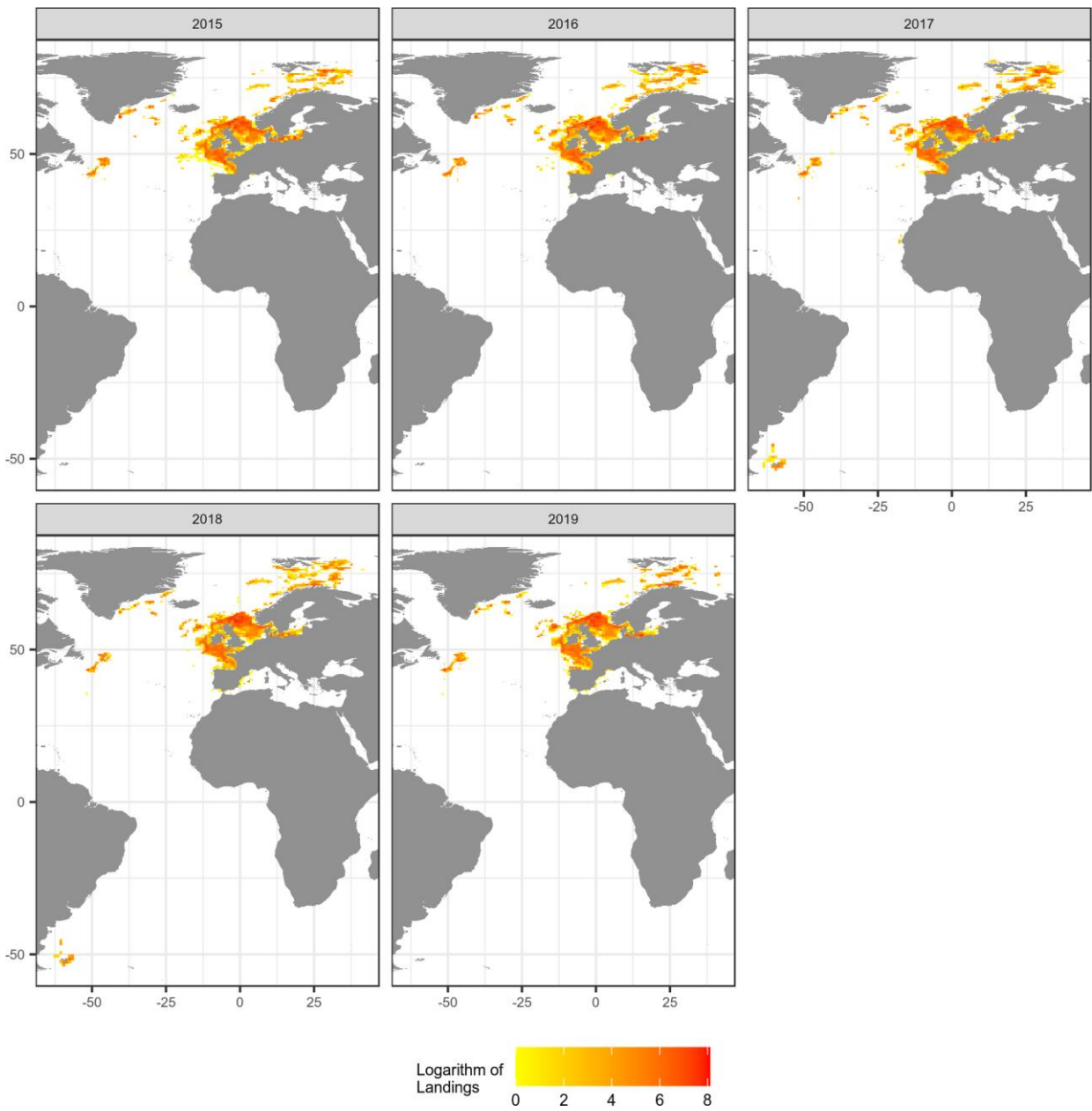
l) Trawlers with unknown mesh size
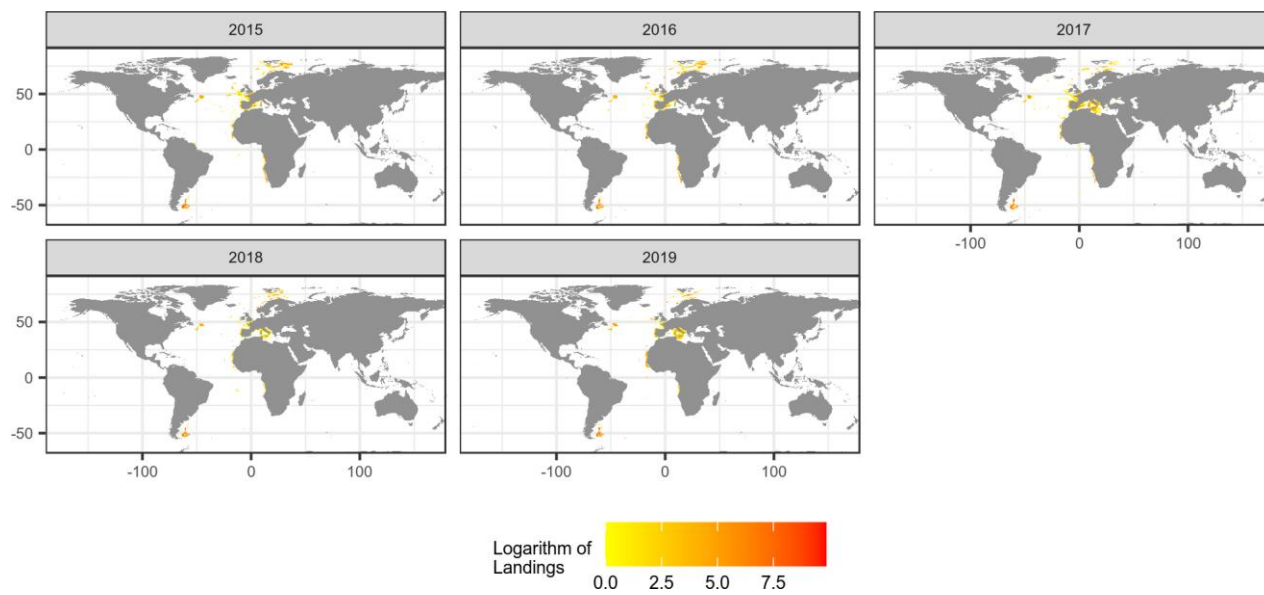
# 4 PROPOSALS TO IMPROVE FUTURE DATA CALLS

The FDI expert working group discussed proposed updates to the data call, methodological issues and guidelines to improve future data calls. The outcomes of those discussions are summarized in this section.

## Proposed updates to Table B

The expert working group agreed on the following alterations to the data call to help to clarify and improve Table B:

4. REFUSAL_RATE: The raw industry refusal rate *(<1, precision to 2 digits after the decimal)*, which is defined as the proportion of vessel skippers who, having been successfully contacted, ultimately failed to allow the observer to go on board to obtain the sample; if not known use 'NK'.

5. COVERAGE_RATE: the proportion of the population that was sampled as a rate *(<1, precision to 2 digits after the decimal)*, 'NK' if not known.

6. NONRESPONSE_RATE: The non-response rate *(<1, precision to 2 digits after the decimal)*, which is defined as the proportion of all attempted contacts that ultimately failed to provide a sample, for whatever reason; if not known use 'NK'.

It was also suggested that 17. SUCCESS_RATE should be removed as it is not particularly helpful and can be calculated from other variables available in the table.

## PRINCIPAL_SUB_REGION

PRINCIPAL_SUB_REGION is a new variable asked since this year in the table J *(Capacity and fleet segment effort)*. The introduction of this new variable was discussed last year by the expert working group and is linked with the objective to harmonize the JRC data calls *(FDI, Mediterranean and Fleet Economic data calls)*.

The expert working group proposed to add some guidelines in the data call for its calculation specifying that 1) principal sub-region has to be calculated vessel by vessel *(i.e. calculated at the vessel level)* and 2) consequently the variables "TOTTRIPS", "TOTKW", "TOTGT", "TOTVES", "AVGAGE", "AVGLOA" and "MAXSEADAYS" should be calculated for each combination of "COUNTRY" * "YEAR" * "VESSEL_LENGTH" * "FISHING_TECH" * "SUPRA_REGION" * "GEO_INDICATOR" * "PRINCIPAL_SUB_REGION".

The expert working group proposed also the following rule: In order to define the principal sub-region of a vessel *(where the vessel has his majority fishing activity during the year)*, the metric "number of fishing days" should be used.

## NEP_SUB_REGION

NEP_SUB_REGION is a new variable asked since this year in the Tables A *(catch summary)*, C *(discards age data),* D *(discards length data),* E *(landings age data)* and F *(landings length data)*. The introduction of this new variable was proposed last year by the expert working group and is linked with the objective to harmonize the FDI data call with the scientific estimators provided in particular in ICES data call.

As it was not completely obvious for data provider, the expert working group proposed to add some guidelines in the data call specifying that this variable is asked only for "Norway lobster" catches *(NEP / "Nephrops norvegicus" catches)*.

## DEEP

DEEP is a variable asked in the Tables A *(catch summary)*, G *(effort summary),* H *(landings by rectangle)* and I *(effort by rectangle)*.

In the data call, nowadays, only references to DEEP regulations is provided. In order to support data providers and improve data harmonisation between Member States, the expert working group proposed to add in the data call guidelines specifying: 1) the list of species concerned for

each of the two regulation to be considered *(one before 2017 and one after)* and 2) the methodology to consider in order to assign a fishing trip as a "DEEP fishing trip".

The methodology the expert working group proposed is the following: <u>a fishing trip must be assigned as a "DEEP fishing trip" when catch of Deep Sea species retained is more than 100kg</u> *(deep species to be considered being described in the corresponding EU regulations, see below).*

For data up to and including 2016, list of 'deep-sea species' to be considered are the ones listed in the Annex I of the EU regulation No. 2347/2002 ([https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002R2347&from=FR](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002R2347&from=FR)).

For data from 2017, list of 'deep-sea species to be considered are the ones listed in the Annex I of the EU regulation No. 2016/2336 ([https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R2336&from=FR](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R2336&from=FR)).

## Time series of the data call

FDI data have been requested for 5 years *(from 2015 to 2019)* except for Mediterranean and Black Sea regions' Tables H and I where data were requested only for 3 years *(2017-2019)*.

From a scientific point of view, there is a strong need to have a data time series for as long a period as possible *(e.g. for stock assessment or benchmark analysis)*.

On the other hand, adding many years to the data call constitutes a supplementary burden for Member States, which could result in provision of data of lower quality and coverage. Furthermore, unless the data call is not yet stable *(e.g. list of metier could be modified next year taking into consideration the work done by the RCG subgroup dealing with metier issues),* the full time-series of data would need to be called for and re-uploaded.

Taking into account the above mentioned together with the improvement in the quality of data provided this year, the expert working group proposed to adopt "step by step" approach and in 2021 to call for data for 7 years from 2014 to 2020 if there is a change in the metier list, otherwise only 2020 and 2014 will be officially called for with the possibility to re-upload the entire time-series from 2014 to 2020 *(except for Table H and I for Mediterranean and Black Sea which could be asked only from 2017)*. In 2022, provided that the data call is fully stabilized, data for 2021 and 2013 would be called for to complete the time-series. The option for Member States modify and re-upload 2014-2020 data should remain.

## Sharing methodology and improving guidelines

The EWG encourages future FDI EWGs to further develop and improve guidelines and encourage Member States to share methodologies in order to harmonize the data provided enhancing their comparability and uniformity. To facilitate such enhancements, the EWG has proposed a meeting to focus on methodological aspects/issues and checks of the data provided by the Member States (see section 3.3.1).

As an example, DOMAIN_DISCARDS and DOMAIN_LANDINGS are variables not straightforward to compute and ensure compatibility with the National scientific sampling designs. Comparing methodologies used by different Member States to calculate these indicators and developing common guidelines may be a good way to further improve quality and comparability of the FDI data provided by different Member States.

Furthermore, the expert working group noted inconsistencies in capacity *(numbers of vessels)* in Tables G *(Effort summary)* and J *(Capacity and fleet segment effort)* for some Member States and years. Specifically, some fleet segments *(i.e. combining "year * vessel length classes * fishing technique")* listed in Table G were not present in Table J.

The issue appears to arise because of alternative interpretations of the guidelines on how Member States should provide data regarding fishing techniques, supra-region and vessel length categories and whether it is appropriate to provide data for Table J by clustered fleet segments. These are typical methodological issues that could be addressed during a second meeting focused on methodological aspects as proposed by the expert working group.

The expert working group discussed this specific issue and proposed that the guidelines to future data calls should be clarified and amended in the following way for future data calls:

1. Tables A *(Catch summary)*, G *(Effort summary)*, H *(Landings by rectangle)*, I *(Effort by rectangle)* and J *(Capacity and fleet segment effort)* should be provided at the level of the fleet segment *("year\*vessel length classes \* fishing technique")* and not by clustered fleet segment *(clustering fleet segment should be considered only to provide economic data; capacity, effort and catch data may be available at the fleet segment level)*.

2. Fishing technique *(FISHING_TECH)* should be calculated at the "vessel\*year" level *(vessel by vessel, year by year)* and should be provided in the same way in all the tables where they are called for: Tables A, G, H, I and J. Each "vessel\*year" must then be assigned to only one fishing technique in response to the data call. The fishing technique should be assigned to the vessel taking into account all its fishing activity during the year *(and not only during a fishing trip for example).* It is therefore possible that a vessel assigned to the *"vessel using pots and/or traps"* fleet segment could have part of its fishing activity with set gillnets *(GNS)* when the majority of its fishing activity is pots and traps (FPO).

3. Supra-region *(SUPRA_REGION)* should be calculated at the "vessel\*year" level *(vessel by vessel, year by year)* and should be provided in the same way in all the tables where they are called for: tables A, G, H, I and J. Each "vessel\*year" must be then assigned to only one supra-region in response to the data call; the Supra-region where most of its activity takes place during the year *(and not only during a fishing season for example)*. The metric to be used should be the "number of fishing days". It is therefore possible that a vessel has a part of its fishing activity taking place in a sub region belonging to a different supra region than the one where the most of its activity take place and to which it is assigned.

**Improving the data checks**

While it is the responsibility of the Member States to check their own data prior to submission, the expert working group acknowledges the importance and utility of the different data checks implemented by the JRC. Such checks are vital to ensure the quality of data uploaded to the database and the EWG would be unable to complete the tasks requested of it without such a facility. While the data checks already implemented are extremely useful to the EWG and to Member States alike, it would be useful if additional checks could be developed.

## 5 CONTACT DETAILS OF EWG-20-10 PARTICIPANTS

Information on EWG participant's affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest, which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: https://stecf.jrc.ec.europa.eu/adm-declarations

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# 6    LIST OF BACKGROUND DOCUMENTS

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-16-20); Publications Office of the European Union, Luxembourg; EUR 27758 EN; doi:10.2788/502445

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-17-12); Publications Office of the European Union, Luxembourg; EUR 29204 EN; doi:10.2760/094412

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-18-11); Publications Office of the European Union, Luxembourg; EUR 28359 EN; doi:10.2760/696153

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-19-11); Publications Office of the European Union, Luxembourg; EUR 28359 EN; doi:10.2760/230618

## 7    ANNEXES

## Annex 1. Member States sections on Methodology, Data availability, Coverage, Problems encountered and other comments

### A1.1 BELGIUM

### Methodology

QUARTER and YEAR are based on the trip return date.

For the VESSEL_LENGTH, the length overall is related to the fleet throughout the year and not to the fleet on the 1st of January.

FISHING_TECH of a vessel for a certain year was determined based on the highest fishing days recorded for a certain gear.

### Table B:

In 2015-2017 the Belgian catch sampling schemes moved from a 'métier-based' to a 'statistically sound' sampling scheme in order to apply at random sampling of the trips. Considering the importance of the Belgian beam trawl fleet targeting demersal species, Belgium focusses on the collection of fishery-dependent data for this fleet (both fleet segments). The two fleet segments (TBB_DEF_>221 kW and TBB_DEF_<=221 kW) are treated as two separate strata in the Belgian at sea sampling programme. Catch information (all catch fractions are covered) is obtained through on-board observation or 'at sea sampling'. The primary sampling unit (PSU) is vessel x trip (as a proxy for trip) and a haul (within a trip) is defined as the secondary sampling unit (SSU). Four ILVO observers assure a sampling coverage of on average 1% of all fishing hours (i.e. approximately 40 trips). The sampling effort targets for one year are set at 8 trips for the TBB_DEF_<=221 kW fleet segment and 32 trips for the TBB_DEF_>221 kW fleet segment. A vessel x trip (PSU) for the TBB_DEF_>221 kW fleet segment is selected by means of a random draw from a vessel list (with replacement). Only the vessels that are willing to take observers onboard and those that are suited, from a logistic point of view, to have an observer onboard are included in the vessel list (sampling frame): 19 vessels out of 28 vessels in total. A vessel x trip (PSU) for the TBB_DEF_<=221 kW fleet segment is selected ad hoc. The vessel list (sampling frame) has been steadily decreasing and proved too small to ensure random PSU selection.

The REFUSAL_RATE was calculated as the number of trips of which the vessel skippers (who had been successfully contacted) refused to take an observer on-board divided by the total number of trips of which the vessel skippers were successfully contacted (INDUSTRY_DECLINED/(TRIPS_SAMPLED_ONBOARD + INDUSTRY_DECLINED)).

The NONRESPONSE_RATE was calculated as the number of attempted vessel skipper contacts minus the sampled trips divided by the number of attempted vessel skipper contacts ((TOT_SELECTIONS – TRIPS_SAMPLED_ONBOARD)/ TOT_SELECTIONS).

Within the framework of the ongoing optimization of the at sea sampling design, at the end of 2017, Belgium decided to move away from the random based design and introduced a non-probability-based sampling programme (ad hoc and standard quota sampling) for the TBB_DEF_kW>221 fleet on the first of January 2018.

| COUNTRY | YEAR | SAMPLE_FRAME | REFUSAL_RATE | COVERAGE_RATE | NONRESPONSE_RATE | VESSELS_FLEET | TRIPS_FLEET | TRIPS_SAMPLED_ONBOARD | UNIQUE_VESSELS_SAMPLED |
|---|---|---|---|---|---|---|---|---|---|
| BEL | 2015 | TBB_DEF_>221kW | 0.346153846 | NK | 0.73015873 | 29 | 994 | 17 | 14 |
| BEL | 2016 | TBB_DEF_>221kW | 0.290322581 | NK | 0.666666667 | 28 | 1045 | 22 | 11 |
| BEL | 2017 | TBB_DEF_>221kW | 0.225806452 | NK | 0.578947368 | 30 | 1005 | 24 | 10 |
| BEL | 2018 | TBB_DEF_>221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2019 | TBB_DEF_>221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2015 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2016 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2017 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2018 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2019 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK |

| COUNTRY | YEAR | SAMPLE_FRAME | UNIQUE_VESSELS_CONTACTED | NOT_AVAILABLE | NO_CONTACT_DETAILS | NO_ANSWER | OBSERVER_DECLINED | INDUSTRY_DECLINED | SUCCESS_RATE | TOT_SELECTIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| BEL | 2015 | TBB_DEF_>221kW | 22 | 17 | 2 | 4 | 14 | 9 | 0.26984127 | 63 |
| BEL | 2016 | TBB_DEF_>221kW | 19 | 16 | 0 | 8 | 11 | 9 | 0.333333333 | 66 |
| BEL | 2017 | TBB_DEF_>221kW | 15 | 17 | 0 | 1 | 8 | 7 | 0.421052632 | 57 |
| BEL | 2018 | TBB_DEF_>221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2019 | TBB_DEF_>221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2015 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2016 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2017 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2018 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK | NK |
| BEL | 2019 | TBB_DEF_<=221kW | NK | NK | NK | NK | NK | NK | NK | NK |

## Table A (discards) and tables C-F:

The biological data on discards, length and age distributions (discards and landings) have been processed to answer the ICES data calls and is based on sampling data from the at-sea observer programme conducted under the DCF. The thresholds applied for submitting biological data (discard quantity and length distributions (discards and landings)) are listed in table 1.1 and were updated through time. For the 2018 data call, an additional criteria of at least 50 age measurements was applied for the submission of age distributions.

For the stocks: bll.27.3a47de, cod.27.47d20, lem.27.3a47d, ple.27.7d and sol.27.7d, no length frequency distribution of the 2019 landings were provided in table F because of an error in the R code to generate the FDI output. This affects the calculation of the percentages of landings estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in the exemptions outlined in the discard plans for 2021 (ToR 2.2).

Domains have been defined, corresponding to the sampling programme. For species that have corresponding landings by quarter, vessel length group and/or metier within the same discards domain, the annual estimates of discard ratio (discards/catch) have been applied to those landings to calculate the DISCARDS by quarter, vessel length group and metier (table A). Discard data from the logbooks were not used.

**Table 1.1:** Thresholds for providing biological data

| Variable | Sampled | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| discard quantity | 2 | and | 65 | | | | | | |
| | 2 | | | and | >=70 kg landings sampled weight | | | | |
| | 2 | | | | | and | >= 20 kg discards sampled weight | | |
| discards length distribution | 2 | and | 65 | | | | | | |
| | 2 | | | and | >=70 kg landings sampled weight | | | | |
| | 2 | | | and | >= 20 kg discards sampled weight | and | discard ratio < 0.2 | | |
| | 2 | | | and | >= 20 kg discards sampled weight | | | and | 100 length measurements |
| landings length distribution | 2 | and | 65 | | | | | | |
| | 2 | | | and | >=70 kg landings sampled weight | | | | |
| | 2 | | | and | >= 20 kg discards sampled weight | and | 100 length measurements | | |
| | 2 | | | and | >= 20 kg discards sampled weight | | | and | discard ratio >=0.2 |

## Table A (landings) and table H:

TOTWGHTLANDG and TOTVALLANDG are based on combined information of logbook data and sale slips. The actual landed weight and value are split according to the logbook information on hours fished in the respective rectangles.

