European Commission

# Scientific Technical and Economic Committee for Fisheries (STECF)
# –
# Fisheries Dependent Information FDI (STECF 23-10)

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2024

Joint Research Centre

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**Abstract**

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. This report on fisheries dependent information has been reviewed by STECF during the 2023 winter plenary meeting.

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**SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) –
Fishery Dependent Information (STECF-23-10)**


**Request to the STECF**


STECF is requested to review the report of the STECF Expert Working Group meeting.

STECF is requested to evaluate the findings of the STECF Expert Working Group meeting and make any appropriate comments and recommendations, in particular to one of the EWG conclusions on a possible 3-day online workshop to further develop an established Shiny application on discard trends using FDI data.


**Summary of the information provided to STECF**

STECF was provided with the draft report of the EWG, including 3 electronic annexes (Annex 3 – Exemptions coding tables, Annex 4 – Exemptions data extract and Annex 5 - Maps of effort and landings). A presentation of the outcomes was made by the EWG chairs to PLEN 23-03.


**STECF comments**

The EWG 23-10 met from 11 to 15 September 2023 in Ispra, Italy.

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

STECF notes that, with the exception of two Member States, all data was submitted for the requested tables by the legal deadline of the data call. One Member State submitted the biological tables (C-F), and table K (which provides information on discard estimates which do not have associated biological data) after the legal deadline, while the other Member State did not submit Table A (detailed catch table). Some Member States re-uploaded data before the operational deadline (that, according to the data handling procedures for STECF Expert Working Groups, is set at two calendar weeks before the commencement of the STECF EWG), and also during the EWG.

STECF observes that for the 2023 data call, Member States were asked to resubmit the full time series with the requested changes for the EEZ and métier codes. This led to higher number of re-uploads during the EWG. STECF also observes that final FDI data was only available for analyses on the Thursday morning of the EWG meeting.

STECF observes that file format and code consistency are checked during the upload process, while additional quality checks were carried out after the upload of the data and were performed and visualised with Qlik. STECF notes that 32 quality or coverage issues with low or medium severity were identified and registered in the DTMT. One issue of missing data was evaluated as of high severity. Eight issues were indicated as recurrent.


TOR 2: Provide landings and discards data for exemptions in discard plans.

STECF observes that the EWG was asked to provide landings and discard data for exemptions to the landing obligation included in discard plans. This was completed based upon the previous work and methods established in STECF EWG 20-10, STECF EWG 21-12, STECF EWG 22-10 and the output of ad hoc contract 2336.

STECF further observes that the EWG report clearly identifies the shortcomings that should be considered in interpreting the results. STECF acknowledges that the coverage expressed

as a percentage of landings with discards is provided in the data tables, which indicates the accuracy of the discard estimates reported as well as any 'fill-ins'.

TOR 3 Review dissemination formats and produce dissemination tables and maps of spatial effort and landings by c-squares

STECF acknowledges that the EWG agreed on using the same format applied in 2022 for the dissemination of the data.

STECF also observes that due to time and resources constraints, EWG 23-10 was not able to fully consider the guidance for interpretation of the data provided in Table B (Observer refusal rates). STECF notes that for this reason, the EWG concluded, for this year not to disseminate Table B.  STECF accepts this was appropriate, given that work is needed to provide guidance to the end users before it can be properly disseminated.  However, STECF notes that this is a valuable table, and every effort should be made to disseminate this to the public in future EWG reports.

STECF notes that the EWG was not in the position to analyse the impact of confidentiality rules on coverage of disseminated data in the same way as during the methodological meeting (EWG 23-05). This was because the most recent dataset disseminated on the STECF website was available only by the end of the EWG. However, STECF notes that an in-depth analysis of the confidentiality reported by Member States based on the data submitted to FDI is available in the report. From this analysis it seems that the average proportion of confidential landings by species, averaged by fishing technique or by fishing zone remained relatively stable in the period 2013-2022.

TOR 4: Discuss data submission results following recent changes in the data call and definitions, assess feasibility to further extend time series.

STECF notes that for the 2023 FDI data call, Member States were requested to resubmit the full time series with the new métier codes that have been agreed by RCGs and with EEZ indicators that included a code to indicate if the fishery took place in UK waters. The change in codes affects tables A, G, H and I. STECF observes that 3 Member States did not resubmit the full time series and the old metier codes remain in the database. STECF observes that Member States should make every effort to resubmit time series data next year during the FDI data call. STECF considers that the request for Member States to resubmit data according to the new métier codes should be included in the official letter for next year's FDI data call.

STECF observes that the EWG analysed the inconsistencies between the new métier definitions and the GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields and concluded that in most cases the new metier codes reported are consistent. In some cases, where inconsistencies were identified there are good explanations for these inconsistencies, while in other cases any inconsistencies related to coding issues. STECF agrees that all the inconsistencies should be explained and described in the national chapters.

STECF notes that the EWG discussed the feasibility of extending the period of data requested in the FDI data calls to years prior to 2013. However, the EWG concluded that it would not be reasonable for all Member States to extend the full historical data set beyond 2013. The EWG observed that the quality of the data before 2013 for some would be too low to be considered as a reliable dataset or because it would not be possible to provide those data at the level of aggregation required by the FDI data call (see Table 4.1 of STECF EWG 22-10 report).