## Table G and table I:

TOTSEADAYS, TOTFISHDAYS (table G) and EFFECTIVE_EFFORT (table I) were calculated using the 'fecR' package. TOTKWDAYSATSEA and TOTKWFISHDAYS and calculated as respectively days at sea and fishing days multiplied by the power of the vessel in kilowatts at the trip landing date and area. Same approach for calculating

TOTGTDAYSATSEA and TOTGTFISHDAYS with the gross tonnage of the vessel. The engine power and gross tonnage are related to the fleet throughout the year and not to the fleet on the 1st of January.

For the calculation of HRSEA, the total hours at sea of a trip was split proportionally to the days at sea, over the areas where fishing activity was recorded for that trip.

**Table J:**

To determine TOTKW, TOTGT, AVGAGE and AVGLOA, the fleet was not considered on the 1st of January. The most recent vessel configuration throughout the year was selected.

PRINCIPAL_SUB_REGION of a vessel for a certain year was determined based on the highest days at sea recorded for a certain fishing area.

**Data availability**

The data was finalised and available by the data call deadline.

**Coverage**

**General comments:**

Belgium provided fleet specific landings data for the period 2015-2019 derived from official logbook databases for all vessels ≥10 meters. The data covers all areas in which the Belgian fleets are active and conform to the requested aggregation. There is no information on misreporting. Gear types such as trammels and seine nets are missing mesh size information. The beam trawl fleet targeting demersal fish with an engine power smaller or equal to 221 kW was not randomly sampled and therefore no refusal rate was calculated. Since 2018 the sampling strategy changed and all the vessels were selected ad hoc, therefore no information on refusal rate was available. Belgium provided effort data for the period 2015-2019 for all relevant areas where the Belgian fleets are operational.

Data were marked as CONFIDENTIAL if the data relate to less than 3 vessels. Values in the fields TOTWGHTLANDG and TOTVALLANDG in table A and table H were both considered as confidential when the criteria of < 3 vessels was met.

**Comparison with EUROSTAT data:**

**Landings**

Overall the 'total weight landed' reported in the FDI data set is comparable with the landings uploaded to EUROSTAT. The difference between the two data sets is larger in 2018 (375 t) compared to the other years (57 - 79 t). It appears that some species are double counted in EUROSTAT and that this was not corrected in the 2018 data. Half of the landings of Octopus spp (FAO code: OCZ) reported in EUROSTAT were also reported as Octopus vulgaris (FAO code: OCC), whereas in the FDI data set only Octopus spp were reported. This double counting also applies to a part of the Trachurus spp (FAO code: JAX) landings versus Trachurus trachurus (FAO code: HOM).

There is also a substantial difference in the reporting of the 2018 Crangon crangon (FAO code: CSH) landings between the FDI data (1576.1 t) and the EUROSTAT data (1412.9 t). This is due to the 'many to many' relationships between trips and sales that were incorrectly processed in the EUROSTAT output.

As in 2016 and 2017, there was also a smaller amount of Raja spp. (FAO code: SKA) reported in 2018 under the FDI data call (12.34 t in 2016, 1.31 t in 2017 and 4.57 t in 2018) compared to the EUROSTAT landings (66.7 t in 2016, 142.8 t in 2017 and 79.6 t in 2018). For the landings of rays by species, no substantial difference could be recorded in 2016 and 2017, whereas the 2018 EUROSTAT output of some ray species is much higher (e.g. Raja montagui (FAO code: RJM)). The same applies for the recording of Triglidae (FAO code: GUX) in 2018. The FDI data set has only recordings of gurnards by

species and those landings are smaller than the landings of gurnards by species in the EUROSTAT data set.

There's a different FAO code used for reporting anglerfish landings in the FDI data set versus the EUROSTAT data set. In the EUROSTAT data all landings of anglerfish are reported as 'ANF' whereas in the FDI data, the FAO code is different according to the stock. The landings in ICES area 27.4.a, 27.4.b, 27.4.c (stock anf.27.3a46) and 27.7.a (no stock defined for this area) are reported as 'ANF'. The landings in ICES area 27.7.d, 27.7.e, 27.7.f, 27.7.g, 27.7.h, 27.8.a and 27.8.b are reported as 'ANK' (stock ank.27.78ab) or 'MON' (stock mon.27.78ab). The sum of the landings of ANF, ANK and MON in the FDI data set (1118 t in 2015, 1450 t in 2016, 1597 t in 2017, 1096 in 2018 and 1200 in 2019) matches with the total landings of ANF in the EUROSTAT data set (1104 t in 2015, 1433 t in 2016, 1578 t in 2017, 1091 in 2018 and 1192 in 2019). The BSA landings should be excluded from the FDI data set to sum up the landings for anglerfish, as the EUROSTAT data set doesn't cover the BSA area.

**Number of vessels**

The number of vessels in table J of the FDI data set is less than the number of vessels reported in the EUROSTAT data set. For capacity, although the regulation states that the population is the fleet on the 1st of January, the most recent vessel configuration throughout the year was selected. This might explain the minor difference in the number of vessels.

**Comparison with AER data:**

For the AER data call, the fleet was not considered on the 1st of January. The most recent vessel configuration throughout the year was selected to determine kWDays, GTDays, kWFishDays and GTFishDays. For the FDI data call, the engine power and gross tonnage are related to the fleet throughout the year.

For the AER data call, the days at sea and fishing days calculation algorithm is analogues to the one applied by the fecR package. However, the calculated days at sea for a trip are split proportionally to the hours at sea over the ICES areas on which hours at sea were registered. Whereas in the fecR algorithm, the calculated days at sea for a trip is split equally over dates on which fishing occurs and the effort for each fishing date is split equally over the fishing activity on that date. For active gears in the AER data call, each fishing date has 1 fishing day that is split proportionally to the fishing hours over the ICES areas on which fishing occurs. Whereas in the fecR algorithm, each fishing date has 1 fishing day that is split equally over the ICES areas on which fishing occurs. The passive gears are treated equally. So, the total days at sea and fishing days in the FDI data set matches with the totals in the AER data set but the distribution by area is different

**Problems encountered**

No other comments.

**Other comments if relevant**

No other comments.


**A1.2 BULGARIA**

**Methodology**

The methodology used for the data collection and data processing for the FDI data call was not changed compared to previous years. The calculation of transversal data was the same for all DCF data calls - the data is extracted from the database administrated by the Executive agency for fisheries and aquaculture containing fleet register, logbooks, landing declarations, sales notes, etc. Based on the data from logbook are calculated the number of fishing trips, days at sea, fishing days and hours at sea.

All fishermen in Bulgaria are obliged to use fishing logbook based on the Bulgarian legislation and there is no difference between small scale fleet and the large scale fleet. Estimation procedures were not used because the sampling strategy in Bulgaria is census and data was available for each vessel.

There are no derogations, which are applicable to Bulgaria.

**Refusal rate**

The Bulgarian sampling design is considered probability based vessel selection design. The refusal rate is calculated as a proportion of vessel skippers who denied access to the observer to go on the board of the vessel. If the skipper does not answer his phone it is not marked as a refusal.

**Data availability**

The transversal data - capacity, landings and effort is available at the end of January for the previous year. All the tables for the data call were submitted before the deadline.

**Coverage**

The data provided in the data call covered all vessels fishing under Bulgarian flag in the Black sea during the reference period. There are no gaps in the data collection or data submission.

**General comments**

Bulgaria continued to use a census sampling strategy, so the provided data covers the whole Bulgarian fleet, which operates only in the Black sea. The data by rectangle is derived from VMS data for large scale fleet, vessels with active gears <12m and vessels which owned turbot quota, because they are obliged to use VMS. For the vessels under 12 m with passive gears, the rectangle from the landing declaration was used and only in case the rectangle was not filled by the owner of the vessel, the catch was allocated based on the landing port.

Some very small inconsistencies were marked in the data quality check tableau after the first submission of the data call tables, but they were corrected before the meeting.

The provided data for discards is from the logbook data.

**Comparison with Eurostat data**

The main difference between the FDI data and Eurostat data is again the number of vessels. The reason for the discrepancy is that the number of vessels provided to Eurostat includes the inactive vessels, while the data in the FDI is only for the active vessels. Also, very negligible differences are noted in regards to the landed fish (for some species there are differences less than 1 kg, probably due to the rounding of numbers).

**Publication of confidential data**

The data provided in this data call is not considered as confidential because the value of the sales is calculated as the landings are multiplied by the average price per species from the sales notes for the whole fleet.

**Problems encountered**

**Problems related to data collection**

The only pending problem during the preparation of the data call was more related to the data processing, than to the data collection. The data for tables of spatial landings and spatial effort are stored in two different databases - the catch/landing/effort data are in one database and the VMS data is in another database. Table H and Table I were prepared manually by combining the information from both databases. Measures have been taken to link the two databases, but the exercise took more time than expected.

**Problems related to data submission**

There were no problems related to data submission, the possibility to use the data validation tool facilitated the reporting process.

**Other comments if relevant**

The provided data for the discards is from the official data sources.

The de-minimis is not applicable for Bulgaria. The only survivability exemption is defined in the Commission Delegated Regulation EU) 2017/87 of 20 October 2016 establishing a discard plan for turbot fisheries in the Black Sea. The regulation was applicable for the period 1 January 2017 to 31 December 2019.


**A1.3 CROATIA**

**Methodology**

**Data collected and derogations (if applicable)**
   (1) No derogations are used for data on fishing activities (catch, landings, discard, effort) and capacity.
   (2) Data collection on biological variables is based on the metier approach as agreed within the RCG Med&BS and specified under the National Data Collection Programme.

**Estimation procedures**

No estimation procedures are being used for reporting on landing, discard and effort data. Data on landing, discard and effort data is collected on a census basis from the entire fishing fleet. For vessels below 10m LoA using passive gears a monthly fishing report is applicable in which case fisherman report data for each fishing trip. Data for landing value is estimated using average prices from sales notes. Biological estimates are made on the basis of official landings and discard data and are reported within the Med&BS data call.

For certain species fisherman report landing data on genus level (*Eledone spp* and *Trachurus spp*), therefore landing data in the FDI data call is reported as such since biological data for Med6BS is no longer included. However, biological data on species level for those species is estimated on the basis of commercial sampling data and detailed analysis of landing during monitoring of metiers, including the following species: *Eledone cirrhosa*, *Trachurus trachurus*, *Eledone moschata* and *Trachurus mediterraneus*. Data on species level is reported for the Med&BS data call.

In case no VMS data is available (for vessels <12 m using passive gears), spatial data is estimated on the basis of data reported in logbooks and fishing reports on Croatian fishing zones. For this purpose specific mapping procedures are developed within the database to produce data according to GFCM statistical rectangles.

**Discard calculation**

Official discard data is used. Since Croatia has a census based data collection on catch reporting – there are no exemptions on data reporting, the entire fishing fleet is obligated to report all data. Therefore, discards are provided according to official data reported in logbooks and fishing reports (for vessels <10m using passive gears).

**Calculation of effort (following joint methodology or not).**

All effort calculation procedures are implemented in SQL following the logic agreed within the WS on Transversal variables of Zagreb (2015) and Nicosia (2016) that proposed a harmonized approach to associate days at sea to the gear. Although the same logic is used to calculate effort for all data calls, depending on the data aggregation levels the

results may differ slightly (economic fleet segment, FDI domain, metier level 6; temporal and geographic stratification).

### Specific indicators (e.g. refusal rate)

Currently refusal rate is not recorded.

### Data availability

All the data was finalised and available by the data call deadline.

### Coverage

### General comments

In regards to landing and effort data according to vessel lenth categories, as is described in the Croatian Annual Work Plan for Data Collection sampling and reporting of biological data is done on a métier level in line with LM 2018 Recommendation 9 - Merging of length classes which states the following "The RCMMed&BS-LP group recalled that sampling for the collection of biological data should be statistically planned and designed, so as to avoid problems of under-sampled and non-sampled strata or domains requiring imputation of missing data. Following this issue, the procedures adopted should lead to the optimum stratification of sampling for reducing bias and variance, and should draw on previous experience elsewhere in defining, for example, the métiers. The definition of the metier does not include vessel length classes. EU Decision 1251/2016 under Chapter III (data requirements), paragraph 2(a) requested catch data at the aggregation level 6 (corresponding to mesh size). However, metiers may be linked with fleet segments based on essel length classes, as it is presented in Table 2 of the EU-Decision 1251/2016. In order to optimize the sampling programmes, RCM MED&BS-LP considers the possibility to include length classes (LOA) as defined in Table 2 of the Commission Decision 1251/2016 and to merge different classes of the LOA for sampling purpose.". According to this agreement, data for the FDI and Med&BS data calls was provided on the level of metiers for the legal deadline. According to the agreement during the STECF EWG 20-10, Croatia provided data according to vessel length for the operational deadline, however it needs to be noted that this data cannot eventually be easily linked with biological data, because it does not correspond to sampling units, since biological data was not included in the FDI data call in 2020.

Total Vessels (Comparison of totves from table J and table G)

In table J (Capacity) Croatia provided capacity data according to unclustered fleet segments – this data is in line with the data provided for the Fleet Economic data call. In table G aggregated data was reported according to metiers (biological sampling units). Therefore the provided fishing technique and vessel length is only provided according to mapping procedures, and does not represent fleet segments (as vessel groups identified according to gear dominance criteria).

In other words, the cases reported on the tableau (below) do not represent missing fleet segments in table J (since these vessels are classified according to their dominant gear into the corresponding fleet segment).

Wghtlandg vs Vallandg (Data with Totwghtlandg > 0 and Totvallandg = 0 (in table A))

As in previous years, the cases reported in Tableau regarding BFT are not errors – they reflect the real and very specific situation in the Bluefin tuna fisheries in Croatia. Namely, all PS-BFT catch is transferred to cages for farming purposes, therefore there is no landing value as the total catch is not landed. As this is the "effort" data call, Croatia reported the catch of PS-BFT vessels and the corresponding effort. However, there is no landing value as all income related to PS-BFT catch is realized by the BFT farms (BFT catching vessels are owned by the farms).

**FDI data call 2020: Wghtlandg vs Vallandg**
Data with Totwghtlandg > 0 and Totvallandg = 0 (in table A).

| Country | Year | Quarter | Species | Vessel Length | Fishing Tech | Gear Type | Target Assemblage | Mesh Size Range | Sub Region | EEZ Indicator | Geo Indicator | Deep | Specon Tech | Totwghtlandg | Totvallandg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRV | 2015 | 2 | BFT | VL1824 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 24.931 | 0 |
| | | | | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 412.804 | 0 |
| | 2016 | 2 | BFT | VL1824 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 86.640 | 0 |
| | | | | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 349.428 | 0 |
| | 2017 | 2 | BFT | VL1824 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 92.910 | 0 |
| | | | | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 493.724 | 0 |
| | 2018 | 2 | BFT | VL1824 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 73.292 | 0 |
| | | | | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 605.408 | 0 |
| | 2019 | 2 | BFT | VL1218 | PS | PS | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.080 | 0 |
| | | | | VL1824 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 74.514 | 0 |
| | | | | | | | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.250 | 0 |
| | | | | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 570.891 | 0 |
| | | | | | | | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.285 | 0 |
| | | 3 | BFT | VL2440 | PS | PS | LPF | 40SXX | GSA17 | NA | NGI | NA | NA | 104.595 | 0 |
| | | 4 | BFT | VL1218 | PS | PS | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.035 | 0 |
| | | | | VL1824 | PS | PS | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.262 | 0 |
| | | | | VL2440 | PS | PS | SPF | 14D16 | GSA17 | NA | NGI | NA | NA | 0.130 | 0 |

Landings vs Effort

The minor errors reported in Tableau (null fish days/sea days) are due to the fact that effort data is aggregated to secondary (clustered) fleet segments, while data contained in Table A is aggregated to primary (unculstered) fleet segments. In fact there is no missing data, as the effort is attributed to the relevant main fleet segments. The fleet segmentation procedure is done each year for the previous year to determine dominant fleet segment for each vessels on the basis of its fishing activity reported in the logbooks (fleet segments are calculated on the basis of fishing activity data and capacity data). Data on primary and secondary fleet segments is attributed to each vessel and stored in the national data base. These fleet segments represent sampling and reporting units for the Fleet economic data call. The FDI data-call does not specify if the same units should be used or if a separate aggregation should be done where data is statistically aggregated on the basis of fishing technique and vessel length categories. It should be clearly specified if effort should be assigned to vessels and attributed fleet segments or if a separate statistical aggregation should be made.

Landings vs Discards (table A) (Comparison of Totwghtlandg and Discards in table A: cases where Discards>Totwghtlandg)

Provided data is in accordance with data provided in the logbooks and fishing reports (Croatia applies a census based data collection scheme for catch reporting).

Domains Landings (table A & E; A & F and Domains Discards (table A & C; A & D)

In previous years, when biological data was submitted as well, comparison among domains between table A and tables C, D, E and F showed incompatibilities in codification of domains between tables. The main reason was the format of table A that is disaggregate at quarter level while other tables have annual disaggregation. Some errors on Tableau in previous years regarding reporting the data at genus level for some species as it was already stated in above as biological data was reported on species level.

**Comparison with Eurostat data**

No significant differences.

Number of vessels reported in in the capacity table corresponds to the population of vessels according to the DCF and includes all vessels in the fleet register during the year, while EUROSTAT data refers to the number of vessels on 31st December.

Minor differences in the provided landings weight and value. However, these differences are negligible and refer to species which are not so commercially important.

**Publication of confidential data**

No confidentiality issue.

**Problems encountered**

**Problems related to data collection**

No major issues.

**Problems related to data submission**

No major issues.

Croatia is unable to report landing data for certain gears (HAR, MIS – "other" gears) for which landings and effort are not included in the FDI data call. Namely, MIS and HAR gear codes (OTH - other gears) are not foreseen by Appendix 4 and are not allowed for upload therefore the corresponding landing and effort data is not provided. In addition, it is not possible to include this data under NK gear code ("unknown"), because according to Appendix 6, the NA mesh size code is not valid for NK gear code. Although this part of the catch/effort is negligible, this is also the reason for the small differences between data provided for FDI data call and EUROSTAT data.

Significant numbers of duplicate rows were recognized by the Data Validation tool (DVT) in previous years when biological data was reported, mostly for DRB and FPO gear types. At national level these gears are disaggregated according to mesh size. At the same time, DVT does not allow input of mesh size range for these tools and it should be replaced by "NA" as it is stated in Appendix 7. The results of this procedure is recognition of the rows as duplicates. This false recognition of duplicates could seriously affect further analysis of data. In order to resolve this situation further consultation should be done.

**Other comments if relevant**

The structure of the FDI data call should be adjusted because the information on discard provided in table A should be reported by biological sampling units (metiers) – in this case information provided in the fishing technique and vessel length columns does not correspond to economic fleet segments (determined on the basis of gear use dominance criteria), and cannot be used to link economic data.

**A1.4 CYPRUS**

**Methodology**

**Landings weight data**

Landings weight data are collected from bottom trawlers involved in demersal fishery in GSA25, and for fleet segments that are not required to use logbooks. The aim is to compare data collected with data recorded under Control Regulation for the same trips. Discrepancies are recorded and relevant correction factors are performed (e.g. % of under-reporting, misidentified species). For vessels using polyvalent passive gears only (0-6m, 6-12m), landings data are collected by métier, and estimation is made on the percentage of landings assigned to each métier. The percentage is then raised to the total landings, allowing the estimation of landings by species by métier. Concerning vessels using "Polyvalent 'passive' gears only - category C", landings data are collected by census, with the provision of landing declarations to all licensed vessels.

**Effort data**

The collection of effort data concerns vessels using polyvalent passive gears only (0-6m, 6-12m), for most of which the only information derives from sales notes. Sales notes are used as a proxy for fishing days, which are considered equivalent with days-at-sea, fishing trips and fishing operations. With the collection of effort data by métier, estimation is made on the % of fishing days assigned to each métier. In case during a fishing day more than one métier is exercised, one fishing day is assigned to each of the

métiers exercised by the vessel. The percentage is then raised to the total number of fishing days, allowing the estimation of fishing days by métiers.

Based on data collected on length of nets, number of hooks and number of pots, an average value of these variables is estimated by métier, and it is raised to the total number of fishing days by métier.

**Value of landings**

The value of landings will be estimated by species by fleet segment and by metier. For each fleet segment, the average price of species will be estimated at metier level, by multiplying the average price with the landings assigned to each metier exercised by the fleet segment. In cases of landings at foreign ports, average prices will be estimated separately. The total value of landings will be estimated with aggregating the value of landings of each fleet segment.

**Average price**

For estimating average prices, data on prices will be collected. For species landed in more than one commercial category, average prices correspond to each commercial category, and the estimated average price is their weighted average. It is noted that there are no auction markets in Cyprus, and prices of fish sold to fishmongers are 'fixed' for all vessels.

**Data availability**

Cyprus data were provided on time and in accordance with the required formats.

**Coverage**

The data provided cover all Cyprus commercial fishing fleet, which operates in the Mediterranean Sea. The tables for Cyprus cover all the requested time series and all the métiers. Data were calculated and provided in the same way as for economic data call.

The quality checks provided in the tableau does not highlight any incorrect data and/or inconsistencies among the data provided in the different tables requested by the data call.

The few cases of average length of vessels not compatible with the vessel length code (table J) are not to be considered as an issue because they are due to clustering of some vessels for confidentiality and statistical reasons.

**Comparison with Eurostat data**

There is no difference between Eurostat data and FDI data call data.

**Problems encountered**

No problems encountered in the preparation of the files.

**Other comments if relevant**

No other comments.


**A1.5 DENMARK**

**Methodology**

Denmark has a database for transversal data, where logbook data and sales notes data are merged by trip, and information from the fleet register is added. Landings and value of landings are based on sales notes, while information on gear and ICES rectangle are from the logbooks. For industrial fisheries targeting sprat, sandeel and norway pout, the main species are reported in the logbooks but there might also be a small amount of other species in the landings. Samples are taken to find the species composition of the

landing by area, ICES rectangle, month and target species. This is done by the Danish Fisheries Agency, and the species composition is applied to official landings, and also to the FDI data call.

Information on fishing technique (FISHING_TECH) allocated for each vessel is provided by Statistics Denmark that has defined it for the STECF fleet economic data call.

Vessels less than 10 m oal (8 m oal in the Baltic) are not required to report logbooks. For these vessels, sales notes are reported for each landing. Using the species composition for these trips and the gear reported in the fleet register, a procedure has been developed to estimate métiers, gear and mesh size range.