TOR 5: Follow up on the comparability between the data collected in the FDI database and the data provided to the AER

STECF acknowledges that the EWG analysed the consistency of the fishing capacity and activity data between the AER and FDI data sets. The data analysis showed an improvement compared with the analysis performed in 2021 (STECF-21-12) in data codification between both data calls as well as the consistency between both data sets with the same information. However, some discrepancies between the data sets remain. STECF notes that most of these data inconsistencies identified are due to: timing in data exports to answer the data call, possibility to report to FDI confidential data (that is not available in AER) and clustering of fleet segments used in the AER data set.

STECF observes that the EWG was not able to follow up on DTMT issues reported in STECF EWG-21-12 report in relation to AER and FDI comparison due to time constrains. Further, STECF notes that the comparison exercise cannot be easily completed by other EWGs because it requires access to the FDI and AER analysis conducted during STECF EWG 23-10 and knowledge of the data formats.

STECF notes that the EWG reviewed the results of the RCG ISSG survey comparing the definitions within the data submitted to FDI and AER data calls. STECF observes that this survey is a preliminary overview provided to understand the consistency between FDI and AER data calls submitted by Member States and to show the feasibility of linking both data calls.

STECF notes that the EWG also reviewed the analysis of the definitions of AER and FDI data calls completed by RCG ISSG, providing useful comments and recommendations for future data calls.

TOR 6: Provide recommendations on possible future use of the 'Shiny app' on overall trends in discard patterns using the FDI data.

STECF observes that the EWG considered the 'Shiny App' as a powerful and useful visualisation tool. However, STECF observes that the EWG expressed some concerns related to different issues such as the utilization of classic FDI data at the outset of the time series and uncertainty about the methodology used to calculate discard rates and LO exemptions. STECF observes that EWG considered the need for a more thorough examination of the methodology and the data quality.

STECF observes that EWG suggested to hold a 3-day online workshop to review the methodology applied, evaluate the possibility of an annual update by the STECF EWG and provide suggestions on data preparation, aggregation and visualisation for a potential future integration of the Shiny App to the advisory process.


**STECF conclusions**

STECF concludes that the EWG addressed most of the ToRs appropriately in the given time frame and endorses the report and the related annexes. Two TORs were not addressed due to time constraints. One related to the preparation of guidance for interpretation of the data provided in table B (refusal rate) and the other to DTMT issues reported in STECF EWG 21-12 relating to a comparison of FDI and AER data sets.

STECF concludes that table B should not be disseminated until the guidance for interpreting the data provided in the table is made available. STECF concludes that the preparation of this guidance should be included in the TORs for the next FDI EWG.

STECF concludes that the comparison exercise of AER and FDI data sets cannot be easily implemented by other EWGs because it requires access to the FDI and AER analysis conducted during STECF EWG 23-10 and knowledge of the data formats. Therefore, STECF concludes to include this as a TOR for next year's FDI EWG.

STECF concludes that data for the years 2011 and 2012 should only be requested on a voluntary basis or next year's data call. STECF concludes that information on the BSA subregion should not be requested in FDI.

STECF concludes that the analysis of the impact of confidentiality rules on coverage of data, cannot be carried out during the EWG when data to be disseminated are not yet available. STECF concludes that the TOR for future FDI EWGs should request to assess the impact of confidentiality rules for the data disseminated publicly in the previous year and not in the current year.

STECF concludes that the analysis of the comparability between the data collected in the FDI database and the data provided to the AER should inform the dedicated RCG workshop of economists, biologists and data scientists that will discuss collaboration, definitions and data calls consistency (see TOR 6.2. Recommendations of the Regional Coordination Groups, Recommendation 15. Work towards combining FDI and AER data calls).

STECF concludes that an ad hoc contract on the possible future use of the 'Shiny app' on overall trends in discard patterns using the FDI data, should i) review the technical documentation (including scripts, design process, manuals), ii) analyse the methodology to deliver discard rates and discards for exemptions.

STECF concludes that the results of the ad hoc contract should be reviewed by STECF and, on the basis of this revision, a workshop could be organized by MARE involving the developers of the app and FDI experts. The workshop could then evaluate the feasibility of an annual update of the 'Shiny app' with FDI data.

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# REPORT TO THE STECF

# EXPERT WORKING GROUP ON
# Fisheries Dependent Information FDI
# (EWG-23-10)

## 11-15 September 2023

# 1 INTRODUCTION

The STECF EWG 23-10 met during 11 – 15 September 2023 in Ispra, Italy. The meeting opened at 9:30 on 11 September and was adjourned at 16.00 on 15 September 2023. Working conditions provided were considered good.

## 1.1 Terms of Reference for EWG-23-10

DG MARE focal person: Evelien Ranshuysen (D3), Paulo Vasconcelos, Agnieszka Sadowska (C5), Ilaria Vielmini, Christoph Priebe (C1), Leonie O'dowd (C3)

JRC focal person: Zeynep Hekim

Chairs: Arina Motova-Surmava and Antonella Zanzi

## Background information

EWG 23-10 Evaluation of Fisheries Dependent Information for European Fleets to review the data transmitted by Member States under the 2023 FDI data call to judge:

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

2   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.

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.

1.1   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 listed in compliance to the DTMT Guidance.

1.2   Review outputs of ad hoc contract 2 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 delegated regulation specifying the details of implementation of the landing obligation for 2023.

1.3   Review data quality checks and produce National methodological chapters, update National methodological chapters in line with the recommendations of the EWG 23-05 FDI Methodology.

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

Based upon the previous work and method established in STECF EWG 20-10, STECF EWG 21-12, STECF EWG 22-10 and the output of ad hoc contract 2:

2.1 STECF is asked to provide figures for landings and discards in 2022, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the delegated regulations specifying details of implementation of the landing obligation for 2024.

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 delegated regulations specifying details of implementation of the landing obligation for 2024.

2.3 Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards[1]) for 2022. Only if this is possible and sufficient data is available for such estimation.

3 Review dissemination formats and produce dissemination tables and maps of spatial effort and landings by c-squares.

3.1 Discuss if there are any changes needed in the data dissemination format agreed in 2022.

3.2 Discuss and agree guidance around how Table B should be interpreted, and if it should be disseminated.

3.3 Run the script used during the EWG 23-05 on FDI Methodology to check impact of confidentiality rules on coverage of disseminated data.

3.4 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 Seas; Distant waters

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 trap.

4 Discuss data submission results following recent changes in the data call and definitions, assess feasibility to further extend time series.

4.1 Check consistency between new metier definitions and GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields.

4.2 Discuss results of the re-submission of the time series.

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[1] 'Discards' are defined here as the fish/crustaceans caught and thrown overboard back into the sea

5   Follow up on the comparability between the data collected in the FDI database and the data provided to the AER

   5.1   Repeat analysis from FDI 2021 on newly submitted AER and FDI time series (2017-2021):

- check if the coding of fleet segments is consistent on national level between both data submissions;

- compare capacity, landings and effort data sets between AER and FDI data calls.

   5.2   Follow up on DTMT issues reported in STECF EWG-21-12 report in relation to AER and FDI comparison

   5.3   Review the results of RCG ISSG survey related to comparison of the definitions within the data submitted to FDI and AER data calls

   5.4   Evaluate any suggestions for changes in data calls provided by the RCG ISSG. If there are any inputs from the ISSG, these should be considered

6   Provide recommendations on possible future use of the 'Shiny app' on overall trends in discard patterns using the FDI data.

The STECF EWG is invited to provide recommendations and feedback to the external contractors who will be present during the EWG to present the Shiny app with updated time series of FDI data (2020 & 2021) – or a very advanced prototype – to the EWG members, more specifically to conclude if it would be possible to annually update the Shiny app by the STECF EWG. The Shiny app is under development and not publicly available yet. Any dissemination issues can already be signalled by the STECF EWG.

## 2 DATA PROVISION AND CHECKS

## 2.1    DCF FDI data call 2023

The DCF Fisheries Dependent Information (FDI) data call 2023 opened on 1$^{st}$ June 2023 with the legal deadline on 30$^{th}$ June 2023 and the operational deadline on 28$^{th}$ August 2023.

The 2023 FDI data call was consistent with the comments and suggestions from the EWG 22-10 (see the STECF report of the EWG 22-10, chapter 4) where the EWG agreed on calling the data with the same table format used in the 2022 data call. The following changes proposed during the EWG 22-10 were implemented in the 2023 data call:

- Tables for spatial data: to rename the variables rectangle_lon and rectangle_lat present in the spatial data tables H and I, respectively to longitude and latitude. Data for these 2 variables should be reported using two decimal figures.
- Time period covered by the data call: To introduce the new metier codes and the information about in the EEZ indicator variable, for the whole time period with the addition of the data for year 2022.

The format of this 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,

11 tables were described, among which table K was optional and tables C, D, E, and F were not requested for the Mediterranean and Black Sea regions (GFCM GSAs).

Data were requested for the year 2022. Member States were also requested to resubmit the 2013-2021 with the EEZ indicator code that includes UK and the new metier codes. Resubmission of previous years' data was not mandatory for Member States that were not affected by the change of those codes.

## Data confidentiality declaration

To protect confidential data used during the EWG 23-10, the experts signed the following declaration at the beginning of the meeting.

*In order to answer the term of reference of the EWG 23-11, the Fisheries Dependent Information (FDI) and Annual Economic Report (AER) data provided by Member States in the context of the DCF FDI and AER 2023 data calls will be used. These 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 23-11 that the dataset used during the EWG contains some confidential data and that access to and use of the datasets is only permitted in the EWG context. Consequently, all DCF FDI and AER datasets shall be removed from 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 23-11 report.*

## 2.2 Data checks on uploads and data evaluations before EWG 23-10

## Timeliness and coverage

All Member States submitted data for all the requested tables by the legal deadline of the data call except two Member States, which one submitted the biological tables and table K after the legal deadline and the other did not submit Table A at all (see Figure 2.2.1).

**Figure 2.2.1:** 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 and tables C, D, E and F are not requested for Mediterranean and Black Sea countries).