If there are less than three vessels in the aggregation level in tables A, G, H and I, they are marked as confidential with A, otherwise the confidential field is marked with N.

The SPECON codes "GRID35" and "SELTRA" are based on logbook registrations on selection panels in areas 27.3.a.20 and 27.3.a.21. In the Baltic, BACOMA and T90 are not registered in logbooks and therefore these codes are not reported in the FDI data call.

The biological data on unwanted catches, length and age distributions have been processed to output to both ICES data calls and the FDI data call and is based on sampling data from two sampling programs: the at-sea observer programme and the at-market sampling programme conducted under the DCF. Domains have been defined, corresponding to the sampling programmes and are inserted in Table A. Discards are estimated based on the at-sea sampling data, except for the métiers with CCTV (_FDF), where the logbooks are used. For species that have corresponding landings within the same quarter, vessel length group, métier, discards domain and subregion, the discards are distributed to the aggregation of table A based on landings. If the species doesn't have corresponding landings, the discards are distributed to the aggregation of table A based on effort. This means that there can be lines with discards but no landings. In some cases there are length measurements for species (table D and F), where there is no age reading (table C and E).

Landings below minimum conservation reference size (BMS landings) are found from sales notes and landing declarations and added to the total landings. There can be BMS landings with landings value =0 if they are not sold.

In table A, the unwanted catches are partitioned by landings within the same *year, quarter, vessel length group, métier, discards domain, sub region and species*. If there is no samples of unwanted catches within that aggregation, the code "NK" is inserted.

Effort calculations are based on the principles agreed at the 2nd workshop on transversal variables in Nicosia 2016, but implemented in SAS. For vessels without logbooks, the effort calculation is based on sales notes where a trip (vessel-id + landing date) is assigned one day at sea and one fishing day.

**Table B**

In Denmark, the sampling design of the commercial sampling has since 2011 had a gradual change from an ad-hoc sampling programme to a statistically sound sampling (4S) in the observer programme where trips/vessel are the primary sampling unit within some pre-defined fleet lists. The vessel list has been selected according to the home harbour and the main gear type (fleet group) and each list accounts of unique vessels based on the fishery from the previous year, meaning that the same vessel cannot be present in more than one list. If a vessel is selected from one list and is conducting another fishery that is still part of the observer program, the trip is still conducted. If the vessel is conducting a fishery presently not included in the observer program the trip is not selected. Presently Denmark has applied six fleet lists (sampling frames) for the at sea observer programme with a similar selection design however, with different target species. The vessel list is presently covering:

- Lyngby, Trawler/Seiner (OTB-SDN: SD 25-32)
- Lyngby, trawler/Seiner (OTB-SDN: SD 21-24)
- Hirtshals, Trawler/Seiner Skagerrak/ Kattegat (OTB-SDN: SD 20-21)
- Hirtshals, Trawler/Seiner North Sea (OTB-SDN: SD IV)
- Hirtshals, Skagerrak and North Sea – shrimp fishery (OTB_CRU: SD 20- IV)
- Lyngby , Beam trawler, North Sea brown shrimp (TBB: IV)

Effort allocation (observer trips) between the vessel lists are based on the total effort available allocated according to the numbers of trips in each vessel list group. A minimum number of 2 trips have been incorporated by each stratum. Each vessel list is stratified by quarter. Each vessel on a given list has equal change of being selected.

As the vessels are randomly selected in a database based on last year's fishery, large changes in fishing pattern between years can affect the sampling in a given year. When a vessel is selected for an observer trip the vessel has to be contacted by the observer and asked for participation on the next conducted fishing trip. The fishermen answers are recorded according to recommendations in the ICES SGPIDS3 report and refusal rates calculated for each vessel list. The result for 2015-2019 can be seen in the table below.

| country code | year | sample frame | refusal rate | coverage rate | non-response rate | vessels fleet | trips fleet | trips sampled onboard | unique vessels sampled | unique vessels contacted | not available | no contact details | no answer | observer declined | industry declined | success rate | tot selections |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNK | 2019 | Bornholm, trawler / seiner | 0.11 | 0.98 | 0.62 | 19 | 2033 | 20 | 8 | 20 | 23 | 0 | 3 | 1 | 6 | 0.89 | 53 |
| DNK | 2015 | Bornholm, Trawler/Seiner | 0.10 | 0.71 | 0.79 | 33 | 3676 | 26 | 11 | 32 | 24 | NK | 6 | 44 | 13 | 0.90 | 127 |
| DNK | 2016 | Bornholm, Trawler/Seiner | 0.22 | 0.67 | 0.74 | 26 | 2843 | 19 | 9 | 26 | 17 | NK | 9 | 11 | 17 | 0.78 | 77 |
| DNK | 2017 | Bornholm, Trawler/Seiner | 0.19 | 1.20 | 0.57 | 22 | 2338 | 28 | 12 | 26 | 12 | 0 | 3 | 4 | 13 | 0.81 | 67 |
| DNK | 2018 | Bornholm, Trawler/Seiner | 0.09 | 0.83 | 0.54 | 22 | 2542 | 21 | 8 | 19 | 7 | 0 | 3 | 3 | 4 | 0.91 | 46 |
| DNK | 2015 | Charlottenlund, Trawler/Seiner | 0.21 | 0.67 | 0.64 | 73 | 7486 | 50 | 18 | 55 | 30 | NK | 19 | 11 | 29 | 0.79 | 140 |
| DNK | 2016 | Charlottenlund, Trawler/Seiner | 0.26 | 0.91 | 0.83 | 74 | 7713 | 70 | 24 | 83 | 81 | NK | 75 | 69 | 111 | 0.74 | 424 |
| DNK | 2017 | Charlottenlund, Trawler/Seiner | 0.28 | 0.84 | 0.83 | 77 | 7488 | 63 | 19 | 78 | 57 | 4 | 49 | 45 | 99 | 0.72 | 360 |
| DNK | 2018 | Charlottenlund, Trawler/Seiner | 0.20 | 1.02 | 0.78 | 69 | 7363 | 75 | 23 | 81 | 52 | 5 | 55 | 82 | 77 | 0.80 | 390 |
| DNK | 2019 | Lyngby, trawler / seiner | 0.23 | 0.98 | 0.73 | 66 | 7639 | 75 | 22 | 77 | 43 | 1 | 23 | 72 | 63 | 0.77 | 277 |
| DNK | 2015 | Hirtshals, CCTV | 0.04 | 1.07 | 0.78 | 15 | 749 | 8 | 4 | 13 | 9 | NK | 1 | 6 | 1 | 0.96 | 23 |
| DNK | 2016 | Hirtshals, CCTV | 0.06 | 1.76 | 0.79 | 13 | 681 | 12 | 7 | 14 | 18 | NK | 6 | 28 | 4 | 0.94 | 74 |
| DNK | 2015 | Hirtshals, OTB_CRU_32-69_0_0 | 0.25 | 0.52 | 0.25 | 8 | 763 | 4 | 3 | 6 | 0 | NK | 0 | 0 | 1 | 0.75 | 4 |
| DNK | 2016 | Hirtshals, OTB_CRU_32-69_0_0 | 0.44 | 0.98 | 0.56 | 6 | 715 | 7 | 2 | 6 | 5 | NK | 0 | 0 | 4 | 0.56 | 18 |
| DNK | 2017 | Hirtshals, OTB_CRU_32-69_0_0 | 0.55 | 0.94 | 0.68 | 7 | 748 | 7 | 3 | 7 | 2 | 0 | 1 | 0 | 12 | 0.45 | 22 |
| DNK | 2018 | Hirtshals, OTB_CRU_32-69_0_0 | 0.00 | 0.91 | 0.42 | 7 | 770 | 7 | 4 | 6 | 2 | 0 | 0 | 1 | 0 | 1.00 | 12 |
| DNK | 2019 | Hirtshals, OTB_CRU_32-69_0_0 | 0.25 | 1.04 | NK | 8 | 866 | 9 | 6 | 8 | 0 | 0 | 1 | 0 | 1 | 0.75 | NK |
| DNK | 2015 | Hirtshals, Trawler/Seiner, North Sea | 0.14 | 1.01 | 0.91 | 33 | 2268 | 23 | 8 | 36 | 81 | NK | 26 | 36 | 29 | 0.86 | 208 |
| DNK | 2016 | Hirtshals, Trawler/Seiner, North Sea | 0.16 | 0.62 | 0.93 | 48 | 3542 | 22 | 11 | 58 | 122 | NK | 52 | 67 | 61 | 0.84 | 374 |
| DNK | 2017 | Hirtshals, Trawler/Seiner, North Sea | 0.08 | 0.92 | 0.76 | 47 | 2714 | 25 | 15 | 50 | 21 | 0 | 26 | 12 | 16 | 0.92 | 122 |
| DNK | 2018 | Hirtshals, Trawler/Seiner, North Sea | 0.10 | 1.42 | 0.80 | 42 | 2390 | 34 | 17 | 39 | 45 | 0 | 24 | 7 | 18 | 0.90 | 173 |
| DNK | 2019 | Hirtshals, Trawler/Seiner, North Sea | 0.12 | 1.35 | 0.72 | 40 | 2217 | 30 | 15 | 38 | 28 | 0 | 17 | 19 | 13 | 0.88 | 107 |
| DNK | 2015 | Hirtshals, Trawler/Seiner, Skagerrak | 0.29 | 0.57 | 0.83 | 94 | 9576 | 55 | 23 | 95 | 101 | NK | 26 | 36 | 99 | 0.71 | 338 |
| DNK | 2016 | Hirtshals, Trawler/Seiner, Skagerrak | 0.13 | 0.53 | 0.84 | 91 | 10070 | 53 | 19 | 101 | 70 | NK | 40 | 64 | 46 | 0.87 | 342 |
| DNK | 2017 | Hirtshals, Trawler/Seiner, Skagerrak | 0.14 | 0.73 | 0.75 | 100 | 10248 | 75 | 21 | 93 | 56 | 2 | 38 | 21 | 40 | 0.86 | 285 |
| DNK | 2018 | Hirtshals, Trawler/Seiner, Skagerrak | 0.15 | 0.75 | 0.75 | 95 | 10655 | 80 | 34 | 90 | 55 | 1 | 38 | 16 | 43 | 0.85 | 295 |
| DNK | 2019 | Hirtshals, Trawler/Seiner, Skagerrak | 0.17 | 0.56 | 0.67 | 119 | 13129 | 74 | 27 | 79 | 45 | 0 | 23 | 42 | 37 | 0.83 | 221 |
| DNK | 2015 | TBB | 0.13 | 0.86 | 0.58 | 29 | 1855 | 16 | 7 | 19 | 6 | NK | 6 | 5 | 5 | 0.87 | 40 |
| DNK | 2016 | TBB | 0.13 | 0.71 | 0.77 | 21 | 1978 | 14 | 7 | 21 | 13 | NK | 14 | 17 | 9 | 0.87 | 71 |
| DNK | 2017 | TBB | 0.03 | 0.74 | 0.58 | 25 | 2426 | 18 | 10 | 15 | 5 | 0 | 7 | 0 | 1 | 0.97 | 31 |
| DNK | 2018 | TBB | 0.00 | 0.49 | 0.48 | 25 | 2455 | 12 | 7 | 14 | 3 | 1 | 3 | 0 | 0 | 1.00 | 27 |
| DNK | 2019 | TBB | 0.00 | 0.37 | 0.55 | 18 | 1084 | 5 | 4 | 8 | 2 | 0 | 1 | 3 | 0 | 1.00 | 11 |

**Data availability**

Transversal data (logbooks, sales notes, fleet register) are transferred from the Danish Fisheries Agency to DTU Aqua every night. Some errors may be corrected in the data from a previous year, but that is mainly done during the first quarter, so the data were available by the data call deadline. The processing of the biological data need to be finalized before the ICES data call and stock assessments, during the spring.

**Coverage**

**Data checks**

The effective effort (table I) is often smaller than the total fish days (table G). This is because in table I only effort by ICES rectangle from vessels with logbooks is known. In table G the total fishing days is calculated based on fishing days reported in logbooks. For vessels without logbooks, sales notes are available, and for each trip (vessel id + landing date) one fishing day is assumed.

Some species have a length measurement, but no age reading. This means that there can be domains in table F (length measurements) that does not exist in table E (age readings).

The total landings were lower in 2016 compared to 2015 and 2017 because of a very low sandeel quota.

The number of vessels reported in Eurostat are larger than what is reported in the FDI data call. This is because only active vessels are included in the FDI data call. In the Eurostat figures, inactive vessels are included.

In some cases, there are weight of landings > 0, but with value of landings = 0. 0-values are often connected to bycatches, and often in fishery for industrial use. Here it cannot be used in the main fishmeal production (maybe, because the size does not fit into the production), and the storage results in a very poor quality making it unfit for most other uses. Actually, it can lower the price if the entire landing if the bycatch rate it too high. Therefore, the 'buyer' does the vessel a kind of favour by taking the by-catch at a price=0.

0-values also occur in connection to foreign buyers (especially Belgian) where the sales-note lack a price. The Danish authorities try to obtain it from the buyer, but the rate of success is fluctuating.

**Confidentiality**

If there are less than three vessels in the aggregation level in tables A, G, H and I, they are marked as confidential.

**Problems encountered**

No problems encountered.

**Other comments if relevant**

No other comments.


**A1.6 ESTONIA**

**Methodology**

Estimation procedures (in case something been used, e.g. estimation of landings and effort for the small scale fleet) – short summary on the estimations procedures for discards and biological data for landings and discards.

Describe methodology for partition of discards from tables C-D to table A.

Describe if you applied thresholds for submitting biological data (e.g. >50 fish measured and 2 trips within stratum are submitted).

Calculation of effort (following joint methodology or not). Tell us if R script have been used or its logics been implemented in SQL or other software.

**Data collected and derogations**

Official Information on landings/catches and effort by species, areas, gear types and mesh size was obtained from the Estonian Fisheries Information System (EFIS). EFIS compiles all logbook information as well as information on prices, sales etc. Fisheries data collection takes place according to DCF methodology and no derogations have been applied. Estonian fishing fleet is operating mainly in the Baltic Sea and to a limited extent also in the Northern Atlantic.

Estonian fishing fleet in the Baltic Sea consists of pelagic trawlers targeting sprat and herring, and of small boats operating in coastal fishery of herring (with fixed pound and trap nets) and of other species, incl. freshwater fish taken with trapnets and gillnets. The discarding is prohibited in Estonia by law and may only occur in very limited scale (if any) e.g. in case of catches of below MCRS fish in coastal fishery (salmon and perch). No discarding takes place in trawl fishery. The official discard information from logbooks are provided in the dataset.

In case of collection of biological data the minimum threshold of 100 fish for length measurements and 50 specimens for age measurements are applied in sampling of pelagic fleets and in sampling of herring in coastal fishery. No threshold is applied in sampling of coastal small scale fishery.

All effort calculations are performed using the logbook information and landing declarations. No R script has been used in effort calculations.

For fleet segments landing values were estimated based on prices derived from sales slips multiplying by weight from landing declarations.

*Table B*

No refusals in obtaining biological samples and other relevant information from the selected fishing vessels were reported in 2015-2019.

**Data availability**

All requested information was provided by the FDI data call deadline.

**Coverage**

Provided data covers all Estonian commercial fishing fleet, which operates in Baltic Sea and in the Northern Atlantic. Information about recreational fishery in Baltic Sea were not provided.

**General comments**

Discrepancies described in the table "Wghtlandg vs. Vallandg" of JRC Data checking facility, were mostly caused by the lack of information on first sale prices of some fresh water species in the coastal small-scale fishery ( using small boats under 10 m) .

Discrepancies found between "Totwghtlandg" and SOP (numbers * mean weights at age) in Table E, occurred due to typing errors. The issue was solved during the EWG 20 10 meeting and the MS re-uploaded Table E.

On overall, most of the requested by FDI Data Call information was available and presented except the effort information for the small (under 10m) boats in coastal fisheries.

**Comparison with Eurostat data**

Landings and capacity data provided was very close to the information reported to Eurostat. The observed minor differences in vessel numbers may be explained with the counting of inactive vessels in Eurostat dataset.

All information provided by the Member State during the FDI data call is regarded as **not confidential.**

**Problems encountered**

Member state encounters persistent problems in obtaining effort information from the small, under 10 m boats operating with passive gears (coastal fisheries). In case of the small boats only information of Sub-region level is available. The scarcity of respective information prevents presenting the effort estimates by the statistical rectangles.

Additionally, obtaining of the value estimates for the long distant fleet, what lands outside of Estonia is complicated.

No refusals in getting biological samples and other relevant information were reported in 2015-2019.

**Other comments if relevant**

No other comments.

**A1.7 FINLAND**

**Methodology**

Commercial marine fishery statistics comprise information on the number of commercial marine fishermen, the volume and value of the catch and the spatial distribution of the catch and fishing effort. The data are based on periodic catch declarations by commercial fishermen. Everyone engaged in commercial marine fishery in Finland is obliged to provide catch declaration. Captains of vessels that are at least 10 meter in length are using the EU log-book to submit catch data for the monitoring authority. Fishers using a vessel less than 10 meter in length submit the data by a coastal fishing journal that is aggregated by a month. However, he is applying a landing declaration if he is catching salmon, sprat, cod or herring (more than 50 kg of herring per day).

Estimation procedures (in case something been used, e.g. estimation of landings and effort for the small scale fleet)

Estimation procedures haven't been used. The statistics are compiled based on the assumption that everyone engaged in commercial fishing in the sea areas has complied with the statutory obligations and submitted catch reports.

**Unwanted catch calculation**

Nominal catch refers to the catch landed by fishermen or transshipped at sea. For statistical purposes, this is reported in kilograms live weight, i.e. the weight of ungutted fish. Discards, for example fish damaged by seals, are not included in the nominal catch. The major cause for discarding in the Finnish commercial marine fishery is damage caused by seals, cormorants and other predatory species on the fish trapped or entangled in the fishing gear. Discards are not included in the landings data.

In the revision process at the STECF it has been highlighted that in the Landings vs Discards (table A), Comparison of Totwghtlandg and Discards, there are cases where Discards>Totwghtlandg. We confirm that these data are correct.

Calculation of effort (following joint methodology or not). Tell us if R script have been used or its logics been implemented in SQL or other software.

The number of units of fishing gear in any spatial statistical unit is calculated as the sum of fisherman-specific highest number of units of gear simultaneously deployed in the area. The number of fishing days is the total number of fishing days of all fishermen for the corresponding gear, regardless of there was any catch being reported. Fishing gear is deployed for a variety of duration and also the number of gears varies. This variation is taken into account in fishing gear days (trap net, gillnet and trawl days), for example five days of fishing with ten nets totals fifty net days.

**Specific indicators (e.g. refusal rate)**

Information of refusal rates was not collected in Finland between 2016-2018.

**Data availability**

All the data was finalised and available by the data call deadline. Corrections asked by the Commission have been completed and table G re-uploaded to the database on 15th September 2020.

**Coverage**

**General comments**

Biological data was not raised to total landings weights.

Provide general comments related to data coverage, explain why data is missing (in case something is missing).

Nothing is missing.

Comments in case there is any difference with other STECF data calls, e.g. effort calculation for economic data call, or something missing/more data provided compared to economic or meds data calls).

In vessels segment TM VL1218 there are some vessels, which are less than 12 meters. Additionally, there are vessels in segment TM VL1824 which are over 24 meters. Consequently, in some ICES subdivisions, the mean vessel length is shorter or longer than what the segment name indicates.

**Comparison with Eurostat data**

Provide any relevant comments regarding comparability of the data set provided (landings and capacity) with Eurostat data. Explain reasons for difference in case there is any difference.

FDI data call data is the data concerning Finnish marine commercial fishery. Eurostat catch data includes both commercial and recreational catch by species and subdivisions.

**Publication of confidential data**

Data call material includes confidential information, which is marked by 'Y' in confidential-column. It is therefore forbidden to reveal or publish these data outside the original purpose, i.e. the FDI data call.

**Problems encountered**

**Problems related to data collection**

None.

**Problems related to data submission**

In future years, the data call should be launched during June in order to have enough staff available for compiling the data.

**Other comments if relevant**

No other comments.

## A1.8 FRANCE

**Methodology**

In accordance with the French DCMAP working plan 2020-2021, the French data submission for this data call is based on the following sources of information:

1. **French fleet register** (vessel characteristic (length overall, kilowatt, gross tonnage, age of the vessel), geographical indicator, total number of vessels)
2. **Annual fishing activity calendars survey[5]** (active/inactive vessels, typological classification of vessels by fleet/fishing technique, fishing area, métier, supra-region)
3. **Logbooks** *(over 10m'vessels)* and **monthly declarative forms** *(less 10m' vessels, declarative forms adapted to the special features of the small-scale coastal fisheries)* (total weight of landings by species, fishing effort (number of trips, days at sea, fishing days and hours at sea), fishing area, gear and mesh size)
4. **Sales note data** (total weight and value of landings by species)
5. **Geolocalisation data** *(inc. VMS data)* (fishing effort (number of trips, days at sea, fishing days and hours at sea), fishing area)
6. **Complementary on-site sampling of trips[6]** *(catch assessment survey)* (total estimates of weight and value of landings by species, fishing effort estimates (number of trips, days at sea and fishing days), fishing area, métier)
7. **At-sea and on-shore** *(port-sampling)* **scientific observer sampling data** (discards estimates, length and age distributions)

Some specificities exist for the "French tropical purse seine fishery" and the "Mediterranean bluefin tuna fishery" but source of information are very similar, differences being related to the database holding the information and the way to process the data.

The definition of the reference fleet population follow the definition of Commission decision 2016/1251 *(any vessel registered on 31 december or which has fished at least one day in the year up to 31 december)* in order to have a comprehensive view of the fishing activity applied during the year.

The definition of all the fishing trips of the French fleet with their associated features *(dates, fishing area, métier, gear and mesh size, total weight and value of landings by*

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[5] **Annual fishing activity survey** is conducted by fishing observers yearly in France on the basis of preliminary documentation provided by available data *(fleet register, logbooks, monthly declarative forms, sales note data, geolocalisation data, on-site samplings data)*. It **covers the whole of the reference population** *(also vessels not cover by available data)*, take place every year in the first month of the year on the previous year and aim at characterizing each year the inactivity or activity of all the vessels each month of the year and, in the latter case, the métiers practiced and the main fishing areas *(Berthou et al., 2008)*. These data provide information on the part of fishing activity not included in available declarative data *(completeness check of the available declarative data)* and also the basis, if necessary, to re-evaluate available fishing activity data estimates *(in case of incomplete data for example)*.