| Country | TABLE_A | TABLE_B | TABLE_C | TABLE_D | TABLE_E | TABLE_F | TABLE_G | TABLE_H | TABLE_I | TABLE_J | TABLE_K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | 23/06/2023 | 26/06/2023 | 23/06/2023 | 23/06/2023 | 23/06/2023 | 23/06/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 |
| Bulgaria | 30/06/2023 | 30/06/2023 | - | - | - | - | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | - |
| Croatia | 30/06/2023 | 30/06/2023 | - | - | - | - | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | - |
| Cyprus | 30/06/2023 | 30/06/2023 | - | - | - | - | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | - |
| Denmark | 29/06/2023 | 29/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 30/06/2023 |
| Estonia | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | - |
| Finland | 08/06/2023 | 14/06/2023 | 12/06/2023 | 12/06/2023 | 20/06/2023 | 20/06/2023 | 08/06/2023 | 08/06/2023 | 08/06/2023 | 08/06/2023 | - |
| France | 29/06/2023 | 29/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 27/06/2023 | 28/06/2023 | 27/06/2023 | 27/06/2023 | - |
| Germany | 21/06/2023 | 26/06/2023 | 21/06/2023 | 21/06/2023 | 21/06/2023 | 21/06/2023 | 12/06/2023 | 12/06/2023 | 12/06/2023 | 15/06/2023 | - |
| Greece | 30/06/2023 | 29/06/2023 | - | - | - | - | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | - |
| Ireland | 02/06/2023 | 09/06/2023 | 28/08/2023 | 28/08/2023 | 28/08/2023 | 28/08/2023 | 02/06/2023 | 02/06/2023 | 02/06/2023 | 02/06/2023 | - |
| Italy | 30/06/2023 | 30/06/2023 | - | - | - | - | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | - |
| Latvia | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | 30/06/2023 | - |
| Lithuania | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | 16/06/2023 | - |
| Malta | - | - | - | - | - | - | 28/06/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 | - |
| Netherlar | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 12/09/2023 |
| Poland | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| Portugal | 28/06/2023 | 29/06/2023 | 17/07/2023 | 17/07/2023 | 17/07/2023 | 17/07/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 | 28/06/2023 | 19/07/2023 |
| Romania | 07/06/2023 | 07/06/2023 | - | - | - | - | 07/06/2023 | 07/06/2023 | 07/06/2023 | 07/06/2023 | - |
| Slovenia | 01/06/2023 | 01/06/2023 | - | - | - | - | 01/06/2023 | 01/06/2023 | 01/06/2023 | 01/06/2023 | - |
| Spain | 27/06/2023 | 27/06/2023 | 27/06/2023 | 27/06/2023 | 27/06/2023 | 27/06/2023 | 26/06/2023 | 27/06/2023 | 26/06/2023 | 26/06/2023 | - |
| Sweden | 26/06/2023 | 26/06/2023 | 26/06/2023 | 26/06/2023 | 26/06/2023 | 26/06/2023 | 30/06/2023 | 26/06/2023 | 30/06/2023 | 26/06/2023 | - |

As shown in Figure 2.2.2, some Member States re-uploaded data before the operational deadline and some Member States re-uploaded data also during the EWG.

**Figure 2.2.2:** Uploading progress: the graph shows the number of datasets (i.e., files Excel) uploaded over the time during the FDI data call and the EWG 23-10.
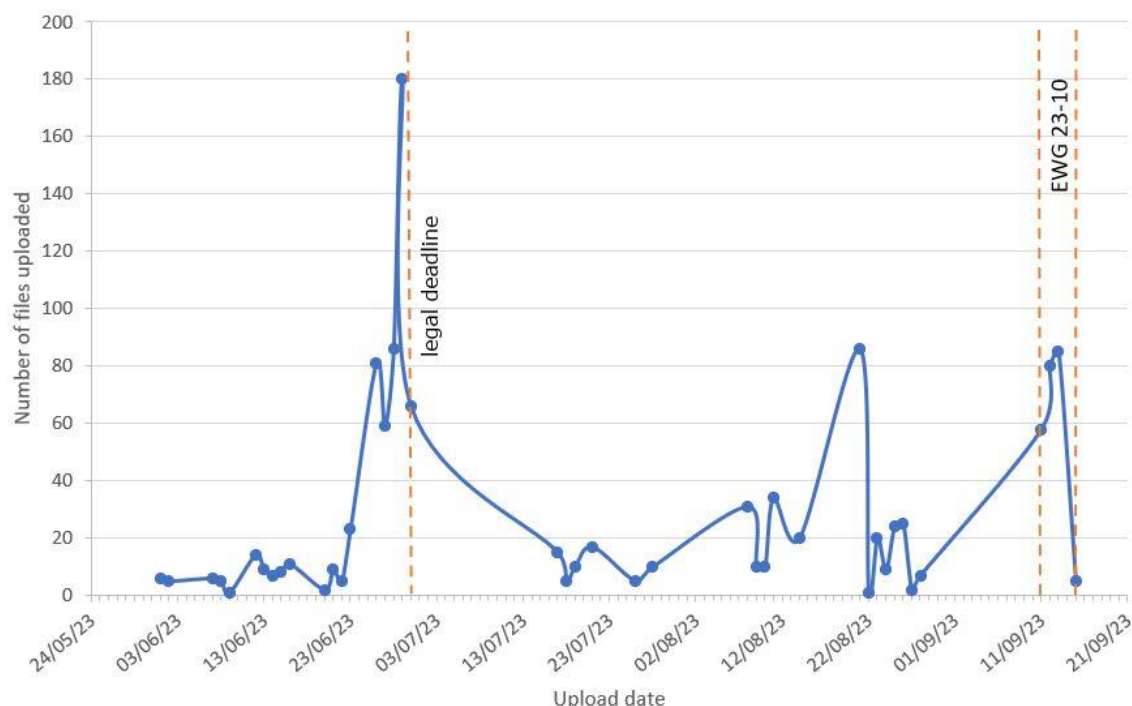


The coverage of discards data in table A is generally low for all the years present in the FDI dataset. Considering the landings for 2022: from a total of 3,587,823tonnes landed, for 402,467 tonnes (11%) of landings the corresponding discards was reported greater than 0; discards was reported equal to 0 for 449,291 tonnes (12.5%) of landings; and discards is not known or sampled for 2,736,065 tonnes (76%) of landings. In Table 2.2.1 the coverage of discards is reported also for the other years; it can be noted that in 2020, due to COVID pandemic, the coverage of discards deteriorated and that improved in 2021 and 2022.

**Table 2.2.1:** Discards coverage in table A (the comma is used as thousands separator).

| Year | Landings with discards>0 | | Landings with discards=0 | | Landings with discards=NK | | Total Landings |
|---|---|---|---|---|---|---|---|
| | tonnes | % of total Landings | tonnes | % of total Landings | tonnes | % of total Landings | tonnes |
| **2013** | 634,736 | 15.49 | 456,433 | 11.14 | 3,006,495 | 73.37 | 4,097,664 |
| **2014** | 852,474 | 16.20 | 438,582 | 8.34 | 3,969,823 | 75.46 | 5,260,879 |
| **2015** | 802,837 | 15.34 | 549,593 | 10.50 | 3,882,397 | 74.16 | 5,234,827 |
| **2016** | 809,847 | 15.73 | 594,897 | 11.55 | 3,744,345 | 72.72 | 5,149,090 |
| **2017** | 635,926 | 11.61 | 748,903 | 13.68 | 4,091,075 | 74.71 | 5,475,904 |
| **2018** | 689,296 | 12.86 | 756,229 | 14.11 | 3,913,618 | 73.03 | 5,359,142 |
| **2019** | 621,555 | 12.95 | 670,346 | 13.96 | 3,509,329 | 73.09 | 4,801,231 |
| **2020** | 443371 | 9.61 | 451,630 | 9.79 | 3,717,194 | 80.59 | 4,612,194 |

| Year | Landings with discards>0 | | Landings with discards=0 | | Landings with discards=NK | | Total Landings |
|---|---|---|---|---|---|---|---|
| | tonnes | % of total Landings | tonnes | % of total Landings | tonnes | % of total Landings | tonnes |
| **2021\*** | 396,612 | 10.79 | 409,352 | 11.14 | 2,868,074 | 78.06 | 3,674,038 |
| **2022** | 402,467 | 11.22 | 449,291 | 12.52 | 2,736,065 | 76.26 | 3,587,823 |

\* no UK data provided starting 2021 reference year.

The comparison of the coverage of table A (catch summary) against table H (landings by rectangle) provided consistent results for most of the countries (except for Estonia, Greece, Ireland, Italy and Romania). Table 2.2.2 shows the comparison of the total weight of landings provided for 2021 in tables A and H.

**Table 2.2.2:** Coverage comparison of weight of landings provided by Member States for table A (catch summary) and for table H (landings by rectangle) for the year 2022 (the comma is used as thousands separator).

| Country code | Landings from table A (tonnes) | Landings from table H (tonnes) | Difference between the tables (tonnes) | Difference % | Year |
|---|---|---|---|---|---|
| BEL | 18,899 | 18,204 | 696 | 3.68 | 2022 |
| BGR | 5,546 | 5,546 | 0 | 0 | 2022 |
| CYP | 1,270 | 1,270 | 0 | 0 | 2022 |
| DEU | 162,283 | 161,715 | 567 | 0.35 | 2022 |
| DNK | 460,501 | 452,285 | 8,216 | 1.78 | 2022 |
| ESP | 813,331 | 795,955 | 17,375 | 2.14 | 2022 |
| EST | 71,167 | 55,485 | 15,682 | 22.03 | 2022 |
| FIN | 86,665 | 86,665 | 0 | 0 | 2022 |
| FRA | 545,276 | 529,031 | 16,245 | 2.98 | 2022 |
| GRC | 55,350 | 42,204 | 13,146 | 23.75 | 2022 |
| HRV | 63,370 | 63,272 | 98 | 0.16 | 2022 |
| IRL | 210,637 | 168,727 | 41,910 | 19.90 | 2022 |
| ITA | 132,395 | 22,665 | 109,730 | 82.88 | 2022 |
| LTU | 107,048 | 107,048 | 0 | 0 | 2022 |
| LVA | 102,271 | 102,271 | 0 | 0 | 2022 |
| MLT | - | 2,793 | -2793 | - | 2022 |
| NLD | 299,769 | 299,300 | 470 | 0.16 | 2022 |
| POL | 166,115 | 166,115 | 0 | 0 | 2022 |
| PRT | 142,938 | 135,986 | 6953 | 4.86 | 2022 |
| ROU | 3,176 | 1,834 | 1,341 | 42.24 | 2022 |
| SVN | 104 | 104 | 0 | 0 | 2022 |
| SWE | 139,711 | 139,711 | 0 | 0 | 2022 |

Regarding effort, comparison of the coverage of table G (effort summary) against table I (effort by rectangle) provided consistent results for most of the countries (except Finland, Ireland, Italy and Romania); in Table 2.2.3 the comparison of the totfishdays variable provided for 2022 in the two tables is shown.