[6] **Complementary on-site sampling of trips** (catch assessment survey) is used to estimate fishing activity variables estimates (except hours at sea) of vessels for which the coverage and precision of their available declarative data are insufficient to meet the end-users needs. The sampling scheme is based on the frame survey (Activity survey) useful to optimise the strategy of the spatio-temporal on-site sampling plan. Fishing trips features, effort and catches and weekly activity calendar (effort) are sampled directly on-site, when the fishers come back to the harbour. The raising method is based on a post-stratification of the fishing trips and weekly calendar sampled and the use of the percentile bootstrap to estimate the precision. In 2015, 2016, 2017, 2018 and 2019, this applies for vessels under 12m in the Mediterranean continental area (GSA 07, except in 2019), Réunion (geographical indicator: RE), Mayotte (YT), French Antilles (Martinique – MQ and Guadeloupe - GP) and French Guiana (GF).

*species)* is based on a cross-validation tool: SACROIS[7] of the different available data *(fleet register, annual fishing activity calendars, logbooks, monthly declarative forms, sales note data, geolocalisation data)* aiming to provide the best possible fishing statistics data.

A specific algorithm is included into SACROIS to estimate the value of landings based on sales note data available *(sometimes directly deducted from them)* or estimation of an average price. For some fleet segment, estimated price based on expert knowledges or on-site sampling data is also used. **This algorithm allow to estimate value of almost every landings, only few species/fleets do not have value assigned. The two principal fleets without value assigned are the French tropical purse seine fishery and the Guiana shrimp trawlers.**

SACROIS include also the allocation of a single metier to a fishing trip, based on the dominant landed specie *(or group of species)* in value (by a raw ordination), the vessel' activity calendar survey and eventually the declared gear *(see detailed methodology explained in 'Anonymous, metier workshop report, 2018')*.

For French fleets for which the coverage and precision of their available declarative data *(basically SACROIS data)* is insufficient to meet the end-users data needs *(e.g. DCF requirements)*: 1/ complementary on-site sampling data could be collected *(catch assessment survey)* and-or 2/re-evaluation methodology *(on the basis on the annual fishing activity calendars survey)* could be applied *(detailed methodology applied could be found in IFOMConference proceedings8)*, in order to calculate the reference fishing activity' estimates. The choice between one of these two methodologies is also based on the coverage and precision of the available declarative data.

Based on that, fishing capacity and activity' estimates could be calculated for the whole of the reference population *(French fleet register including overseas fisheries, long distance fisheries and small-scale fleets)*. They are conform to the requested aggregation *(by year, quarter, vessel length classes, fishing technique, supra-region, gear and mesh size, métier, fishing area)* and cover all the areas where French vessels are operated.

Fishing effort estimates *(number of trips, days at sea, fishing days and hours at sea)* have not been calculated by using the generic R script provided for this data call as is not suitable for vessels without logbooks and for vessels outside FAO area 27 *(need to have ICES rectangle)*. Nevertheless, the common joint methodology developed during the 2nd transversal variables workshop was implemented on our data *(development of an adapted R script)* in order to calculate the estimates and answer the data call.

Discards and length/age distributions estimates have been calculated based on the scientific observer sampling data *(at sea and port-sampling program)*. The unwanted catch data from logbooks were not used.

**Spatial distribution** asked in the tables H (landings by rectangle) & I (effort by rectangle) are derived from the SACROIS data which are spatialized at the most disaggregated spatial level available in the declarative data *(logbooks, monthly*

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[7] **SACROIS** *(http://sih.ifremer.fr/Description-des-donnees/Les-donnees-estimees/SACROIS)* is a cross-validation tool for the fisheries statistics, aiming at cross-checking data from different declarative sources, as demanded in article 145 of the EU control Regulation (EC Reg. 404/2011). The application is crossing information, at the most disaggregated level, from the fishing fleet register, logbooks, monthly declarative forms, sales notes data, geolocalisation data and the scientific census of annual fishing activity calendars, in order to build a dataset compiling the most accurate and complete information for each individual fishing trip. The application verifies and controls the different sources of data, with the aim of displaying validated and qualified landings per species and effort data series. The application provides also several quality indicators and evaluates the completeness of the data flows.

[8] A new approach to estimate landings and fishing effort of small-scale fisheries by re-evaluating declarative data from the IFREMER exhaustive activity calendar survey. Application to the French Mediterranean vessels. Jerôme Weiss, Séverine Boucheron, Sébastien Demanèche, Patrick Berthou, IFREMER. France

*declarative forms)* and the vessel' activity calendar survey. They have been completed for geolocalised vessels *(inc. VMS' vessels)* to provide spatial information at C-square level at 0.5*0.5 degree resolution. Spatial information is completed by the on-site sampling data for fishing fleets not covered by the SACROIS data.

Unlike fishing capacity and activity' estimates *(see above)*, biological data estimates are not available at the level of disaggregation requested *(notably for discards estimates asked in table A)*. Indeed, discards and length/age distribution estimates are calculated following specific strata definition in space, time and metier in respect with the sampling design. They are estimated after a post-stratification process where metier, fishing area and quarter could be aggregated in order to maximize the number of samples per stratum and provide the most complete information possible for a given stock *(i.e. level of disaggregation available is determined by the number of samples)*. Additionally, strata definition are annually specific for each stock assessed following WG practice in term of labelling. As an example, for the sole stock in 27.7.d and for the ICES data call in 2018, the OTB_DEF_70-99_0_0 metier submitted in Intercatch encompass the following declared metier: OTB_CEP_70-99_0_0, OTB_DEF_70-99_0_0, OTB_MOL_70-99_0_0, OTB_SPF_70-99_0_0, OTT_CEP_70-99_0_0, OTT_CRU_70-99_0_0 and OTT_DEF_70-99_0_0.

This complex process applied annually specifically by stock *(based on expert' analysis)* do not allow to provide biological data estimates strictly following the domain definition requested in the FDI data call also they exist some issues of *"n-n"* link between table A and tables CDEF *(e.g. for mesh size range one metier should be recorded with the mesh size ranges <60 and 60-79 in the ICES data call when in Table A same metier is recorded with the mesh size ranges 70-89 and 55-69)*. Nevertheless, a domain *(following as far as possible the domain definition detailed in the Appendix 8)* has been associated to each of the validated biological estimates calculated by expert (*e.g. by ICES stock assessor)* and submitted in the tables C-D-E-F following the strata they retained to extrapolate the sample *(e.g. submitted ICES strata)*. **This has the benefit to provide only approved biological data estimates.**

Strata have been re-coded in order to follow as far as possible the domain definition requested but, in most cases, do not reflect all the métiers/fishing area aggregated in order to build the strata *(see example above)*. **Consequently, it is not possible to use straight the domain definition available in tables C-D-E-F to link biological data estimates provided in these tables with information available in table A** and "domain_discards" and "domain_landings" information were therefore not submitted in table A *(regarding also the "n-n" issue)*. This should be improved for the future data call.

Finally, the partitioning of discards estimates available in tables C-D-E-F *(according to strata used to calculate the estimates)* into detailed categories asked in table A was also requested by the FDI data call following the conclusion of the STECF Expert Working Group 17-12 which nevertheless, and in the same time, emphasizes the limited meaningfulness behind any partitioned estimates (*'estimates will likely not be statistically sound and may be biased because for example of the need to assume equal discard rates among the disaggregated levels contained within the retained strata')*. **Regarding that discards information available in table A are of major importance for the EWG and nevertheless the issues raised above, discards estimates partitioned were provided in table A based on the methodology described below. Nevertheless, it is reemphasized here that approved discards estimates could be only found in tables C-D.**

The methodology followed for partitioning the discards estimates at the level of disaggregation asked in table A is: 1) aggregation of the discards estimates available in table C by year, quarter, sub_region, gear_type and species, 2) sum of landings provided in table A by year, quarter, sub_region, gear_type and species and calculation of the landings percentage for each of the concatenated row and 3) discards estimates

partitioned by row proportionately to the landings using the values calculated in 1 & 2 (total discards * landings percentage).

So far, table B (refusal rate) has not been provided as the data call still need to be clarified and amended accordingly on this specific issue. Also this implies a specific data extraction and processing of the information available in the website dedicated to presenting and monitoring the sampling plans which has to be planned. This should be improved for the future data call taking into account the progress made this year by the expert working group.

So far, only very few data have been highlighted as being confidential because a common approach was missing. However, there are many issues related to these data where certain lines hold information for less than 3 vessels. A further check will be needed for the future data call to identify the lines concerned. In addition, often not all variables are regarded as being problematic. For example, information on the value of landings or discards is much more sensitive than landings.

**Data availability**

Complete French data have been uploaded before the deadline of the data call also taking into account the different checks done during the upload process. Some adjustments of the data have been done before the operational deadline and during the first two days of the EWG taking into account the data checks carried out on the data provided during the FDI call and available online at https://datacollection.jrc.ec.europa.eu/data-analysis/fdi. The current data can be regarded as final given current knowledge. However, data could be improved/completed before next data call *(taking also into account the minor issues highlighted in the data checks carried out)* and in this case they will be re-upload for the next year data call.

**Coverage**

French data available in the FDI database for 2015, 2016, 2017, 2018 and 2019 cover all the French fleets including overseas fisheries, long distance fisheries and small scale fleets.

Up to now, no upload facility is given for data where area information *(at the sub-region level)* is missing. Few French fishing statistics data *(less than 1%)* have area information available only at the FAO area level. These data are therefore missing in the FDInew database.

Considering the spatial distribution tables H&I *(landings and specific effort data by rectangle/c-squares)*, **spatial data have been submitted for all the fleets considering the finest spatial distribution available including C-square level for geolocalized vessels.** Some assumptions have been considered to provide all the data at the level asked in the data call *(e.g. GFCM squares in FAO zone 37)* by proportionally distributing the available spatial data *(especially for non geolocalised vessels for which some of the data could be only available at a more aggregated spatial resolution)* but only as long as it was acceptable. For example, for fleets operating in FAO zone 27, some fishing activity data *(~5% in landings)* have only area information available at the sub-region level *(e.g. ices division, no ices rectangle available)* and could not be derived at the finer spatial resolution asked. As a consequence, spatial distribution tables are not fully consistent with data provided in the tables A and G *(total fishing effort and landings by species figures could differ)*, but it remains negligible.

**Comparison with Eurostat data**

Minor differences occurred between FDI data and Eurostat likely caused by differences in time and completion status of available data when the estimates were provided. Mainly, species and areas reported in Eurostat are available in the FDI database and vice versa.

Nevertheless, some issues could occur on the codification of species used that could differ between the two database *(as an example in 2016, 'ANF- Lophiidae' is used for EUROSTAT when 'MNZ- Lophius spp' was used for FDI)*.

**Problems encountered**

No more problems have been encountered.

**Other comments if relevant**

No other comments.


**A1.9 GERMANY**

**Methodology**

The German data submission for this data call is based on the following sources of information:

1. Logbook and Landings data (landings, value, effort, spatial effort and spatial landings, BMS)

2. German fleet register (Number of vessels, Fleet determination etc.)

3. Scientific observer data (Discards, length and age distributions)

Effort has been estimated by using the generic R script provided for this data call. Germany provides information for all vessels with all necessary information reported in logbooks. Vessels <10m in the North Sea and and vessels < 8m in the Baltic do not have an obligation to fill in logbooks. However, for these vessels so called "Monatsmeldungen" were used to provide information on catch and effort where possible.

Discards were estimated based on observer data and not from logbook information as the compliance to the landing obligation was still very different from fishery to fishery in 2019 (last year of the data call). Based on observer data the unwanted catch (BMS + Discards) was raised to discard domain level. From these values the BMS reported in logbooks (and already accounted for under landings) was substracted. In cases where this resulted in a negative value because of the inherent uncertainties in the raised unwanted catch estimates, a zero discard was assumed. Similarly, because of the often large uncertainties in the unwanted catch estimates, discards >0 must not have happened in reality especially if the values are small. For metiers that were not sampled, a NK for "not known" was provided to allow for JRC raising routines to be used to fill gaps.

Germany has so far not highlighted data as confidential. However, there are issues related to these data where certain lines hold information for less than 3 vessels. Germany will make a final decision depending on the type of data and in which detail (aggregation level) the data will be finally made public.

The discard and biological data sampled in a certain domain are used in Table A in a finer disaggregation level. The distribution of total discards at the domain level to the more detailed disaggregation level in table A is done by using the landings information in Table A. Because of this, it needs to be born in mind that discards rates, age and length distributions are assumed to be the same inside a sampling domain although differences may occur in reality.

The length frequency data have been used to calculate the percentage of undersized fish in the landings and discards. Similar to the overall discard rates it needs to be highlighted that this is based on observer data and a limited number of sampled trips. The length frequencies may have been used as being representative in a much wider context. E.g., when a sampled length frequency was only available for quarter 3, maybe it needs to be assumed that it is representative for the whole year. This can introduce a serious bias as fish grow over the year and recruits are often entering the fishery in the third quarter. Therefore, the results have to be interpreted carefully and always in conjunction with information on the sampling coverage.

Currently it is not mandatory to include information on selectivity devices in logbooks. Therefore, it cannot be concluded from the data whether certain fleets and metiers use a certain selectivity device or not.

**Table B**

In Germany the sampling program is in between an adhoc and a statistically sound sampling program. Vessels or in many cases POs are contacted randomly within a given sampling frame (see table). Vessels are then selected based on who leaves the port next and is available to take observers onboard. Within a sampling frame, the observer program focuses on fisheries that are most important in terms of catches.

For table B the refusal rate was calculated as: Industry declined/(Industry declined + Trips sampled onboard). Similar to the refusal rate, the non-response rate was calculated as: (no contact details + no answers + observer declined + industry declined)/ (no contact details + no answers + observer declined + industry declined + trips sampled onboard).

| country | year | sample_frame | refusal_rate | coverage_rate | nonresponse_rate | vessels_fleet | trips_fleet | trips_sampled_onboard | unique_vessel_sampled | unique_vessels_contacted | not_available | no_contact_details | no_answers | observer_declined | industry_declined | succes_rate | tot_selections |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DEU | 2015 | OTB_DEF (27.1, 27.2) | 0.50 | 0.13 | 0.89 | 4 | 8 | 1 | 1 | 3 | NK | 0 | 7 | 0 | 1 | 0.50 | NK |
| DEU | 2015 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) | 0.11 | 0.02 | 0.88 | 27 | 376 | 8 | 7 | 7 | NK | 10 | 46 | 2 | 1 | 0.89 | NK |
| DEU | 2015 | OTB_DEF (27.14.b, 21.1.c) | 0.00 | 0.10 | 0.82 | 4 | 21 | 2 | 2 | 4 | NK | 0 | 8 | 1 | 0 | 1 | NK |
| DEU | 2015 | TBB_DEF (27.4.b, 27.4.c) | 0.20 | 0.01 | 0.88 | 9 | 366 | 4 | 3 | 3 | NK | 3 | 23 | 2 | 1 | 0.8 | NK |
| DEU | 2015 | TBB_CRU (27.4.b) | 0.36 | 0.00 | NK | 171 | 13154 | 7 | 4 | 7 | NK | NK | 28 | 0 | 4 | 0.64 | NK |
| DEU | 2015 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) | 0.00 | 0.15 | 0.59 | 6 | 72 | 11 | 3 | 4 | NK | 0 | 16 | 0 | 0 | 1 | NK |
| DEU | 2016 | OTB_DEF (27.1, 27.2) | 0.00 | 0.33 | 0.67 | 4 | 3 | 1 | 1 | 2 | NK | 0 | 2 | 0 | 0 | 1 | NK |
| DEU | 2016 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) | 0.45 | 0.02 | 0.91 | 20 | 281 | 6 | 4 | 7 | NK | 8 | 47 | 0 | 5 | 0.55 | NK |
| DEU | 2016 | OTB_DEF (27.14.b, 21.1.c) | 0.00 | 0.10 | 0.67 | 4 | 20 | 2 | 2 | 4 | NK | 0 | 4 | 0 | 0 | 1 | NK |
| DEU | 2016 | TBB_DEF (27.4.b, 27.4.c) | 0.00 | 0.01 | 0.71 | 12 | 386 | 4 | 3 | 2 | NK | 3 | 7 | 0 | 0 | 1 | NK |
| DEU | 2016 | TBB_CRU (27.4.b) | 0.50 | 0.00 | NK | 170 | 12631 | 7 | 5 | 12 | NK | NK | 35 | 0 | 7 | 0.5 | NK |
| DEU | 2016 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) | 0.00 | 0.15 | 0.38 | 6 | 68 | 10 | 2 | 4 | NK | 0 | 6 | 0 | 0 | 1 | NK |
| DEU | 2017 | OTB_DEF (27.1, 27.2) | 0.00 | 0.29 | 0.60 | 5 | 7 | 2 | 1 | 2 | NK | 0 | 3 | 0 | 0 | 1 | NK |
| DEU | 2017 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) | 0.14 | 0.02 | 0.87 | 22 | 282 | 6 | 4 | 7 | NK | 8 | 30 | 1 | 1 | 0.86 | NK |
| DEU | 2017 | OTB_DEF (27.14.b, 21.1.c) | 0.00 | 0.06 | 0.88 | 5 | 16 | 1 | 2 | 4 | NK | 0 | 7 | 0 | 0 | 1 | NK |
| DEU | 2017 | TBB_DEF (27.4.b, 27.4.c) | 0.00 | 0.01 | 0.60 | 8 | 357 | 4 | 3 | 3 | NK | 2 | 4 | 0 | 0 | 1 | NK |
| DEU | 2017 | TBB_CRU (27.4.b) | 0.44 | 0.00 | NK | 169 | 12285 | 5 | 4 | 8 | NK | NK | 41 | 0 | 4 | 0.56 | NK |
| DEU | 2017 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) | 0.17 | 0.10 | 0.55 | 6 | 52 | 5 | 4 | 4 | NK | 0 | 5 | 0 | 1 | 0.83 | NK |
| DEU | 2018 | OTB_DEF (27.1, 27.2) | 0.00 | 0.22 | 0.50 | 4 | 9 | 2 | 2 | 2 | NK | 0 | 2 | 0 | 0 | 1 | NK |
| DEU | 2018 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) | 0.17 | 0.02 | 0.84 | 20 | 232 | 5 | 5 | 6 | NK | 7 | 18 | 1 | 1 | 0.83 | NK |
| DEU | 2018 | OTB_DEF (27.14.b, 21.1.c) | 0.00 | 0.14 | 0.63 | 4 | 21 | 3 | 2 | 2 | NK | 0 | 5 | 0 | 0 | 1 | NK |
| DEU | 2018 | TBB_DEF (27.4.b, 27.4.c) | 0.50 | 0.01 | 0.79 | 8 | 373 | 3 | 2 | 3 | NK | 2 | 6 | 0 | 3 | 0.5 | NK |
| DEU | 2018 | TBB_CRU (27.4.b) | 0.27 | 0.00 | NK | 170 | 12586 | 8 | 5 | 6 | NK | NK | 26 | 0 | 3 | 0.73 | NK |
| DEU | 2018 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) | 0.00 | 0.13 | 0.50 | 5 | 24 | 3 | 4 | 3 | NK | 0 | 3 | 0 | 0 | 1 | NK |
| DEU | 2019 | OTB_DEF (27.1, 27.2) | 0.00 | 0.11 | 0.50 | 2 | 9 | 1 | 1 | 2 | NK | 0 | 1 | 0 | 0 | 1 | NK |
| DEU | 2019 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) | 0.44 | 0.02 | 0.89 | 15 | 267 | 5 | 3 | 4 | NK | 7 | 29 | 0 | 4 | 0.56 | NK |
| DEU | 2019 | OTB_DEF (27.14.b, 21.1.c) | 0.00 | 0.16 | 0.70 | 4 | 19 | 3 | 2 | 2 | NK | 0 | 7 | 0 | 0 | 1 | NK |
| DEU | 2019 | TBB_DEF (27.4.b, 27.4.c) | 0.33 | 0.01 | 0.85 | 8 | 462 | 4 | 4 | 4 | NK | 0 | 20 | 0 | 2 | 0.67 | NK |
| DEU | 2019 | TBB_CRU (27.4.b) | 0.33 | 0.00 | NK | 166 | 9748 | 6 | 4 | 7 | NK | NK | 17 | 1 | 3 | 0.67 | NK |
| DEU | 2019 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) | 0.00 | 0.14 | 0.64 | 5 | 29 | 4 | 1 | 3 | NK | 0 | 7 | 0 | 0 | 1 | NK |
| DEU | 2015 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.50 | 0.01 | 0.61 | 120 | 3187 | 16 | 14 | 37 | NK | 0 | 9 | 0 | 16 | 0.50 | NK |
| DEU | 2015 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.53 | 0.00 | 0.58 | 566 | 10679 | 23 | 17 | 48 | NK | 2 | 4 | 0 | 26 | 0.47 | NK |
| DEU | 2015 | Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26) | 0.25 | 0.08 | 0.25 | 17 | 119 | 9 | 6 | 12 | NK | 0 | 0 | 0 | 3 | 0.75 | NK |
| DEU | 2016 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.62 | 0.01 | 0.70 | 131 | 2522 | 22 | 16 | 43 | NK | 0 | 16 | 0 | 36 | 0.38 | NK |
| DEU | 2016 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.51 | 0.01 | 0.57 | 536 | 9726 | 54 | 26 | 73 | NK | 5 | 9 | 0 | 57 | 0.49 | NK |
| DEU | 2016 | Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26) | 0.78 | 0.06 | 0.79 | 16 | 105 | 6 | 4 | 12 | NK | 0 | 1 | 0 | 21 | 0.22 | NK |
| DEU | 2017 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.80 | 0.01 | 0.84 | 96 | 2182 | 12 | 11 | 37 | NK | 0 | 16 | 0 | 48 | 0.20 | NK |
| DEU | 2017 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.74 | 0.00 | 0.78 | 478 | 7785 | 22 | 15 | 65 | NK | 3 | 10 | 0 | 64 | 0.26 | NK |
| DEU | 2017 | Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26) | 0.57 | 0.05 | 0.57 | 11 | 55 | 3 | 3 | 7 | NK | 0 | 0 | 0 | 4 | 0.43 | NK |
| DEU | 2018 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.60 | 0.01 | 0.69 | 95 | 2098 | 16 | 10 | 36 | NK | 0 | 12 | 0 | 24 | 0.40 | NK |
| DEU | 2018 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.80 | 0.00 | 0.83 | 483 | 7511 | 17 | 13 | 76 | NK | 0 | 14 | 0 | 67 | 0.20 | NK |
| DEU | 2018 | Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26) | 0.67 | 0.06 | 0.70 | 13 | 54 | 3 | 3 | 10 | NK | 0 | 1 | 0 | 6 | 0.33 | NK |
| DEU | 2019 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.41 | 0.01 | 0.51 | 55 | 2237 | 23 | 14 | 29 | NK | 0 | 8 | 0 | 16 | 0.59 | NK |
| DEU | 2019 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) | 0.49 | 0.01 | 0.57 | 428 | 7466 | 39 | 22 | 62 | NK | 7 | 7 | 0 | 37 | 0.51 | NK |
| DEU | 2019 | Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26) | 0.33 | 0.05 | 0.50 | 8 | 39 | 2 | 2 | 4 | NK | 0 | 1 | 0 | 1 | 0.67 | NK |

**Data availability**

All requested data were uploaded before the deadline of the data call and were checked by the JRC routines. The current data can be regarded as final given current knowledge.