**Table 2.2.3:** Coverage comparison of fish days provided by Member States for table G (effort summary) and for table I (effort by rectangle) for the year 2022 (the comma is used as thousands separator).

| Country code | Fish days from table G | Fish days from table I | Difference between the tables (fish days) | Difference % | Year |
|---|---|---|---|---|---|
| BEL | 13,188 | 12,815 | 373 | 2.83 | 2022 |

| Country code | Fish days from table G | Fish days from table I | Difference between the tables (fish days) | Difference % | Year |
|---|---|---|---|---|---|
| BGR | 17,460 | 17,460 | 0 | 0 | 2022 |
| CYP | 150,931 | 150,931 | 0 | 0 | 2022 |
| DEU | 76,758 | 76,928 | -170 | -0.22 | 2022 |
| DNK | 63,127 | 62,773 | 354 | 0.56 | 2022 |
| ESP | 841,484 | 762,884 | 78,599 | 9.34 | 2022 |
| EST | 59,732 | 58,708 | 1,024 | 1.71 | 2022 |
| FIN | 64,607 | 74,912 | -10,305 | -15.95 | 2022 |
| FRA | 533,186 | 525,616 | 7,570 | 1.42 | 2022 |
| GRC | 1,390,197 | 1,285,647 | 104,550 | 7.52 | 2022 |
| HRV | 303,727 | 309,669 | -5,942 | -1.96 | 2022 |
| IRL | 63,046 | 36,097 | 2,6949 | 42.75 | 2022 |
| ITA | 1,114,135 | 52,136 | 1,061,999 | 95.32 | 2022 |
| LTU | 4,338 | 4,334 | 4 | 0.10 | 2022 |
| LVA | 11,668 | 11,668 | 0 | 0 | 2022 |
| MLT | 22,622 | 22,627 | -5 | -0.02 | 2022 |
| NLD | 46,811 | 43,147 | 3,664 | 7.83 | 2022 |
| POL | 59,432 | 59,432 | 0 | 0 | 2022 |
| PRT | 251,203 | 237,672 | 13,531 | 5.39 | 2022 |
| ROU | 3,847 | 1,102 | 2,745 | 71.35 | 2022 |
| SVN | 6,477 | 6,477 | 0 | 0 | 2022 |
| SWE | 48,621 | 48,558 | 63 | 0.13 | 2022 |

### *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 referred to the various appendixes of the data call and the type of the data entered (numeric or text).

In particular, the upload tool verified the format of the provided files 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, *Nephrops* 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; in tables H and I, the format of the the geographical coordinates (latitude and longitue) and of the c-square was checked, and the consistency of the spatial information was verified.

In the upload tool, the following checks 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, JRC carried out some quality checks:

- To verify the consistency between the data submitted and the specification of the data call
- To verify the consistency between the data submitted in the different tables of the FDI data call
- To compare data consistency among years
- To cross checks data with another data source (EUROSTAT data)

In more detail, the following checks were performed and visualized with Qlik.

General checks:

- 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.
- 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 total weight landings and total value landings: totwghtlandg>0 and totvallandg=0 in table A.
- Comparison of total weight landings and discards values in Table A. Cases where discards > totwghtlandg is flagged.
- Comparison of Nephrops sub-region values from tables A, C, D, E and F with identification of the cases where the Nephrops sub-region values are different among the tables are shown.
- Comparison of discard values reported between Tables A, C and D.
- Comparison of total weight landings values reported between Tables A, E and F.
- Comparison of total weight landings values reported between Tables A, C and D.
- Comparison between discards [tonnes] and the sum of products [tonnes] = no_age [number in thousand]*mean_weight [kg] (Table C).
- Comparison between totwghtlandg [tonnes] and the sum of products [tonnes] = no_age [number in thousand]*mean_weight [kg] (Table E).
- 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 checked against the total weight landings value in tables C and D.
- 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 checked against the total weight landings value in tables E and F.
- Comparison of any given metric over the time series (2014-2020).
- Refusal rate table B. Rows with no information, accept for year and sampling frame provided, were identified.
- 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.

Spatial checks:

- 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.
- Comparison between spatial weight landings in table H and spatial effort in table I: totwghtlandg>0 in table H and totfishdays not present in tabel I.
- In tables H and I, identification of incorrect combination of NA values in the spatial columns and identification of data without any sub-region assigned.
- In table H and I, verification of the compatibility of the geographical coordinates (latitude and longitude) with the value provided for the rectangle type.
- In table H and I, verification of the compatibility of the geographical coordinates (latitude and longitude) and C-square.

Among the issues highlighted by the data checks implemented at JRC, the most relevant were the following:

- 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).
- In tables H and I, incompatibility of the geographical coordinates (latitude and longitude) with the value provided for the rectangle type.

### *Cross check with EUROSTAT data*

The purpose of the cross check with an external data source was to verify the completeness of the submitted data sets. EUROSTAT datasets have been downloaded from:

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

Results of all checks were made available to national correspondents (with access credentials that restricted them to seeing information about their own country only) and the EWG 23-10 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 listed in compliance to the DTMT Guidance*

As in the previous years' FDI data submission, the data provided by Member States in response to the FDI data call has been incorporated into the FDI database. The database is hosted by the JRC. The database represents the most comprehensive fishery-dependent data set currently available for the EU fishing fleet for the years 2013-2022. A quality control process is applied to the dataset. To conduct the data checks during the EWG 23 10, FDI experts used access to the FDI dashboards via personal EUlogin accounts.  Any quality issues that have been identified are reviewed by the EWG and documented in the national chapters of this report (Annex 1). In accordance with the DTMT guidance, unresolved Member State specific issues are entered into the DTMT. During the EWG meeting, the data reupload flow and quality issues outside of defined rules or the data validation were reviewed. However, not all issues identified Member States were able to fix during the meeting. As such, the findings were added to DTMT. EWG subgroups checked the data using various criteria of the data quality. Of 22 Member States, 15 have reported errors. These errors are related to almost all submitted data sets. The increase of issue might be due to requests to resubmit the 2013-2021 period with the requested changes for the EEZ and metier codes which caused some difficulty to properly check renewed data.