**Coverage**

For the five years requested all data were provided for all tables before the deadlines. For some metiers with small importance (i.e. trips with mussels as target species) catches were reported but no effort. The metier field makes it likely that for the same trip slightly different allowed codes are used if different people work on different tables (ie. landing and effort). On a similar aggregation level, but without using the metier field and instead the columns holding the gear, mesh size and target assemblage information, effort and landings may still match.

**Comparison with Eurostat data**

Only very minor differences (<1% for EU waters) occurred between FDI data and Eurostat for 2015 and 2016. More differences in landings weight occurred for 2017 only. This was the year when the German administration introduced its new database. While logbooks were corrected and updated during 2018 and 2019, submissions to Eurostat may not have been updated. Therefore, the FDI data are likely more representative than the Eurostat data for this particular year. For the years 2018 and 2019 again only very small differences occurred.

**Problems encountered**

Vessels without logbook data (small vessels u8m in the Baltic and u10m elsewhere) are problematic. A common approach to answer the data call for these vessels where data by fishing trip is not available would be beneficial. An extra table with less details for these vessels could also be an option.

*The metier field in its current format is not useful as various codes can be used for one single gear and mesh size combination in a given area. This makes it difficult to compare between countries but it also creates problems inside the country if different people work on different tables. Further restrictions on metier codes allowed are needed to ensure that all use the same metier definition in the same situation. In general, the metier field could be deleted as all important information is already provided in the other columns including the target assemblage.*

*Especially the target assemblage DEF is not very helpful. Too many different fisheries count as DEF. A further differentiation (e.g., roundfish vs. flatfish) could be beneficial*.

**Other comments if relevant**

No other comments.


**A1.10 GREECE**

**Methodology**

Greece has a National Centralize Database (NCD) for storing all the data collected in the framework of the Data Collection Framework (DCF). The NCD is supported by the integrated fisheries information system (IMAS-Fish) hosted in the Hellenic Centre for Marine Research (HCMR) (Kavadas et al., 2013). Confidential data from Vessel Monitoring System (VMS) and Electronic Reporting System (ERS) are provided by the Ministry of Shipping and Island Policy and the Ministry of Rural Development and Food respectively. The primary data are stored in the NCD covering the part of the professional fishing fleet that is obligated to be equipped with a control positioning system and keep ERS. The VMS data are used to estimate the fishing effort from vessels with total length >=15 m (all trawlers and purse seiners are included), the boatseines (that can be operate according to Commission Implementing Regulation (EU) 2017/929) and the vessels having a specific fishing license (large pelagic fishing, small scale fishing vessels operating in international waters). The spatial fishing effort is estimated by a predefine cell size (usually 2x2 Km) and by GFCM statistical rectangle according to the FDI data call ANNEX 1, using a methodology proposed by Kavadas et al. 2014 and Maina

et al., 2016. For the rest small scale fishing vessels (who are the majority of the Greek fishing fleet) effort data are collected at the port on monthly basis from a representative number of vessels. Specific routines (written in R) have been constructed in HCMR to support the analysis, raising and estimation of effort from small scale fishing vessels by major area (according to the Greek DCF sampling scheme, the country has been divided in 12 major areas) and GSA. Concerning the estimation of landings, ERS data are used for trawlers, purse seiners, boatseines and large pelagic fishery, given by GFCM statistical rectangle to support the FDI data call. For the rest small scale fishing vessels landings data are collected at the port on monthly basis from a representative number of vessels. Specific routines (written in R) have been constructed in HCMR to support the analysis, raising and estimation of the landings from small scale fishing vessels by major area and GSA. Information related to the fleet capacity is provided by the Ministry of Rural Development and Food. Sales data are included in the database collected monthly by questionnaires in the port from the small scale fishing vessels. For the rest part of the fishing fleet, sales data are stored in the NCB as they are reported in the ERS. Information on gear and statistical GFCM rectangle are provided by ERS. If there are less than three vessels in the aggregation level in tables A, G, H and I, they are marked as confidential.

The length and age distributions were processed to support both MED&BS and FDI data calls using the at-sea observer's data and the biological sampling data collected in the framework of DCF. Domains have been defined, corresponding to the DCF and are inserted in Table A. Discards Ratio and Discards are estimated based on the at-sea sampling data. In some cases there are length measurements for species, where there is no age reading.

Landings below minimum conservation reference size are not reported in the ERS, this information is calculated using the at-sea observer's data and is provided to the Med&BS and FDI data calls.

### Data availability

All the data was submitted by the FDI data call deadline.

### Coverage

Due to abnormal execution of DCF in 2015, only effort data `related to the operation of trawlers and purse seiners can be used for analysis purposes. FDI data for the year 2016 is provided for the period March to December (due to abnormal execution of DCF), except landings and effort information for trawlers and purse seiners that are provided for all months. Biological data for 2017 was not provided because the DCF was executed in the last quarter of the year covering a small area of the Greece. Nevertheless, effort and landings data for trawlers and purse seiners are provided for all months. Related to 2018 and 2019, complete data sets are provided. The Transversal data (VMS, logbooks, sales notes, fleet register) are provided by the Ministry of Shipping and Island Policy and the Ministry of Rural Development and Food Agency. Related to small scale fisheries, data are collected in the framework of DCF.

### Confidentiality

If there are less than three vessels in the aggregation level in tables A and for field TOTVALLANDG, they are marked as confidential.

### Comparison with Eurostat data

In term of the fishing fleet, no significant differences exist between EUROSTAT and FDI data call. In terms of landings, no comparison can be performed due to irregular execution of DCF in 2015 and 2017 while for 2016, no data is provided by EUROSTAT.

### Problems encountered

No problems encountered in the preparation and submission of the tables.

**Other comments if relevant**

Refusal rates from the at-sea observers have not been reported.

*References*

Kavadas, S., Damalas, D., Georgakarakos, S., Maravelias, C., Tserpes, G., Papaconstantinou, C., et al. (2013). IMAS-Fish: Integrated Management System to support the sustainability of Greek Fisheries resources. A multidisciplinary web-based database management system: implementation, capabilities, utilization & future prospects for fisheries stakeholder. Medit. Mar. Sc. 14(1), 109-118. doi: 10.12681/mms.324

Kavadas, S., Barberá, C., Belardinelli, A., Carpi, P., Cataudella, S., Croci, C., et al. (2014). Common methodological procedures for analysis of VMS data, including web-based GIS applications related to the spatial extent and intensity of fishing effort. PERSEUS Project report, ISBN no: 978-960-9798-14-3, pp 40 + annexes.

I. Maina, S. Kavadas, S. Katsanevakis, S. Somarakis, G. Tserpes, S. Georgakarakos (2016). A methodological approach to identify fishing grounds: A case study on Greek trawlers, Fisheries Research, Volume 183, pp 326-339, https://doi.org/10.1016/j.fishres.2016.06.021.

## A1.11 IRELAND

**Methodology**

The Irish data submission is based on the following sources:

1. Logbook (vessels >10m) and Sales Notes (vessels <=10m) data (wanted catch, value, spatial effort and landings etc.)

2. Fleet register (Number of vessels, Fleet determination etc.)

3. Scientific observer data (discards, length and age distributions)

QUARTER and YEAR defined on the trip return date. FISHING_TECH of a vessel for a certain year was determined based on the highest fishing days recorded for a certain gear. Estimates of discards were raised from the national sampling scheme, for which the strata are defined within the variable DOMAIN_DISCARDS. No estimates of discards were provided for unsampled strata, and were marked as "NK". Only estimated values of discards were provided in table A. Estimates of discards were raised to the fleet level for each year, quarter, gear, area, and species. Fishing effort (hours fished) was used for all species as the auxiliary variable. The discard rate (kg/h) and age composition (where applicable) were then applied across the remaining strata (vessel_length; mesh, fishery; specon_tech) based on the effort (fishing hours) in each of these strata. Discards that were observed to be zero are included. Age and length distributions for landings were estimated from market sampling and at sea sampling programme.

Irish market sampling information is not recorded with mesh size information; where possible this was re-constructed by linking to the logbooks database to the sampled data. The age composition of the landings was estimated for each quarter by gear, area and species (any further disaggregation would violate the sampling design). The age compositions were then assigned to each of the remaining strata (vessel_length; mesh, fishery; specon_tech) based on the reported landings in each of these strata.

Effort was calculated using the fecR package.

In 2020 Ireland provided refusal rates for two seperate sampling programs; demersal (DEM) and pelagic (PEL) (Table 11.1). These refusal rates were calculated using the guidlines set out in SGPIDS 3 (ICES CM 2013/ACOM:56). In 2017, Irelands demersal at-sea catch sampling programme was changed to a 4S programme (statitically sound sampling scheme). This demersal sampling frame consists of Irish registered vessels

>10m length using the gear types OTB, SSC, GNS and TBB and with target assemblages DEF and CRU. The sampling frame is stratified temporally (year and quarter) and spatially (based on which ICES areas the majority of their fishing activity occurred in the same quarter in the previous year). This results in 3 vessel lists per quarter (vessels mostly fishing in areas 27.6, 27.7.a and 27.7.b-k). Random selections are then made from these lists and sampling coordinators then try and contact the selected vessels to arrange trips for at-sea observers to sample. Vessels are selected with unequal probability, based on their length and the number of trips they have previously made. No clustering or sub-sampling is used. Refusal rates for the perlagic fleet could only be calulated for the pelagic fleet as this was teh first year of a 4s scheme.

**Table 11.1**: Irish refusal rates submitted in to STECF-FDI data call in 2020

| YEAR | SAMPLE_FRAME | REFUSAL_RATE | COVERAGE_RATE | NONRESPONSE_RATE | VESSELS_FLEET | TRIPS_FLEET | TRIPS_SAMPLED_ONBOARD | UNIQUE_VESSELS_SAMPLED | UNIQUE_VESSELS_CONTACTED | NOT_AVAILABLE | NO_CONTACT_DETAILS | NO_ANSWER | OBSERVER_DECLINED | INDUSTRY_DECLINED | SUCCESS_RATE | TOT_SELECTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2019 | DEM-6ab | 38.9 | 1.5 | 90 | 59 | 528 | 8 | 4 | 10 | 32 | 2 | NK | 0 | 7 | 61.1 | 80 |
| 2019 | DEM-7a | 29.3 | 0.5 | 93.5 | 96 | 1523 | 7 | 4 | 24 | 41 | 5 | NK | 2 | 12 | 70.7 | 107 |
| 2019 | DEM-7bk | 28.4 | 0.4 | 88.7 | 208 | 5995 | 22 | 16 | 45 | 47 | 7 | NK | 4 | 19 | 71.6 | 195 |
| 2019 | PEL | 31.9 | 2.2 | 76 | 76 | 1115 | 25 | 16 | 42 | 8 | 5 | NK | 3 | 23 | 68.1 | 104 |
| 2018 | DEM-6ab | 26.2 | 1.9 | 83.3 | 58 | 698 | 13 | 9 | 24 | 36 | 1 | NK | 2 | 11 | 73.8 | 108 |
| 2018 | DEM-7a | 27.9 | 0.7 | 88.5 | 72 | 1441 | 10 | 7 | 25 | 40 | 4 | NK | 2 | 12 | 72.1 | 122 |
| 2018 | DEM-7bk | 54.9 | 0.4 | 94.1 | 171 | 3499 | 15 | 12 | 130 | 99 | 13 | NK | 5 | 50 | 45.1 | 441 |
| 2017 | DEM-6ab | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK |
| 2017 | DEM-7a | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK |
| 2017 | DEM-7bk | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK | NK |

**Data availability**

Logbook and sales note information was finalised and deemed complete in May 2020. The landings and effort information for vessels >10m is derived from logbooks, whereas for vessels <10m it is derived from sales notes. The effort information for vessels <10m is estimated from sales notes by applying very broad assumptions for certain species/gears. Annual there remains a number of trips of vessels <10m for which effort cannot be estimated.

**Coverage**

**General comments:**

Data was provided for all years requested (2015 – 2019) for all tables before the deadlines. The data covers all areas in which the Irish fleets are active and conform to the requested aggregation. There is no information on misreporting. Data were marked as CONFIDENTIAL if the data relate to less than 3 vessels operating within a fishery. Values in the fields TOTWGHTLANDG and TOTVALLANDG in table A and table H were both considered as confidential when the criteria of < 3 vessels was met.

**Specific comments:**

- **Domian name consistency:** Overall, there was good consistency between table A and tables containing biological samples (Tables C, D, E & F). There were no domain names in the biological tables that could not be matched to metiers in Table A. There are a number of domains in Table A, which have discards for TAC species but no associated landings. Although the majority of these are due to incidents of bycatch species in mixed fisheries, there are a number of whiting (WHG) discard records which should have associated landings. This is due to metier labelling issue at the level of the trip and the sampler, where the fisher records one metier in the electronic logbook and the sampler has recorded another métier. This is considered a minor issue as it effects a very small tonnage of WHG discards <400 over a period of 5 years. At a national level it is planned to address issue using the RCG metier labelling script developed by an RCG subgroup ([https://github.com/ices-eg/RCGs/tree/master/Metiers](https://github.com/ices-eg/RCGs/tree/master/Metiers))

- **Eurostat data comparison**: There is generally good consistency between Irelands FDI submission and the Eurostat extraction. The only major difference is in the vessel numbers, which is because the Eurostat list contains inactive vessels.

- **Confidentiality**: Ireland considers that any aggregated operation that contains less than three vessels should be marked as confidential. There is a need for the Commission to clarify the legal requirements and methodology, which should be applied in this section. The provision of different levels of confidentiality in this year's data call (all, none, weight and value) helped to improve data availability.

- **Spatial data:** There were some minor issues with spatial tables, mostly associated with static fishing gears for vessels under 12meters, which do not have electronic logbooks. It is planned to apply the data checking scripts deveped by the spatial subgroup to the data call in 2021. ([https://github.com/mauriziogibin/EWG-FDI-MAPPING](https://github.com/mauriziogibin/EWG-FDI-MAPPING))*.*

- **Biological data:** The length tables (Table D and F) contained a number of duplicated starta, with varying mean weights. This error is artefact of how the data is raised from individual métiers and will be resolved for resubmission to next year's data call. To avoid any impact to this year's MCRS analysis the maximum of the two weights was used.

  A number of SOP errors were found in the biological tables that contain age: Table C and E. It is unclear what has caused these errors, and although they are considered substantial they could not be fixed within the timeframe of the meeting, but they will be corrected and included in a resubmission to next year's data call.

**Problems encountered**

No problems were encountered during the data collection or submission process.

**Other comments if relevant**

As with last year the data call was very limited in description of variables and context, as a result there was too much room to interpret, and this could lead to member state specific inconsistencies. Time should be given during the working group to address these issues.

## A1.12 ITALY

**Methodology**

Capacity, effort and landings data are produced considering all the available information at the most disaggregated level:

• Fishing fleet register. The fishing technique actually used by each vessel is checked on a quarterly basis. This activity includes: field surveys through the data collectors network used in sample surveys, cross-checking with the information reported in logbooks, VMS data, comparison with previous fleet structures.

• Logbooks and landing declarations. Basic and regular checks are implemented on the gear used and on the species caught and landed. These declarative forms are the unique source of information for dredgers, purse seiners, bigger trawlers and vessels operating outside the Mediterranean.

• Sales notes data. In addition to fundamental checks on the average price for the species at the highest level of geographical and technical detail, this source of information is also used to validate the data on the quantities landed by species.

• VMS data. The information on the geo localization covers 95% of the fleet => 15 meters (1600 boats). In addition to providing information about of the effort distribution, they are used as a control tool for the activity through crossing with the logbook declarations and the sample survey. They can also provide information on the gear used, therefore on the metier.

• Sample survey. It is the prevalent source of information for the fleet < 10 meters; sales notes data are also used to cross-checks sample data. The sample survey is also applied to the fleet > 10 m to integrate the information derived from the Control Regulation if needed.

Specific procedures are applied to verify the information obtained from the different sources, relating to a same variable (gears, days, catch and price for species), with the goal of identifying and validating the actual figures and get an exhaustive picture of the fishery for scientific purposes.

Effort calculations are based on the definitions reported in the EUMAP, ie.:

- days at sea: any continuous period of 24 hours (or part thereof) during which a vessel is present within an area and absent from port;

- fishing days: any calendar day at sea in which a fishing operation takes place.

Therefore, based on these definitions, the day at sea is relative to the vessel and includes the time of navigation, while the fishing day is relative to the time of use of a fishing gear. Translated in terms of data collection, days at sea can be associated with the fleet segment (group of vessels), while fishing days can be associated with the gear (or by metìer). The FDI and the MED data call requires effort (days at sea and fishing days) both by segment and by gear. In order to provide data at this level of aggregation, Italy is following the methodologies proposed by the Workshops on Transversal Variables of Zagreb (2015) and Nicosia (2016) that proposed a harmonized approach to associate days at sea to the gear starting from the information at fleet segment level.

Data on discards are collected through the protocols and the statistical procedures reported in the Italian Work Plan. In particular, since 2010, RCGMED&BS created a regional view of the discard sampling programme in order to optimize the spatial, time and metiers coverage. RCGMED&BS prepared a complete list of métiers important to sample and provide scientific justification for not sampling certain metiers for discards (see RCGMED&BS 2010 - table 7 page 34, RCM Med&BS 2016- annex IX). The discard estimates presented in the FDI data call reflects this regional

sampling agreement. It has also to be considered that the discard sampling program is aimed at providing basic data for stock assessment purpose and not for monitoring LO implementation. Several species under LO (annex III of RegMED) are caught by artisanal fleets for which there is no obligation to implement a discard monitoring program according to the Italian DCF WP.

In table A, the discards are partitioned by landings within the same *year, quarter, vessel length group, métier, discards domain, sub region and species*. An ad hoc routine in R has been developed. This routine splits the discard volume available at the metier level according to the estimated proportions on production per quarter, métier and fleet segment as reported in table A. The splitting procedure can be summarized into 2 steps:

1. the proportions of the production by metier and vessels length are estimated,

2. the proportions at point 1 are applied to the discard volume reported at metier level.

The splitting is based on certain assumptions and was accomplished because the sampling scheme for discard estimations is not stratified by fleet segment, but only by metier and quarter, as reported in the work plan for data collection.

*Refusal rates*

Selection of PSU at each sampling occasion was not fully probability based, because of the limited number of vessels by metier, quarter and geographical subarea (GSA level). There was thus no formal refusal procedure for accepting observers. Observers were accepted on board of the vessels fishing in specific zones of a given GSA on ad hoc basis. As such, no specific data was provided in table B.

## Data availability

All the data was finalized and available by the data call deadline.

## Coverage

The Italian tables cover all the time series 2015-2019 and all the métiers.

The quality checks provided in the tableau does not highlight any incorrect data and/or inconsistencies among the data provided in the different tables requested by the data call.

The very few cases of average length of vessels not compatible with the vessel length code (table J) are not to be considered as an issue because they are due to clustering of some vessels for confidentiality and statistical reasons. Also, there are some commercial species for which the volume of discards has been reported as higher than landings. But this has not to be considered a data issue because it mainly refers to species with a very low commercial value and which catch is frequently discarded (horse mackerel and Mediterranean horse mackerel, bogue, common pandora, small spotted and black mouth catshark).

## Comparison with Eurostat data

There is no difference between Eurostat data and FDI data call data.

## Confidentiality

No confidentiality issue.

## Problems encountered

No problems encountered in the preparation of the file.

## Other comments if relevant

The estimation of discards through biological sampling is implemented by métier (as reported in the EUMAP, in the WPs and in RCGMEd&BS reports). Extrapolating the discard to the fleet segment involves assumptions that can generate bias. In order to avoid to receive a data issue, in the 2020 FDI data call, an ad hoc routine in R has been developed and applied by the institutes involved in the Italian program of biological sampling. This routine simply splits the discard volume according to the estimated proportions on production per quarter, métier and fleet segment as reported in table A. This implies the assumption that the discard volume is distributed

among the vessels of different LOAs, though belonging to the same métier, as the landing, although there is no evidence that this assumption is met from the observed data.

This routine has been applied only to avoid receiving again a data compliance issue (as in 2018), but the structure of the FDI data call should be adjusted because the information on discard provided in table A is not derived from specific observed data.


**A1.13 LATVIA**

**Methodology**

All data on fishing operations e.g. gear, mesh size, area etc. are obtained from official logbooks, which are stored in Integrated Control and Information System for Latvian fisheries (ICIS). These logbooks cover all the areas where Latvian fishing fleet is operating including the small-scale fleet. Information about fleet capacity is synchronised with Latvian Fleet register and is stored in ICIS. Central Statistical Bureau of Latvia (CSB) provides annual average prices per species, based on questionnaire "1-Fishery", which all fishing companies are obliged to fill in.