32 quality or coverage issues with low or medium severity were identified and registered in DTMT. One issue of missing data was evaluated as high severity.  8 issues were indicated as recurrent. Four of the recurring issues were changed due to data request definitions and merged into two entries in the 2023 report. Issues with very low impact to the outcome of the working group reports were not added to DTMT.

In 2022 indicated issues were extracted from the DTMT by the EWG to assess their status and to highlight any action required. During the EWG meeting, experts defined the current status of these issues. 10 of the 21 issues were identified as resolved (through resubmission to the 2023 FDI data call). 10 issues were classified as unresolved and 1 issue as partly solved.

9 issues registered to DTMT by EWG 23-10 were related to spatial data. These were considered the expended checks where the rectangles, c-square and points on land were checked. At EWG 23-10 meeting it has been concluded where possible, minor issues were highlighted directly with the Member State and in the future will be shared with national correspondents by the JRC data collection team. The practices showed a better understanding of issues as results data was corrected and uploaded without recurring issues. Those issues identified during the EWG meeting have not had any significant impact on the outcomes of the group work.

The issues marked for follow-up by EWG 2023-05 were evaluated. Not all MS have solved them by uploading the data responding to the 2023 FDI data call. However, the approach taken by the EWG is not optimal and DG MARE may wish to consider how best the assessment of follow-up actions can be incorporated within the DTMT tool.

The EWG stressed the need to review the process of the purpose and application of the DTMT tool. In cases when follow ups are required after assessment of the issues by STECF, DGMARE and the Member State, must both be able to use DTMT to clarify and close issues so that the assessment can be finalised. This is an important step that is missing in the process now, so the EWG does not waste valuable resources in terms of people and time, assessing issues. It is essential to be able to register improvement and close issues identified in the previous years.

The EWG stresses the need for Member States to address and resolve the issues found during the meeting to increase the data quality and accuracy. The issues that stood out the most have been reported in the online DTMT.

### 3.1.2 Review outputs of ad hoc contract 2 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 delegated regulation specifying the details of implementation of the landing obligation for 2023

The EWG reviewed the outputs of the ad hoc contract (#2336) awarded to provide catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each anticipated exemptions of each discard plan for 2024. The EWG was 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 2024.

The EWG observes that 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, EWG reiterates also the observation by EWG 22-10, 21-12, 20-10 and 19-11 that the discards are estimated from sampling plans that are not designed to answer these specific exemption questions, or to provide estimates at such a detailed level. Discards estimates provided in table A are of major essential for the calculation of exemptions. However, the EWG also reiterates the conclusion of earlier EWGs, emphasizing the limited meaningfulness of 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'). In order to 'fill-in' estimates for fleets with no discard samples, the available sample data are aggregated across strata,

requiring many untested assumptions to be made, such as Member State-specific variation in species naming (i.e., HOM/JAX), and spatial aggregations (i.e. Nephrops Functional Units). Consequently, the estimated discards cannot be considered robust.

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.

Recognising that DG MARE require estimates for different catch fractions for exemptions to the Landing obligation for planning purposes, the EWG has attempted to provide such estimates. 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.

Member State-specific catch fractions were provided for the majority of anticipated 2023 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 of the data extract are presented in section 3.2 and Annex 3 and 4. Although the table of results provides the requested descriptions of discarding by exemption, in some cases, such estimates may at best be imprecise or may not be representative of the true level of discarding by fleets fishing under each particular exemption.

### 3.1.3 Review data quality checks and produce National methodological chapters, update National methodological chapters in line with the recommendations of the EWG 23-05 FDI Methodology

While the EWG recognizes that it is the responsibility of Member States to provide checked and validated data, issues are inevitable e.g., misinterpretation of the data call, coding misspecification between different databases in Member States and simple human error. To counter these issues the JRC have implemented a number of automatic checks, which were made available to experts two weeks after legal deadline (30th of June). The combination of this tool and extended period allowed for corrected data uploads (28th of August, operational deadline), reduced time required to correct data during the STECF EWG 23-10 meeting.

Quality assurance of the data held in the FDI database is provided by the experts who attend the meeting. Experts attending the meeting conduct these essential additional checks, which are time consuming and have compromised the ability of the EWG to address other essential TOR's. Ideally, the EWG should have a dedicated meeting, restricted to checking the integrity of the database, that should not include any requests for advice.

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

During the methodological EWG 23-05 the approaches used by Member States responding to the FDI data call were reviewed. Changed in the methodologies used were summarized in the Annex 2 of the STECF 23-05 report for most of the Member States. During the EWG 23-10 experts were asked to add, if possible, the information related to the missing Member States. The updated version of the summary by Member States is available in Annex 2 of this report.

### 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 2022, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the delegated regulations specifying details of implementation of the landing obligation for 2024*

EWG was tasked to provide landings and discards data for exemptions in discard plans based upon the previous work and method established in STECF EWG 20-10, STECF EWG 21-12, STECF EWG 22-10 and the output of ad hoc contract 2336.