For small scale fleet effort was calculated as one day at sea is equal to one fishing day, because information in coastal logbooks is provided on daily basis.

Information about discards are based on fishery observer estimations. This category is the part of the catch, which is thrown overboard into the sea.

During the work in the sea on the board of ship or boat in small-scale fishery observer is collecting information from each fishery act by species and catch categories (Landings, BMS and Discards).

All discarded fishes by species are measured and weighted, except in the case when the discard is very large, in that case, a subsample weight is taken. All sub-samples are weighted. The sorting of fish into catch categories is made by the fishers.

All available discards data are calculated for each species, divided by quarters, sub-divisions, gear and fleet segment.

Discard rates are calculated by formula:

$$\text{Discard rate}_{trip,species} = \text{Discard (kg)}_{trip,species} \,/\, \text{Landing (kg)}_{trip,species}$$

After obtaining Discard rate, discard rate is applied to landing of species by quarter, SD, gear and fleet segment.

$$\text{Discard (ton)}_{Time,SD,Fleet segment,Species} = \text{Discard rate}_{Time,SD,Fleet segment,Species} \times \text{Landing (ton)}_{Time,SD,Fleet segment,Species}$$

No thresholds were applied.

R script have been used for effort calculation in case of offshore fishery.

In period of 2015-2018 no refusals to take observers on board were recorded.

**Data availability**

Latvian data were provided on time and in accordance with required format. Average prices per species for 2019 were used from 2018. Prices for 2019 could be available in autumn of 2020.

**Coverage**

Provided data covers all Latvian commercial fishing fleet, which operates in Baltic Sea, CECAF and NEAFC areas. Information about recreational fishery in Baltic Sea were not provided. Due to confidentiality, information about distant fleet is provided as confidential all other information is provided as not confidential. Data were calculated and provided in the same way as for economic data call.

Comparison with Eurostat data did not show big difference. As information about recreational fishery was not provided, there are small differences in landings values for fresh water species between the two datasets.

**Problems encountered**

No problems were encountered related to data collection or related to data submission.

**Other comments if relevant**

No other comments.


**A1.14 LITHUANIA**

**Methodology**

**Data collected**

For all fleet segments by regions the transversal variables is deriving from database system FDIS, which contains the primary data referred to Commission Regulation (EC) No 26/2004 of 30 December 2003 on the Community fishing fleet register in Annex I ,Council Implementing Regulation (EC) No 404/2011 in Annex X and the national legislation contains information regarding the restrictions on national logbook completion for vessels up to 8 metres' length overall. Community fishing vessels up to 12 metres' length overall are obliged to keep a fishing logbook and submit landing declarations. Fishing vessels of 18 metres' length overall or more, the fishing logbook is in electronic form and the landing declarations are submitting electronically. The Lithuanian fleet does not consist of any active vessels with the length class of 12 to 18 meters.

Biological data is collected under the Lithuanian National Programme according to the sampling strategy.

**Estimation procedures**

For estimating discarded catches have been used two data sources: data collected by observers on board and sampling of releases. The logbook data used for comparison. For flounder discards counted against total landings (by request of WGBFAS), for other species by number of voyages (metodology discrabed in WKSCMFD report). The ratio of discards calculated for landings per trip and multiplied by the total landings per strata.

Data on landings for vessels less than 8 metres length overall was derived from the combination of the monthly declarative forms for the periods until 2018 and since 2019 from the national logbook. All data has been cross-checked with sales notes. Combination of information from sale notes and declarative form provide the key details on the species, presentation, location of landings, weight and value of fish being landed. To approach reliable and high quality of data Lithuania uses a "census" type of declarative form and logbook for vessel. Data derived from national logbook were completing by a company engaged in commercial fishing in the Baltic Sea coastal area. Small scale fleet has a daily activity and in declarative form 1 Day at Sea assumed as equivalent to 1 Fishing Day, 1 Fishing trip and 24 hours. For the fishing technique (FISHING_TECH) defining has been applied the same rules as for the fleet economic data call.

For all fleet segments value is estimating based on prices derived from sales notes multiplying by weight from landing declarations.

Spatial data was prepared using "0.5*1" resolution for the Lithuanian fleet in all operating areas. In cases of occurring any missing or incorrect fishing positions recorded in the logbooks fishing activities were identified using the VMS data. For small scaled fleet the fishing area assumed as one statistical rectangle which cover all coastal area.

Methodology for partition of discards from tables C-D to table A.

The discard applied to the landings at each stratum, by species, for each year, quarter, gear, area within a domain_discards. No estimates of discarded catch were provided for unsampled strata, and were marked as "NK". If the species doesn't have corresponding landings, the discards are distributed to the aggregation of table A based on effort. This means that there can be lines with discards but no landings.

No thresholds for submitting biological data were applied.

R script was used for calculations of days at sea and fishing days.

**Refusal rates**

Sampling programe are contrebuted only on the Baltic Sea region. Sampling programme for the CECAF and SPRFMO regions is carried out according to multilateral agreement. The Nederland coordinate the programme for CECAF and Poland for SPRFMO. Selection of PSU was not fully probability based, because of small number of vessels. There were no formal refusals for accepting of observers. Observers were deployed on board of the vessels fishing in open Baltic Sea on ad hoc basis. As such, no specific data was provided in table B.

**Data availability**

Transversal data by 1 February and biological data by 1 April are available for previous year.

**Coverage**

2015-2019 period submitted data covers all areas requested in the data call and conforms to the requested aggregation, by quarter, area, gear and mesh sizes. Any meaningful data quality issues demanding correction and re-submission of data sets was raised during quality checks. Data set submissions complied with the required deadline dates. In respect of data check reports, TABLE_A_CATCH of 2017 data were resubmitted due to observed one duplicate line. Any significant discrepancies have been noticed in the data checks of the Lithuanian data.

**Comparison with Eurostat data**

Between Eurostat and FDI data calls, some discrepancy in value and landings data might occur with regards to fishing trips which extended over two different years where the landing was presented in the final year. In that case, effort with catch and landed value were provided parcelling by two years for the FDI data call. As for the Eurostat data call, the submission is based on the landing or sales dates. Driver of the difference in vessels number is that for Eurostat the fleet is considered on a snapshot date, whereas FDI looks at the total fleet in a whole calendar year. Therefore, comparing Eurostat and FDI vessels number like-with-like some small differences were revealed.

**Publication of confidential data**

Data that considered subject to confidentiality and were flagged in "CONFEDINTIAL" column allows statistical unit vessel to be identified, either directly or indirectly, thereby disclosing individual information. The confidential data can be used for EWG ToRs purposes. Aggregated and/or published data should be on the level, which does not allow any identification of the statistical unit.

**Problems encountered**

Due to the established measures to alleviate a serious threat to the conservation of the eastern Baltic cod causing most fishing to be stopped, in the second part of 2019 the sampling plan was incomplete. As such, the provision of biological data has not been satisfied. Information between vessels where observers are welcomed and vessels where observers are refused in the Baltic Sea region shall be improved as recently is it not available. In some cases, allocation of metier to trip or fishing operation was highlighted as issue. There are no general concepts on the target species (or target assemblage) as a definition criterion, nether clarification on target assemblage specification in case of efforts without landings. That could lead to inconsistency between Member States. However, there is intersessional between RCG meetings working group which is working on developing of guidance on target species referring to metier. No problems with data submission were encountered.

**Other comments if relevant**

No other comments.

**A1.15 MALTA – NO INFORMATION PROVIDED**

**A1.16 POLAND**

**Methodology**

Official fisheries data of the Polish fleet from the period 2015-2019 were collected from the database administrated by the Ministry of Maritime Economy and Inland Navigation.

Polish fishery is located mainly in the Baltic Sea, therefore sampling effort is concentrated in this area, except one sampling trip per year in the Eastern Arctic. Additionally, Poland is a member of the multilateral agreement to cooperate in the biological data collection on pelagic fisheries in CECAF and SPRMFO waters.

Discards were estimated from trips sampled at sea. Domains used to estimate discards result from the sampling plan applied. For the Baltic Sea the domains consist of quarter, FAO subdivision, gear type, target assemblage, mesh size range (one or more) and are used for all vessel length classes, species and commercial categories. For Eastern Arctic the domains consist of FAO division, gear type, target assemblage, mesh size range and are applied to whole year, all vessel length classes, species and commercial categories.

Fishing effort was calculated following the methodology agreed on DCF Transversal Workshops. The fecR package was not used directly because the input data has a higher level of spatial aggregation (national sub-polygons of the ICES rectangles in the Baltic Sea). Therefore, the logic of the fecR calculation algorithm was re-implemented in the R environment.

For vessels with length of <10 m the information on the start and end of the trip is not registered. In that case, it is assumed that one fishing day is one fishing trip lasting 8 hours at sea.

Refusal rates were calculated as a number of refusals from vessel owners divided by the number of approaches where the contact was successfully made.

The total value of landings was calculated using an average annual price per species. An average annual exchange rate was used to provide the value in Euro.

Spatial data was prepared using "0.5*1" resolution for all areas. For FAO area 27 information on ICES rectangle was used to identify the coordinates. In the case of distant waters, the fishing location was identified using the VMS data.

Segmentation of the fishing fleet in terms of vessel length classes and fishing technique was carried out in the same way as in the economic data call.

**Data availability**

All the data was finalised and available before the data call deadline.

**Coverage**

**General comments**

The data analysis allows to state that all variables seem to be consistent across years. Very few issues have been identified and are described below.

Information on the value of fish landed by the fleet operating outside the Baltic Sea is not available. Additionally, for some minor species in the Baltic Sea the value is not available. There are also records in which the landing weight was so low that the value was rounded to zero.

**Comparison with Eurostat data**

The comparison with Eurostat data did not show any significant differences. Unlike FDI data, the number of vessels in the Eurostat data also includes inactive vessels.

**Publication of confidential data**

In the period 2015-2019 Poland had 3-5 vessels fishing outside the Baltic Sea. Due to the national statistical law it was decided to mark the data about their activity as confidential to avoid the risk of identifying a single vessel.

**Problems encountered**

**Problems related to data collection**

At the beginning of 2017 a new sampling design was implemented in Poland. The major change was a move towards statistically sound sampling and random selection of sampling units. As a consequence the refusal rates were provided only for the period 2017 - 2019 as in the previous years the sampling design was based on the opportunistic selection of sampling units. Moreover, 2017 was a transitional period between old and new sampling design. Not all contacts to vessel owners were available and as a consequence, many ad-hoc expert trips were done.

**Problems related to data submission**

No problems with data submission were encountered.

**Other comments if relevant**

No other comments.

### A1.17 PORTUGAL

**Methodology**

In general, Portugal uses multiple data sources: Administration data base (fleet register; licenses), logbooks, sales notes, questionnaires and biological data collected on the basis of the National Programme for Data Collection (DCF/PNAB), under the Data Collection Framework (DCF).

Transversal data are obtained from logbooks and sales notes taking into account the Control Regulation and the national Work Plan. This data are combined to get the more accurate information from both sources when available for the same vessel. Daily routines from established business rules are performed to detect and correct errors push from the data sources to the statistical database.

As Landings and Effort are requested at a métier level, Portugal developed a procedure that classifies each trip in a métier. The procedure is split into different methodologies concerning the characteristics of each vessel.

For vessels without logbook, Data Integration software is used to apply all the conditions laid down in an algorithm based on Sales Notes and Fishing Permissions (licenses). As the approach for FDI data call is based on the concept of TRIP, it is assumed that each sale note date of a particular vessel corresponds to one trip. Each trip, observing certain conditions in terms of catch composition, and taking into account the fishing licenses of the vessel, is allocated to a specific métier. In the Madeira outermost region, the métier assignment is also support by questionnaires carried out at the port

For vessels with electronic logbook, the methodology is based in SQL scripts and uses the information recorded in the Electronic Recording and Reporting System (ERS) reports, such as gear, catches and spatial information for each haul in each Fishing Activity Report (FAR). Each trip is classified in terms of date, area, gears, métier , catch composition (species), catch quantity (kg) and catch value. The current version of ERS does not have the definition of TRIP connecting all the reports what is a constraint for data analysis. However, a new version is expected to be implemented in the future in parallel with a new data model which will allow an improvement in data quality.

Concerning the spatial information requested, for vessels with logbook, it was used the coordinates reported on the FAR, at the haul level. In the case of vessels without logbooks (small scale fisheries - SSF), coordinates of the landing harbour were considered.

**Value of landings**

For vessels with logbooks, the value of landings is calculated multiplying the weight of landings by the average price determined for each vessel, specie and fishing area. For SSF, the weight and value of landings are the ones recorded in Sales Notes. All vessels are obliged to sell fresh fish at the auction market.

**Discards estimation**

Discards values on tables C and D are estimates based on biological sampling and were provided for 27.10.A area and trawlers in 27.9.A.

Regarding discard estimates values for trawlers, these are the values reported to ICES for stocks assessment, based on data collected from the observers sampling program on-board demersal fish and crustacean trawlers in area 27.9.A. Using the procedure to raise discards from haul to fleet level in the Portuguese trawl fisheries (Jardim and Fernandes, 2013), species with low frequency of occurrence or abundance in discards (i.e., with a large number of zeros in the data set) cannot be reliably estimated at fleet level. The frequency of occurrence and abundance of most species in discards of the Portuguese bottom trawl fleet was below 30%.

For the remaining sampled fleets in 27.9.A (GNS_GTR, LLS_DWS, PS_SPF, and TBB_MCD) discards estimation procedures are still being discussed/developed. The main difficulties for their conclusion are related to the multi-gear trips and the need to choose an adequate auxiliary variable (with consistent information from the population) to use in the raising procedures.

Consequently, annual trawl discard volumes and length frequencies at the fleet level are only estimated for some species and years. Landings by species for the métier's coded as OTB_CRU_>=55_0_0 and OTB_DEF_>=65_0_0 in Tables C and D were the results of aggregation of landings of more than one trawl métier reported in Table A, according to the table below. Discards estimates are reported for the same aggregated métier s, which are the groups covered by the sampling program.

| Métier s from Table A - CATCH | Métier s in Tables C to E (biological data) |
|---|---|
| OTB_CRU_55-59_0_0 | OTB_CRU_>=55_0_0 |
| OTB_CRU_>=70_0_0 | |
| OTB_DEF_0_0_0 | OTB_DEF_>=65_0_0 |
| OTB_DEF_65-69_0_0 | |
| OTB_DEF_>=70_0_0 | |

In what concerns to discards information provided in Table A, discard values were based on the annual discard estimates for each sampled fleet (OTB_DEF and OTB_CRU), proportionally distributed according to the landings at métier /quarter/vessel_length. This is not the best procedure because OTB discards estimates were raised using effort as auxiliary variable and, for this purpose, we are assuming that landings and discards are correlated, which may not be true.

Regarding sub-region 27.10.A, discards values were estimated based on data collected at the observers sampling program on-board. During 2019, observer coverage included several fleet: handliners, longliners, purse seiners and gillnetters. Each observer covers 100% of the discards by haul/trip (species composition and length), meaning that discards were raised by métier and vessel length segmentation. Length-weight relationships were used to obtain total weight discarded by trip. Raising factor was applied by species, i.e., for each quarter/métier/vessel length/species discards was estimated using weight landed or number of trips, according with the assumption of a species been landed or not, respectively.

## Landings and Discards Age and Length data

Length frequency is collected for all species present at landings occurring in ports with at market sampling coverage – concurrent sampling. Depending on the species selected for sampling at laboratory, the frequency on collecting other biological variables such as weight, age, sex and maturity varies in line with National Workplan.

The same approach is conducted regarding at sea sampling concerning all catch fractions at a haul level.

Age data (Tables C and E) were provided only for the species that have age information, which are horse mackerel (HOM), mackerel (MAC), sardine (PIL) and blue-whiting (WHB), in area 27.9.A. Table C contains age information only for WHB, because this is the only aged species present in discards with frequency of occurrence in discards > 30%. Regarding area 27.10.A, no age data was provided (Tables C and E).

Length data (Tables D and F) are provided for all species assessed by ICES and for métiers sampled in areas 27.1.B, 27.2.A and 27.2.B (onboard sampling) and 27.9.A (market and onboard sampling). Table D contains length data for hake and blue-whiting, species in which the frequency of occurrence in discards is higher than 30%, as previously referred. In each DOMAIN_LANDINGS, TOTWGHTLANDG weight was converted in number (dividing by the MEAN_WEIGHT_LANDG) and then distributed by age and/or length, using the proportions of each age or length class in the total distribution. The same procedure was applied for the discards. Refusal rates were recorded regularly since 2017. Concerning area 27.10.A, length data (Table D) are provided for all species from discarded catch fraction (onboard sampling). Table F for the Azores (27.10.A area) was not submitted due to problems related to the remote access to the database since the pandemic disruption (from March onwards) which hampered the completion of updates and changes. As a result and considering the volume of data to be processed, the length data raising procedures could not be run.

## Refusal rates

For onboard sampling in 27.9.A, there are five sampling schemes in the national work plans of 2015-2019: PTS3 - GNS_GTR_DEF (vessel length > 12m), PTS9 - LLS_DWS (vessel length >12m), PTS12 - OTB_DEF (vessel length > 24m), PTS15 - OTB_CRU (vessel length > 12m), PTS18 - PS_SPF (vessel length > 12m), PTS21 - TBB_MCD. For each of the five sampling schemes and each sampling year, the sampling frame includes all active vessels of that métier and vessel length that operated in 27.9.A in the previous year. Vessel selection is random within each métier. As requested and defined in the 2020 FDI data call:

Refusal - refers to "raw industry refusal" i.e. vessel skippers who, having been successfully contacted, ultimately failed to allow the observer to go on board to obtain the sample;

Non-response – refers to all attempted contacts that ultimately failed to provide a sample, for whatever reason;

No-answer – refers to contact attempts (made by the observers) that, despite the correct contact details, were not successful (i.e. it was not possible to establish contact with skippers or vessel owners);

Observer-declined – refers to contacts where observers declined to go on-board following the availability of skippers or vessel owners;

Industry-declined - skippers or vessel owners declined to accept observers on-board.

At sea sampling in area 27.10.A is not considered to be a probability based vessel selection design. Therefore, refusal rates were recorded but not submitted.

## Effort

Logbook information is used to calculate effort (fishing days) by fishing area using SQL scripts. This is a powerful tool for that aim, however, in situations where the trip is not well constructed in the logbook, the estimated effort is not correct. For SSF, it is assumed that one Sales Note corresponds to one trip and one fishing day.

**Data availability**

Portugal has submitted all data before the deadline. It should be remarked that the final output for JRC database submission depends on different institutions involved (including Outermost Regions). This process is very time-consuming once not all data handlers have the same level of access to the data needed neither the same skills. In addition to these difficulties, there is also the fact that the Portuguese fleet is extremely extensive and diverse operating in a spread number of FAO areas. Due the proximity of the deadline to the vacation period and the labour constrains caused by the COVID19 outbreak, it was necessary to add some data during the meeting. In addition, as the validation tool does not cover all the issues (duplications and some inconsistencies between tables) and it was unable to upload after the second day of the meeting (before knowing the result of the crosscheck), it was not possible to correct all inconsistencies.

**Coverage**

**Data checks**

Portugal went through all the tableau pages and analysed the quality checks to evaluate potential incorrect data and/or inconsistencies between the data provided. Almost all issues were resolved during the meeting, and only minor issues, not exactly errors, remained.

The data submitted to FDI data call are consistent with the Eurostat data. The difference observed in terms of the total number of vessels is because the total fleet (including inactive vessels) is reported to Eurostat while for the FDI only active vessels are considered.

In some cases the total weight of fish discarded from a certain species is higher than the total weight commercialized, this occurs in species with low commercial value, with a ban on landing below the minimum size, and species whose quota has ended.

For Area 27.10.A it was only possible to submit data from 2018 and 2019, since in 2018 a new entity became responsible in the Azores for DCF, with data from previous years not yet available.

**Confidentiality**

The field introduced into tables A, G, H and I to flag confidential data was with the purpose of reflect the MS approval in providing the access and handling of detailed data to EWG members and JRC IT team.

All the data that relate to less than 3 vessels were considered Confidential.

**Problems encountered**

A large amount of data at a high level of disaggregation, plus the changes from year to year and weak guidelines turns this data call into the most difficult, time-consuming and with the lower rate of confidence in the match between the request and what is delivered. This is a big burden for MS and is not clear if all the information requested is needed.

For effort calculation, logbook information is used to determinate fishing days using SQL scripts. The logbook is a powerful data source for effort estimation; however, there are situations where the end of the trip is not recorded in the logbook and the trip effort cannot be estimated correctly.

The number of fishing days is difficult to estimate for SSF once there are no logbooks for vessels < 10m LOA. A common approach is used to estimate the fishing days from the sales notes, assuming that 1 sale note corresponds to 1 fishing day. Albeit this common approach, in the Azores Autonomous Region, a different pattern among fleet segments is observed as the number of fishing days per sale note is different.

**Other comments if relevant**

Since the data providers from the outermost regions are different from the mainland, it would be very useful if data check tool includes Geo Indicator on the filter. Portuguese Experts consider that it will be important to organize a workshop for data providers, between the launch of the request and the submission deadline. This workshop does not have to be face-to-face, a video conference will be sufficient. This could be a place for the data providers to ask for clarifications,

to change methodologies, improve the practices to extract data in order to provide the best and on time data to the EWG.

## A1.18 ROMANIA – NO INFORMATION PROVIDED

## A1.19 SLOVENIA – NO INFORMATION PROVIDED

## A1.20 THE NETHERLANDS

### Methodology

Wageningen Marine Research (WMR) provided biological data on discards, length and age distributions have been processed to output to both ICES data calls and the FDI data call and is based on sampling data from at-sea and market sampling. Biological data are integrated with the official recording on landings and effort. Discards are estimated based on the at-sea sampling data. For species that have corresponding landings within the same quarter, vessel length group, metier, discards domain and sub region, the discards are distributed to the aggregation of table A based on landings. In cases, monitoring programmes not provide discard information, because there was no sampling coverage, a "NK" (not known) was applied.

Effort, days at sea, are calculated based on the period between leaving and entering the port. Period is rounded by whole days. Number of fishing days are the number of unique fishing days within a fishing trip. For active fishing gear there can only be one fishing day by gear. For passive gear, a multiple gears, or gear units, can be applied during one day. For example, a vessels sets 3 different gillnets, this is counted as 3 fishing days.

The Netherlands did not provide refusal rates (table B). Refusal rates, occasions were fishers\fishing companies refuse to have an observer on board, should be recorded, table B. However, for the monitoring of demersal fisheries the Netherlands implement a study fleet. Participating fishers sample catch on a regular basis, also observer go on board to validate the sampling programme. Refusals are never encountered. Because of the high level of cooperation makes recording of refusal rate oblivious and are therefore not recorded.

Dutch pelagic fisheries are owned by 3 fishing companies. The observer programmes and market sampling run in close cooperation with these companies. Refusal of scientist sampling is not occurring (so far). In addition, calculating refusal rates over 3 different entities is considered to be not beneficial.

For the monitoring of passive gear/small scale fisheries and shrimpers, attempts of setting up a system to record refusals rates failed in previous years, and is still the situation. Main reasons were incomplete vessel lists and contact details of fishers.

### Data availability

WMR conducted biological sampling programs under the Data Collection Framework (DCF). Landings and effort information is based on official logbook data, provided by the "RVO", the executive body of the Dutch Ministry of Economic Affairs and Climate Policy.

### Coverage

The Netherlands provided fleet specific landing and effort data for the period 2015-2019. The data covers all areas in which the Dutch fleets are active and conform to the requested aggregation. There is no information on misreporting, although the reliability of the official discard records in the official logbook registration is believed to be questionable and, therefore, not used. Discard estimates were provided for all species caught in fisheries sampled under the Dutch DCF monitoring programme. Within this monitoring programme for discard/catch and biological data a study fleet is used, which sample catch data. The participating group of vessels is representative for the complete demersal Dutch fleet, on the aggregation level of metier, the combination of gear type, target assemblage and mesh size range . Pelagic, shrimp and passive

gear (small scale) fisheries are monitored with an observer programme of which the sampling coverage is limited.

**Publication of confidential data**

If there are less than three vessels in the aggregation level in tables A, G, H and I, they are marked as confidential (A).

**Problems encountered**

*No major problems related to data collection were encountered. One minor issue was not providing information on average vessel age, therefore there in no output on 'Tableau' for 'avgage' for 'NLD'.*

**Problems related to data call**

*No major problems were encountered related to the data call. A minor issue is encountered during the merge of biological and effort data, which resulted in loss of landings data on the level of ices-rectangle. To solve this issue, landings were allocated to the most central ices-rectangle of a sub-area, which resulted in an unbalanced coverage of spatial landings on rectangle level. The similar problem occurred with vessel lengths, which resulted in losses of vessel length information in combination with landings data. However, all information of effort for both ices-rectangle and vessel length is available in the effort tables.*

**Other comments if relevant**

No other comments.


**A1.21 SPAIN**

Spain has provided 2015-2019 data for all the fisheries of the Spanish vessels around the world (ICES area, Mediterranean Sea, CECAF area, Tuna fisheries and Long distant fisheries).

**Methodology**

Data Procedure:

- Landings weights data of Table A come from the cross-checking of sales notes and logbooks data.

- Discard information comes by default from scientific observers on board programme by métier. This programme provides discard ratios by stratum (combination of year, quarter, metier and species). Discard ratios (discards/landings) are multiplied by their corresponding landings weights of each row of Table A in order to obtain each row discard weight. New rows are added when there is a discard estimation but landings are zero and therefore there was no row. Only when there are no data from observers on board in a metier, discard data from logbooks are distributed among the rows of its stratum (combination of year, quarter, metier and species) proportionally to the landings of each row.

- Once discard weights are in Table A (Table A is by quarter), Tables C, D, E and F are produced (these tables are by year) adding Table A data by quarter to obtain data by year. Landings length distributions (Tables F NAO OFR and Table F MBS) and landings age data (Tables E NAO OFR and Table E MBS) are obtained from the biological sampling (lengths by metier and ages by stock) and they are raised to the final weights. Discards length distributions (Table D NAO OFR and Table D MBS) and the samples to obtain the discard age distributions (Table C NAO OFR and Table C MBS) came from the observers programme. Discards length and age distributions are raised to the final discard weights.

- Refusal rates of Table B come from the observers programme. Refusal rates collection has been implemented from 2016 on, therefore no data prior to this year are available.

- Effort data (Table G and Table J) come from the cross-checking of sales notes (vessel length <10 m) and logbooks data.

- Landing and effort by rectangle (Tables H and I) are obtained from the logbooks information.

**Data availability**

Tables A, B, G, H, I, J were uploaded the deadline date (September 7th). Tables (C, D, E, F) were uploaded on September 8th. Corrected versions of some of the tables were uploaded later until September 15th.

**Coverage**

Data seem to have a high coverage.

**Comparison with Eurostat data**

Data provided to STECF FDI were similar to data provided to Eurostat.

**Confidentiality**

All the Spanish data were non confidential.

**Problems encountered**

**Problems related to the structure of the data call**

The overstratified FDI data matrix does not match with the DCF data collection sampling strata, this produces artefacts as for example discard data must be disaggregated by vessel length range producing possibly non representative values.

Problems related to the data set preparation

Domain discard and domain landings should be the sampling units, which in the case of Spain are the metier (DCF codes). Using other units causes:

(a) wrong identification of duplicates in the data base,

(b) the split of one métier data into several groups,

(c) the aggregation of data of different metiers in the same group, which causes (d) and (e),

(d) the weight of landings is different in Tables A, E and F because landings without sampling do not appear in tables E and F and there are domains with several metiers and not all the metiers are sampled,

(e) incorrect processing of the mean weight data that causes (f):

(f) the sum of products of mean weight by the number of individuals (SOP) does not correspond with the real weight that causes (g):

(g) the stock structure data in the data base is affected and could affect to the MCRS (minimum conservation references sizes) outputs for Spain, that should be carefully interpreted.

Problems related to data submission

De-minimis and survivability exemptions data could not been carefully analysed due to the data upload delay.

This delay affected also to the comparison of the two tables with data collected and estimated with fills in.

This is a recurrent situation, year by year.

**Other comments if relevant**

No other comments.

**A1.22 SWEDEN**

**Methodology**

Landings, including BMS landings, were retrieved from logbooks for vessels >=10m LOA and from monthly coastal journals for vessels <10m LOA.

Discards were estimated from the Swedish on-board sampling programme conducted under the DCF. The estimation (raising) was carried out according to the national sampling schemes within the strata described by "Domain discards". If no estimate could be achieved from sampling, or a stratum was not sampled, no discards were provided. The total discard estimates achieved for each stratum ("Domain discards") were then partitioned to the much more disaggregated format in the STECF data call. The partitioning was done proportionally to the variable used for the raising (landings of target species in the fishery or fishing hours, depending on the fishery). Proportion of landings of the same species was not used for the partitioning of unwanted catch unless the species was a target species. Age distributions for landings were estimated from market sampling data. Age distribution data for discards were collected from the Swedish on-board sampling programme. Length distributions for landings of cod (including BMS landings) and witch flounder were estimated from market sampling data. Length distribution data for other species provided were collected in the Swedish on-board sampling programme. Mean weight at length was, for all species except cod in the Baltic, derived from length-weight relationships based on data collected in surveys (IBTS/BITS) and based on several years data.

Effort was calculated using the fecR package.

Refusal rates were calculated as the industry refusal rates, i.e. proportion of vessels contacted that did not agree to take observers on-board. Non-response rates were calculated as the proportion of vessels contacted that did not provide an observer trip, for different reasons. Most common reasons for a failed trip were that the vessel was not fishing in the desired time period or other logistical reasons such as bad weather conditions. Success rate was calculated as 1-non-response. The rates were calculated on a quarterly basis since the sampling frames were constructed by quarter and based on the activity of the vessels in each quarter previous year. No refusal rates could be calculated for 2015. This was partly due to the problems to obtain observer trips, which lead to some ad-hoc sampling (see "Problems encountered"), and partly to inconsistent documentation of the procedure of contacting vessels.

| YEAR | SAMPLE_FRAME | REFUSAL_RATE | COVERAGE_RATE | NONRESPONSE_RATE | VESSELS_FLEET | TRIPS_FLEET | TRIPS_SAMPLED_ONBOARD | UNIQUE_VESSELS_SAMPLED | UNIQUE_VESSELS_CONTACTED | NOT_AVAILABLE | NO_CONTACT_DETAILS | NO_ANSWER | OBSERVER_DECLINED | INDUSTRY_DECLINED | SUCCESS_RATE | TOT_SELECTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2019 | OTB_CRU_32-69_0_0_Q1 | 0.00 | 0.10 | 0.50 | 21 | 215 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2019 | OTB_CRU_32-69_0_0_Q2 | 0.00 | 0.15 | 0.00 | 20 | 205 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_32-69_0_0_Q3 | 0.00 | 0.17 | 0.00 | 18 | 170 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_32-69_0_0_Q4 | 0.20 | 0.10 | 0.80 | 20 | 252 | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 1 | 0.20 | NK |
| 2019 | OTB_CRU_70-89_2_35_3an_Q1 | 0.00 | 0.04 | 0.00 | 48 | 811 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_70-89_2_35_3an_Q2 | 0.00 | 0.04 | 0.00 | 56 | 812 | 3 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_70-89_2_35_3an_Q3 | 0.00 | 0.02 | 0.67 | 60 | 1020 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0.33 | NK |
| 2019 | OTB_CRU_70-89_2_35_3an_Q4 | 0.00 | 0.05 | 0.00 | 55 | 742 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_70-89_2_35_3as_Q1 | 0.00 | 0.10 | 0.33 | 21 | 233 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2019 | OTB_CRU_70-89_2_35_3as_Q2 | 0.00 | 0.07 | 0.33 | 27 | 412 | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2019 | OTB_CRU_70-89_2_35_3as_Q3 | 0.00 | 0.07 | 0.00 | 29 | 371 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2019 | OTB_CRU_70-89_2_35_3as_Q4 | 0.00 | 0.09 | 0.80 | 22 | 203 | 2 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0.20 | NK |
| 2019 | OTB_DEF_24-26_Q1 | 0.00 | 0.15 | 0.50 | 13 | 117 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2019 | OTB_DEF_24-26_Q2 | 0.00 | 0.07 | 0.83 | 15 | 133 | 1 | 1 | 6 | 5 | 0 | 0 | 0 | 0 | 0.17 | NK |
| 2019 | OTB_MCD_>=90_3an_Q1 | 0.00 | 0.05 | 0.71 | 43 | 350 | 2 | 2 | 7 | 5 | 0 | 0 | 0 | 0 | 0.29 | NK |
| 2019 | OTB_MCD_>=90_3an_Q2 | 0.00 | 0.16 | 0.33 | 45 | 562 | 7 | 7 | 6 | 2 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2019 | OTB_MCD_>=90_3an_Q3 | 0.00 | 0.06 | 0.25 | 49 | 504 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2019 | OTB_MCD_>=90_3an_Q4 | 0.00 | 0.09 | 0.50 | 46 | 451 | 4 | 4 | 8 | 2 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2019 | OTB_MCD_>=90_3as_Q1 | 0.00 | 0.08 | 0.50 | 24 | 314 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2019 | OTB_MCD_>=90_3as_Q2 | 0.00 | 0.05 | 0.67 | 38 | 508 | 2 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0.33 | NK |
| 2019 | OTB_MCD_>=90_3as_Q3 | 0.00 | 0.12 | 0.25 | 34 | 570 | 4 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2019 | OTB_MCD_>=90_3as_Q4 | 0.00 | 0.14 | 0.20 | 28 | 431 | 4 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0.80 | NK |
| 2018 | OTB_CRU_32-69_0_0_Q1 | 0.00 | 0.11 | 0.33 | 18 | 193 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2018 | OTB_CRU_32-69_0_0_Q2 | 0.00 | 0.10 | 0.50 | 20 | 231 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2018 | OTB_CRU_32-69_0_0_Q3 | 0.00 | 0.23 | 0.25 | 13 | 177 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2018 | OTB_CRU_32-69_0_0_Q4 | 0.25 | 0.11 | 0.50 | 19 | 232 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 0.50 | NK |
| 2018 | OTB_CRU_32-69_2_22_Q1 | 0.00 | 0.10 | 0.00 | 30 | 405 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_32-69_2_22_Q2 | 0.00 | 0.08 | 0.00 | 37 | 563 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_32-69_2_22_Q3 | 0.00 | 0.09 | 0.00 | 33 | 466 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_32-69_2_22_Q4 | 0.00 | 0.09 | 0.00 | 34 | 382 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_70-89_2_35_3an_Q1 | 0.00 | 0.06 | 0.00 | 54 | 857 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_70-89_2_35_3an_Q2 | 0.00 | 0.04 | 0.60 | 48 | 739 | 2 | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 0.40 | NK |
| 2018 | OTB_CRU_70-89_2_35_3an_Q3 | 0.00 | 0.07 | 0.00 | 54 | 1064 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_CRU_70-89_2_35_3an_Q4 | 0.00 | 0.06 | 0.40 | 51 | 688 | 3 | 3 | 5 | 2 | 0 | 0 | 0 | 0 | 0.60 | NK |
| 2018 | OTB_CRU_70-89_2_35_3as_Q1 | 0.00 | 0.15 | 0.25 | 20 | 174 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2018 | OTB_CRU_70-89_2_35_3as_Q2 | 0.00 | 0.07 | 0.33 | 29 | 394 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2018 | OTB_CRU_70-89_2_35_3as_Q3 | 0.00 | 0.07 | 0.60 | 29 | 463 | 2 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0.40 | NK |
| 2018 | OTB_CRU_70-89_2_35_3as_Q4 | 0.00 | 0.08 | 0.33 | 25 | 229 | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2018 | OTB_DEF_24-26_Q1 | 0.20 | NK | 1.00 | 13 | 149 | NK | NK | 5 | 2 | 0 | 0 | 0 | 1 | 0.00 | NK |
| 2018 | OTB_DEF_24-26_Q2 | 0.00 | 0.25 | 0.33 | 16 | 98 | 4 | 4 | 6 | 2 | 0 | 0 | 0 | 0 | 0.67 | NK |
| 2018 | OTB_DEF_24-26_Q3 | 0.00 | 0.31 | 0.00 | 13 | 72 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_DEF_24-26_Q4 | 0.00 | 0.18 | 0.00 | 22 | 169 | 4 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_MCD_>=90_3an_Q1 | 0.17 | 0.06 | 0.50 | 53 | 451 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 1 | 0.50 | NK |
| 2018 | OTB_MCD_>=90_3an_Q2 | 0.00 | 0.06 | 0.50 | 48 | 510 | 4 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2018 | OTB_MCD_>=90_3an_Q3 | 0.00 | 0.04 | 0.67 | 45 | 406 | 2 | 2 | 6 | 2 | 0 | 0 | 0 | 0 | 0.33 | NK |
| 2018 | OTB_MCD_>=90_3an_Q4 | 0.00 | 0.06 | 0.50 | 48 | 534 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2018 | OTB_MCD_>=90_3as_Q1 | 0.00 | 0.13 | 0.25 | 24 | 267 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2018 | OTB_MCD_>=90_3as_Q2 | 0.00 | 0.13 | 0.17 | 38 | 423 | 5 | 5 | 6 | 1 | 0 | 0 | 0 | 0 | 0.83 | NK |
| 2018 | OTB_MCD_>=90_3as_Q3 | 0.00 | 0.10 | 0.00 | 30 | 511 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2018 | OTB_MCD_>=90_3as_Q4 | 0.00 | 0.06 | 0.50 | 31 | 422 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2017 | OTB_CRU_32-69_0_0_Q1 | 0.00 | 0.18 | 0.40 | 17 | 138 | 3 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0.60 | NK |
| 2017 | OTB_CRU_32-69_0_0_Q2 | 0.00 | 0.11 | 0.60 | 18 | 174 | 2 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0.40 | NK |
| 2017 | OTB_CRU_32-69_2_22_Q1 | 0.00 | 0.08 | 0.25 | 38 | 455 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2017 | OTB_CRU_32-69_2_22_Q2 | 0.00 | 0.13 | 0.00 | 40 | 601 | 5 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2017 | OTB_CRU_32-69_Q3 | 0.00 | 0.12 | 0.29 | 42 | 665 | 5 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0.71 | NK |
| 2017 | OTB_CRU_32-69_Q4 | 0.00 | 0.09 | 0.20 | 45 | 636 | 4 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0.80 | NK |
| 2017 | OTB_CRU_70-89_2_35_3an_Q1 | 0.00 | 0.06 | 0.00 | 51 | 622 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2017 | OTB_CRU_70-89_2_35_3an_Q2 | 0.00 | 0.04 | 0.50 | 51 | 754 | 3 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2017 | OTB_CRU_70-89_2_35_3an_Q3 | 0.00 | 0.06 | 0.00 | 68 | 1397 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2017 | OTB_CRU_70-89_2_35_3an_Q4 | 0.00 | 0.05 | 0.25 | 56 | 587 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2017 | OTB_CRU_70-89_2_35_3as_Q1 | 0.00 | 0.21 | 0.00 | 19 | 206 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2017 | OTB_CRU_70-89_2_35_3as_Q2 | 0.00 | 0.13 | 0.25 | 24 | 284 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0.75 | NK |
| 2017 | OTB_CRU_70-89_2_35_3as_Q3 | 0.00 | 0.06 | 0.50 | 31 | 438 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2017 | OTB_CRU_70-89_2_35_3as_Q4 | 0.00 | 0.08 | 0.50 | 25 | 178 | 2 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2017 | OTB_DEF_24-26_Q1 | 0.17 | 0.10 | 0.67 | 20 | 247 | 2 | 2 | 6 | 1 | 0 | 0 | 0 | 1 | 0.33 | NK |
| 2017 | OTB_DEF_24-26_Q2 | 0.20 | 0.09 | 0.60 | 23 | 212 | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 1 | 0.40 | NK |
| 2017 | OTB_DEF_24-26_Q3 | 0.20 | 0.08 | 0.80 | 12 | 148 | 1 | 1 | 5 | 3 | 0 | 0 | 0 | 1 | 0.20 | NK |
| 2017 | OTB_DEF_24-26_Q4 | 0.00 | 0.15 | 0.00 | 20 | 143 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.00 | NK |
| 2017 | OTB_MCD_>=90_3an_Q1 | 0.00 | 0.04 | 0.60 | 45 | 447 | 2 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0.40 | NK |
| 2017 | OTB_MCD_>=90_3an_Q2 | 0.00 | 0.08 | 0.43 | 49 | 447 | 4 | 4 | 7 | 2 | 0 | 0 | 0 | 0 | 0.57 | NK |
| 2017 | OTB_MCD_>=90_3an_Q3 | 0.20 | 0.06 | 0.40 | 51 | 485 | 3 | 3 | 5 | 1 | 0 | 0 | 0 | 1 | 0.60 | NK |
| 2017 | OTB_MCD_>=90_3an_Q4 | 0.00 | 0.04 | 0.71 | 48 | 325 | 2 | 2 | 7 | 4 | 0 | 0 | 0 | 0 | 0.29 | NK |
| 2017 | OTB_MCD_>=90_3as_Q1 | 0.00 | 0.13 | 0.20 | 30 | 313 | 4 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0.80 | NK |
| 2017 | OTB_MCD_>=90_3as_Q2 | 0.00 | 0.13 | 0.29 | 40 | 403 | 5 | 5 | 7 | 2 | 0 | 0 | 0 | 0 | 0.71 | NK |
| 2017 | OTB_MCD_>=90_3as_Q3 | 0.00 | 0.06 | 0.60 | 35 | 483 | 2 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0.40 | NK |
| 2017 | OTB_MCD_>=90_3as_Q4 | 0.00 | 0.07 | 0.50 | 28 | 326 | 2 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0.50 | NK |
| 2016 | OTB_CRU_32-69_0_0_Q1 | 0.08 | 0.12 | 0.75 | 25 | 221 | 3 | 3 | 12 | NK | 0 | NK | NK | 1 | 0.25 | NK |
| 2016 | OTB_CRU_32-69_0_0_Q2 | 0.00 | 0.12 | 0.25 | 25 | 235 | 3 | 3 | 4 | NK | 0 | NK | NK | 0 | 0.75 | NK |
| 2016 | OTB_CRU_32-69_0_0_Q3 | 0.00 | 0.17 | 0.70 | 18 | 160 | 3 | 3 | 10 | NK | 0 | NK | NK | 0 | 0.30 | NK |
| 2016 | OTB_CRU_32-69_2_22_Q1 | 0.00 | 0.12 | 0.38 | 41 | 477 | 5 | 5 | 8 | NK | 0 | NK | NK | 0 | 0.63 | NK |
| 2016 | OTB_CRU_32-69_2_22_Q2 | 0.00 | 0.08 | 0.63 | 40 | 627 | 3 | 3 | 8 | NK | 0 | NK | NK | 0 | 0.38 | NK |
| 2016 | OTB_CRU_32-69_2_22_Q3 | 0.00 | 0.11 | 0.73 | 36 | 531 | 4 | 4 | 11 | NK | 0 | NK | NK | 0 | 0.27 | NK |
| 2016 | OTB_CRU_32-69_Q4 | 0.00 | 0.11 | 0.38 | 44 | 626 | 5 | 5 | 8 | NK | 0 | NK | NK | 0 | 0.63 | NK |
| 2016 | OTB_CRU_70-89_2_35_3an_Q1 | 0.33 | 0.06 | 0.56 | 65 | 801 | 4 | 4 | 9 | NK | 0 | NK | NK | 3 | 0.44 | NK |
| 2016 | OTB_CRU_70-89_2_35_3an_Q2 | 0.33 | 0.05 | 0.67 | 64 | 906 | 4 | 3 | 9 | NK | 0 | NK | NK | 3 | 0.33 | NK |
| 2016 | OTB_CRU_70-89_2_35_3an_Q3 | 0.21 | 0.05 | 0.71 | 73 | 1230 | 4 | 4 | 14 | NK | 0 | NK | NK | 3 | 0.29 | NK |
| 2016 | OTB_CRU_70-89_2_35_3an_Q4 | 0.00 | 0.03 | 0.50 | 60 | 542 | 2 | 2 | 4 | NK | 0 | NK | NK | 0 | 0.50 | NK |
| 2016 | OTB_CRU_70-89_2_35_3as_Q1 | 0.13 | 0.12 | 0.63 | 25 | 273 | 3 | 3 | 8 | NK | 0 | NK | NK | 1 | 0.38 | NK |
| 2016 | OTB_CRU_70-89_2_35_3as_Q2 | 0.11 | 0.07 | 0.67 | 41 | 620 | 3 | 3 | 9 | NK | 0 | NK | NK | 1 | 0.33 | NK |
| 2016 | OTB_CRU_70-89_2_35_3as_Q3 | 0.09 | 0.07 | 0.73 | 44 | 699 | 4 | 3 | 11 | NK | 0 | NK | NK | 1 | 0.27 | NK |
| 2016 | OTB_CRU_70-89_2_35_3as_Q4 | 0.00 | 0.10 | 0.00 | 31 | 264 | 3 | 3 | 3 | NK | 0 | NK | NK | 0 | 1.00 | NK |
| 2016 | OTB_DEF_24-26_Q1 | 0.62 | NK | 1.00 | 22 | 303 | NK | NK | 13 | NK | 0 | NK | NK | 8 | 0.00 | NK |
| 2016 | OTB_DEF_24-26_Q2 | 0.56 | 0.16 | 0.81 | 19 | 274 | 3 | 3 | 16 | NK | 0 | NK | NK | 9 | 0.19 | NK |
| 2016 | OTB_DEF_24-26_Q3 | 0.57 | 0.12 | 0.86 | 17 | 160 | 3 | 2 | 14 | NK | 0 | NK | NK | 8 | 0.14 | NK |
| 2016 | OTB_DEF_24-26_Q4 | 0.00 | 0.21 | 0.50 | 19 | 227 | 5 | 4 | 8 | NK | 0 | NK | NK | 0 | 0.50 | NK |
| 2016 | OTB_MCD_>=90_3an_Q1 | 0.29 | 0.04 | 0.86 | 51 | 362 | 2 | 2 | 14 | NK | 0 | NK | NK | 4 | 0.14 | NK |
| 2016 | OTB_MCD_>=90_3an_Q2 | 0.45 | 0.04 | 0.82 | 50 | 292 | 2 | 2 | 11 | NK | 0 | NK | NK | 5 | 0.18 | NK |
| 2016 | OTB_MCD_>=90_3an_Q3 | 0.46 | 0.04 | 0.85 | 49 | 326 | 2 | 2 | 13 | NK | 0 | NK | NK | 6 | 0.15 | NK |
| 2016 | OTB_MCD_>=90_3an_Q4 | 0.00 | 0.04 | 0.60 | 52 | 435 | 2 | 2 | 5 | NK | 0 | NK | NK | 0 | 0.40 | NK |
| 2016 | OTB_MCD_>=90_3as_Q1 | 0.00 | 0.13 | 0.50 | 24 | 264 | 4 | 4 | 6 | NK | 0 | NK | NK | 0 | 0.50 | NK |
| 2016 | OTB_MCD_>=90_3as_Q2 | 0.00 | 0.07 | 0.71 | 29 | 215 | 2 | 2 | 7 | NK | 0 | NK | NK | 0 | 0.29 | NK |
| 2016 | OTB_MCD_>=90_3as_Q3 | 0.00 | NK | 1.00 | 30 | 299 | NK | NK | 8 | NK | 0 | NK | NK | 0 | 0.00 | NK |
| 2016 | OTB_MCD_>=90_3as_Q4 | 0.00 | 0.14 | 0.00 | 35 | 286 | 6 | 5 | 5 | NK | 0 | NK | NK | 0 | 1.00 | NK |

**Data availability**

Data was provided by the data call deadline.

**Coverage**

Landings data was provided for all species 2015-2019.

Discard estimates were provided for all species caught in fisheries sampled under the Swedish on-board sampling programme 2015-2019.

Age distribution data for landings was provided for cod, witch flounder, flounder, herring and sprat. Age distribution data for discards was provided for cod, witch flounder, flounder and plaice.

Length distribution data was provided for all fish species sampled under the Swedish on-board sampling programme that met the following criteria:

1) The species was encountered in at least two trips in the stratum

2) A minimum of 20 individuals were measured in the stratum

Effort was provided for all vessels in the Swedish fleet 2015-2019.

Refusal rate was provided for the main sampling frames for 2016-2019, while other parameters in Table B were provided for 2015-2019.

*General comments*

In the 2020 FDI data call BMS landings were requested as part of the "Landings" fraction and not "Unwanted catch" (as was the case previous year). BMS landings are rarely, or never, encountered in many sampling programmes and therefore often lack biological information. In order to still be able to provide biological information for landings >MCRS, even if the BMS fraction of the landings could not be sampled, landings >MCRS and BMS landings were given different "Domain landings" and biological information was only provided for the fraction >MCRS. BMS landings of cod could only be sampled for biological information for fisheries in the Baltic Sea since no BMS landings were available for sampling in other areas.

In 2015 the number of on-board sampling trips achieved in the Baltic Sea was not sufficient for estimation of unwanted catch due to very high refusals from the fishery (see "Problems encountered").

In the Swedish on-board sampling programme many species are encountered rarely and/or in very small numbers. No length distribution data has been provided for species for which the sampled number of individuals was considered insufficient for estimation (see above).

Some small landings in Table A have a corresponding value of zero for days at sea and fishing days in Table G (effort). This is a rounding issue; in those cases the vessel used more than one gear/metier/area in one day. The fishing day was then split between the different gears/areas. Since days at sea and fishing days had to be provided in whole days, sometimes they got rounded to zero.

In the last quarter of 2016 Sweden made it compulsory for commercial vessels to accept scientific on-board observers, which is reflected in the refusal rates in Table B.

*Comparison with Eurostat data*

Differences between landings data provided to Eurostat and landings data provided to FDI are likely due to the fact that different data sources have been used. Landings provided to Eurostat are retrieved from landing declarations, while landings data provided to FDI are retrieved from logbooks. The reason for logbooks being used for the FDI data call is that the Swedish logbooks contains much more detailed information that the landing declarations. Since Sweden has an extended logbook, information on catches, gears, geographical information, etc. is reported by fishing operation in the logbooks, which allows for a data compilation with as few assumptions as possible. However, in some cases the landings between the data sources differ, especially for pelagic species where the species composition of the catch is estimated in the logbook before landing. Some of the differences are however due to different FAO species codes being used. This is likely the case when a species is missing completely in one of the compared sources (For

example, anglerfish was submitted with the FAO code "ANF" (*Lophidae*) to Eurostat and "MON" (*Lophius piscatorius*) to FDI).

Differences between number of vessels provided to Eurostat and the FDI are explained by the fact that only active vessels are included in the data submitted to FDI.

### *Publication of confidential data*

For the submission of FDI data in 2020 no data was considered confidential in the Swedish data set.

### Problems encountered

### Problems related to data collection

In 2015 the Swedish on-board sampling programme failed to collect sufficient unwanted catch data in the Baltic Sea. When the landing obligation was introduced in the Baltic, fishermen refused to take observers and no Swedish discard data could be collected. To support sampling of on-board data, Swedish authorities introduced a new system in late 2016 which made it mandatory for vessels to accept observers.

No refusal rates could be calculated for 2015. This was partly due to the problems to obtain observer trips, which lead to some ad-hoc sampling, and partly to inconsistent documentation of the procedure of contacting vessels.

### Other comments if relevant

No other comments.

### A1.23 UNITED KINGDOM – TEXT FROM 2019 REPORT

### Methodology

### *FDF vessel methodology*

There was no consideration in the data call for how to denote those vessels that participated in the Fully Documented Fisheries (FDF) scheme. Discard estimates for FDF vessels are calculated separately from those vessels that would be in the same domain due to the difference in fishing behaviour. "_FDF" was appended to the end of the metier tag and in the domain names "_FDF" replaced the commercial category.

### *Domain name methodology*

### UK – Scotland

Target assemblage – As not all vessels within a sample domain will target the same assemblage a target assemblage code had to be entered that was most representative of that domain. Bottom trawlers using meshes >=100mm were recorded as targeting DEF, bottom trawlers using meshes 70-99mm were recorded as targeting CRU and mid-water trawlers were recorded as targeting SPF.

Mesh size range – Representative mesh size range codes were applied. The mesh size range codes requested in the data call do not fit with the mesh ranges of the sampled strata. As such, three representative codes were used: 32D69, 70D99 and 100DXX.

Commercial category – As mentioned, where the domain covered FDF vessels, FDF replaced the commercial category field.

### UK – England

The Domain name definition for landings and discards followed the way the estimations were performed. We tried to maintain the sampling programme stratification, however we post-stratified the data to account for differences, between ICES areas, and different fleets

### Discards methodology

**UK – Scotland -** Scottish discard estimates were not initially applied to Table A as the sampling domain data are at a more aggregated level than the level of aggregation requested in Table A. As such, a method of apportioning the estimates would be required. There are concerns that the data could then be misinterpreted as a result of the apportioning method. It is unclear how the data will be made available through the data dissemination tool. Clarification on how the data will be disseminated could allow the application of discard estimates to Table A following an agreed apportioning method. For now the discard data in Tables C and D can be linked to Table A using the domain names and species.

The discard estimates in Table C and D were later applied to Table A by linking with the domain discards and species fields. The estimates were apportioned between the relevant rows scaled to the landed weight.

In Table C, where there is a discard estimate, but no corresponding age data these records were still entered in Table C with NK provided for any of the age information fields.

**UK – England -** D were estimated from the UK- England on-board sampling programme conducted under the DCF. The estimation (raising) was carried out according with the strata described by "Domain discards". If no estimate could be achieved from sampling, or a stratum was not sampled, no discards was provided. The discards estimates achieved for each stratum ("Domain discards") were then partitioned to the much more disaggregated format in table A. The partitioning was done proportionally to the landings for the domain species combination.

For each trip, numbers-at-length were raised to the haul, based on an estimated proportion of the total catch volume sampled, then to the trip, based on the proportion of sampled hauls and fished hauls. The length based data was converted to biomass, using length-weight relationships for each species collected during various scientific trawl surveys (Cefas, unpubl. data). Trip-raised estimates were summed for sampled vessels in each stratum (i.e. Domain) and then raised to total fleet using a ratio between the reported total fleet landings of stock and reported landings of stock by the sampled vessels. When no landings are reported, used effort (number of at sea in domain) to raise the unwanted data.

### Length and age distributions

For the length and age distributions each UK country provided biological data individually based on its national data collections programme.

### UK- England

Age and length distributions for the discards were estimated based on the UK- England on-board sampling programme. Length data was collected for all fish species and commercial molluscs and crustacean species. For data submission, a minimum number of fish sampled by strata (Domain) is applied. Only domains with 20 or more fish measured were submitted. Age distributions for the discards were provided to the following species: cod, haddock, megrims, lemon sole, plaice, sole and whiting.

Age and length distributions for the landings were estimated based on the UK- England on-shore sampling programme. Length data was provided for all commercial fish species and commercial molluscs and crustacean species. For data submission, a minimum number of fish sampled by strata (Domain) is applied. Only domains with 20 or more fish measured were submitted. Age distributions for the landings were provided to the following species: brill, cod, haddock, herring, megrims, lemon sole, ling, pollack, plaice, seabass, sole, turbot and whiting.

### UK – Northern Ireland

For Cod, haddock and whiting Length frequencies from Northern Ireland (AFBI) fleet observer trips in specified fleet métiers are raised to the trip level, summed across trips during each year or by quarter, then raised to the annual number of trips per year in the NI fleet in 7.a to give raised annual LFDs for discards. An age–length key from discards trips is then applied to give annual discards by age class and metier.

For *Nephrops* in functional unit 15 the discards samples contain the heads of *Nephrops* tailed at-sea. Using a length–weight relationship, the live weight of *Nephrops* that would have been landed

as tails only is calculated from the carapace lengths of the discarded heads. Discard estimates of fish species is estimated by summing the discard weight, by species, for all samples in a quarter and expressed as a ratio of the summed live weight of *Nephrops* in the discard samples (i.e. those represented as heads only in the samples). The reported live weight of *Nephrops* landed as tails only is then used to estimate the quantity of cod or haddock discarded using the cod or haddock: ratio in the discard samples. The length frequency of cod in the discard samples is then raised to the fleet estimate. To provided international estimates this is raised to the by the ratio of Northern Irish *Nephrops* landings to international *Nephrops* landings. In years prior to the self-sampling scheme the ratio of numbers-at-age of discarded cod and haddock: *Nephrops* landings in the unsampled year is used to provide an estimate of discards. In years where sampling of other fisheries has occurred these are added to the international discard estimates of the *Nephrops* fleet.

### *Effort calculation methodology*

The effort measures for all administrations comprising the UK were calculated using the method agreed at the transversal variables workshops. Table J was provided at an UK level as this table comes from the economic data call which is assessed at the UK level rather than the administration level.

### *Refusal rate methodology*

Distinct sampling programmes are implemented by the administrations comprising the UK, as such separate refusal rate tables are submitted by each administration.

**UK - Scotland:** As best as was possible, the methodology used followed the guidance presented in the SGPIDS 2012 and 2013 reports. The SGPIDS reports did not necessarily cover the categorisation of all possible reasons for a trip not being carried out. Instead of having to reference a large report it would make more sense to provide a table of reasons and classifications. This would standardise the methodology and reduce inconsistency. One further comment concerns the use of this table, as it does not and cannot link directly to the biological sampling tables. Clarification as to why this table is needed and how it will be used is needed.

**UK- England**: As best as was possible, the methodology used followed the guidance presented in the SGPIDS 2012 and 2013 reports. Below we describe the calculations and rationale used for each variable in the table below:

| | |
|---|---|
| REFUSAL_RATE | Includes direct and 'indirect refusals'. A count of all the industry non-responses divided by a count of all the selections in the year. |
| COVERAGE_RATE | Does not include off draw samples. A count of all the successful selections that resulted in a trip divided by a count of all the selections in the year. |
| NONRESPONSE_RATE | A count of all non-responses, non-contacts and offdraw selections divided by a count of all the selections in the year. |
| VESSELS_FLEET | ~ |
| TRIPS_FLEET | ~ |
| TRIPS_SAMPLED_ONBOARD | Value includes off draw samples |
| UNIQUE_VESSEL_SAMPLED | ~ |
| VESSELS_CONTACTED | Each vessel is only counted once. This figure does not include multiple contacts of the same vessel. Each vessel is only counted once. As the drawlists are re-created quarterly the same vessel may be contacted more than once in a year. |
| NOT_AVAILABLE | Each vessel is only counted once. This does not include all occurrences of and attempts at the same vessel. This will |

| | |
|---|---|
| | also include any vessel selected in sequence that was not approached for safety concerns. |
| NO_CONTACT_DETAILS | Each vessel is only counted once. This does not include multiple visits to the same vessel. |
| NO_ANSWER | This is a sum of all the vessel contacts across all quarters where there was no answer - if recorded. |
| OBSERVER_DECLINED | This is a sum of all the vessel contacts across all quarters where the observer then declined. This does not include where the observer declined to make contact. |
| INDUSTRY_DECLINED | This is a sum of all the vessel contacts across all quarters where the observer received a flat no. This does not include contacts where the observer was put off or the call was 'inconclusive' – an indirect refusal. |
| SUCCESFUL_SAMPLE | Value includes off draw samples |
| TOT_SELECTIONS | Sum of all sequential selections. |

**Data availability**

For all the UK countries, all tables were submitted on time in the first instance. Tables have been updated between the statutory submission date and during the first two days of the meeting where significant errors were identified (e.g. inconsistent dates used to define quarters between landings and effort tables, inconsistent attribution of FDI markers to metiers in landings and effort tables).

**Coverage**

The UK gathers landings and effort data on two distinct databases, one Scottish and one for the rest of the UK (rUK). The data submitted here have their origins in the rUK database iFish2, which is synced with the Scottish database. The table below summarises the number of records uploaded for each data tables by the UK.

**Table 23.1:** Data totals for the UK by year

| Table/Variable | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|
| TABLE_A_discards | 6,665 | 7,595 | 7,108 | 6,704 |
| TABLE_A_totvallandg | 57,206 | 61,602 | 54,951 | 48,738 |
| TABLE_A_totwghtlandg | 57,206 | 61,602 | 54,951 | 48,738 |
| TABLE_B_refusal_rate | 5 | 5 | 16 | 16 |
| TABLE_C_age | 979 | 1,006 | 971 | 1,000 |
| TABLE_C_discards | 1,128 | 1,176 | 1,072 | 1,119 |
| TABLE_C_no_age | 979 | 1,006 | 971 | 1,000 |
| TABLE_C_no_samples | 1,128 | 1,176 | 1,072 | 1,119 |
| TABLE_D_discards | 12,043 | 14,144 | 12,982 | 14,362 |
| TABLE_D_length | 12,043 | 14,144 | 12,982 | 14,362 |
| TABLE_D_no_length | 12,043 | 14,144 | 12,982 | 14,362 |

| Table/Variable | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|
| TABLE_D_no_samples | 12,043 | 14,144 | 12,982 | 14,362 |
| TABLE_E_age | 5,852 | 6,052 | 5,849 | 5,310 |
| TABLE_E_no_age | 5,852 | 6,052 | 5,849 | 5,310 |
| TABLE_E_no_samples | 4,670 | 4,691 | 4,392 | 4,015 |
| TABLE_F_length | 28,005 | 29,091 | 27,776 | 24,914 |
| TABLE_F_no_length | 28,005 | 29,091 | 27,776 | 24,914 |
| TABLE_F_no_samples | 28,005 | 29,091 | 27,776 | 24,914 |
| TABLE_G_gthrsea | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_hrsea | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_kwhrsea | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totfishdays | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totgtdaysatsea | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totgtfishdays | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totkwdaysatsea | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totkwfishdays | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totseadays | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_G_totves | 6,090 | 6,283 | 6,141 | 5,646 |
| TABLE_H_totwghtlandg | 271,013 | 287,399 | 264,895 | 244,845 |
| TABLE_I_totfishdays | 17,856 | 18,655 | 18,326 | 17,288 |
| TABLE_J_avgage | 52 | 51 | 58 | 56 |
| TABLE_J_avgloa | 52 | 51 | 58 | 56 |
| TABLE_J_maxseadays | 47 | 46 | 53 | 51 |
| TABLE_J_totgt | 52 | 51 | 58 | 56 |
| TABLE_J_totkw | 52 | 51 | 58 | 56 |
| TABLE_J_tottrips | 52 | 51 | 58 | 56 |
| TABLE_J_totves | 52 | 51 | 58 | 56 |

**General comments**

UK laboratories have created a shared workspace to coordinate the FDI data call and have worked from the MMO's UK wide iFish2 database to ensure consistency. This has decreased the number of inconsistencies reported last year. More of the processes have been automated using R and SQL scripts to extract and process data into FDI format. This automation has reduced manual processing errors and made correcting processing errors more straightforward.

**Comparison with Eurostat data**

Overall the difference between Eurostat and FDI in 2015, 2016 and 2017 was relatively small (see table 19.3.1.2), with landed live weight being no more than 0.9% less on Eurostat than 2019's FDI submission. There was no consistent pattern to the differences by area or species. In 2015, the bulk of the differences were for shellfish landings, in 2016 it was demersal species (principally cod) and in 2017 a mix of shellfish and mackerel. Across all years the majority of differences were in FAO Area 27 (NE Atlantic), which is unsurprising given the pattern of activity of the UK fleet. It is important to note that the extracts of data for these two products were on different dates. Given the dynamic and live nature of our fisheries database exact matches between different snapshots in time are not to be expected. Quality control processes are undertaken regularly on UK databases and data are amended where errors are discovered. The fleet size differences were larger but still small overall varying between 1.7 and 1.8% greater vessel numbers on FDI than Eurostat (see table 19.3.1.3). Again the snapshot dates differ for these extracts. Additionally the methodology for Eurostat vessel counts differs to FDI. In Eurostat the number of registered vessels in the UK's commercial sea fishing fleet on a given date are counted. For FDI the number of vessels registered at any point in a given calendar year are counted. Given this difference in methodology the higher numbers for FDI than Eurostat is expected and unsurprising.

**Table 23.2:** Data totals (landings, tonnes) for the UK by year

| Year | FDI 2019 | Eurostat | % Dif (vs. Eurostat) |
|------|----------|----------|----------------------|
| 2015 | 708,191  | 701,769  | 0.9% |
| 2016 | 701,736  | 699,842  | 0.3% |
| 2017 | 724,860  | 722,691  | 0.3% |

**Table 23.3:** Data totals (vessels) for the UK by year

| Year | FDI 2019 | Eurostat | % Dif (vs. Eurostat) |
|------|----------|----------|----------------------|
| 2015 | 6,347 | 6,232 | 1.8% |
| 2016 | 6,347 | 6,235 | 1.8% |
| 2017 | 6,304 | 6,199 | 1.7% |

**Publication of confidential data**

The UK has not flagged any data in this call as confidential. We continue to monitor the content of data calls and will ensure any confidential data is flagged if requested in future data calls. The UK believes that a consistent definition of what constitutes confidential data should be provided as the benchmark used seems to differ significantly between member states.

The UK uses the principles set out in the GDPR regulation (EC 2016/679) to determine whether data are confidential in the sense that their disclosure would place personal data into the public domain in a way that violates the data subjects' rights under GDPR. As FDI data are aggregated and pseudo-anonymous we do not believe publication of this data (which lacks any vessel

identifiers), even where the record covers only one vessel's activities, would disclose personal data in a harmful or potentially harmful way. Moreover, we believe that the public interest and benefit of making such data on the use of shared natural resources public in a pseudo-anonymous way greatly outweighs any potential risks and that the processing and dissemination of such data is for a clearly defined and lawful purpose and furthers EU marine environmental sustainability and food security objectives.

**Problems encountered**

Consideration needs to be made as to how to present *Nephrops* discard information, as the currently requested level of aggregation in Table A means combining estimates from different functional units that are likely to have differing discard rates. The addition of a means to identify functional unit in Table A would allow *Nephrops* discard estimates to be presented by functional unit.

**Other comments if relevant**

No other comments.

**Annex 2. Data associated with anticipated exemptions (electronic)**

**Annex 3. Percentage of fish above and below MCRS (electronic)**

**Annex 4. Maps of effort and landings (electronic)**

Available at https://stecf.jrc.ec.europa.eu/reports/fdi

## STECF

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

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