### *General Conclusions*

While the EWG attempted to provide discard estimates for each anticipated exemption for 2024 discard plans, it was not feasible to produce such estimates for exemptions that require information that does not currently exist in the FDI database e.g., detailed trip and vessel level information (i.e., distance fished from shore and vessels engine power). Therefore, exemptions were characterised into four groups; yes, yes/partial, partial or no, based on the feasibility of the EWG to extract the relevant data (see Annex 3). All the data extracted is presented in the Tables 1-16 of the Annex 4. In the case of exemptions with yes/partial grouping, the data extraction did not fully take into account the MCRS, however available MCRS data is presented separately in Table 11 (Annex 4). In the 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 of Annex 3. All results under this ToR must be interpreted with caution, taking into account the shortcomings listed below.

### *Methodology and Shortcomings*

The EWG 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 EWG 17-12 and considering methodology identified by STECF EWG 21-10)* discard estimates available in Tables C and D into the detailed disaggregated levels specified in the Table A of the FDI data call.

The variable "Domain discards" is used to link the discard estimates in tables C&D to Table A. The domain is defined by the Member State, and its structure describes the raising procedure and sampling design used by Member States to estimate discards. The EWG stresses that the partitioned estimates may not be reliable estimates of the true discards, since differences in discard rates may occur within a domain.

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 2024, based on data provided for 2022. 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. 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 ToR 2 for discards of species under the landing obligation cannot be interpreted as discards for control purposes of the 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. 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 discard rates (also known as fill-ins) from other fleets which may not be representative of the catch composition of the unsampled fleets, due to differences in fishing patterns (where, when and how the fleets fish), target species, catch quota and differences in species and size selectivity etc. The fill-in procedure can result in highly unrealistic discard estimates, especially when discard rates from fleets with very low landings of bycatch species are used to fill-in discard rates for fleets where the same species is targeted and landed in larger amounts. The issue becomes especially relevant 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. A specific problem arises if landings are zero. In such cases standard raising routines applied by Member States may not deliver reliable discard estimates (see also Table 3.1.1.1 of STECF EWG 21-10 and 21-12 report for Summary table with methods used by MS to provide discard estimates). 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 factors such as differences between the fleets in fishing pattern, timing of fishing and quota availability are not always known by the EWG. 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.

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 DRare 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

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

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

For 2022, the data submitted in response to the data call amounted to 3,587,823 tonnes of landings, of which 23.7% (851,758 tonnes) had associated discard estimates. 449,291 tonnes (12.5%) had a discard estimate of zero. 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 sufficient 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 discard's estimates reported and fill-ins, the coverage as percentage of landings with discards is provided in the data Tables (Annex 4).

**3.** The EWG notes that given the aggregation level of the data in the FDI database, it was not possible to filter the database to the exact fishing tactic specified for all the exemptions. For example, the mesh size categories specified in the FDI database do not always 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. Especially gear codes not allowed in the FDI data call, or very generic codes, are open for interpretation. Exemptions not mentioning specific gear codes are also problematic in this respect. The EWG further notes that the legal text defining the exemptions in the discard plans was difficult to interpret for some exemptions.

**5.** In 2022 additional separation of the EEZ indicator to EU/UK waters was requested during the FDI data call. However, it was not always clear if exemptions were covering EU waters, or EU fleets operating in ICES areas. As in previous year the EWG agreed to extract the data for EU fleets operating in ICES Areas creating possibility to narrow down extraction to the EU waters in the database extract. The Annex 4 includes only information for EU fleets operating in both EU/UK waters and extraction of the data for EU waters was made available for DGMARE only.

**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 Annex 3 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 of Annex 3. 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 Annex 3;

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 4, Tables 1-10)

   b. Tables with FDI data reported and filled in aggregated by species and subregions (Annex 4, Tables 12-16)

In both sets of tables there are following columns:

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

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

- Landings with discards reported/estimated – weight of landings associated with discards provided/estimated;

- '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.

- Discard rate, % - calculated as discards divided by catch as %.

In all Annex 4 Tables the following abbreviations are used:

- c – data reported as confidential during the data call, if there are more than 4 records 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 aggregated catches and identify individual vessels;

- n.a. – not available.

**Discard estimates by exemption**

The estimated discards for fleets likely to make use of anticipated exemptions to the landing obligation in 2024, the details of the anticipated exemptions and associated data available are given for each region in tables 1 to 5  of Annex 3 and in Annex 4 Tables 1-12.

> *3.2.2  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 delegated regulations specifying details of implementation of the landing obligation for 2024*

***Estimation of the percentage of fish above and below MCRS***

***Estimation method and assumptions***

As for the previous reports, estimation of the proportion of fish above and below the MCRS by species, country, métier, and year was done by 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, respectively. 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 relate to the national sampling programs. Domains were created to reflect the sampling programs of the countries and to provide the best scientific information about the length structure of the landings/discards. In most of the cases a domain will then aggregate métier and/or

areas and/or quarter and/or mesh sizes from tables A. The values in column *totwghtlandg* and *discards* in 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 each 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.

The landings and discard tonnage reported in table A are the reference figures from which the percentage above and below MCRS should be computed.

The computation of the numbers above and below MCRS by 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 by COUNTRY, YEAR, DOMAIN, NEP_SUB_REGION and SPECIES
2. Merge the table A and D and F based on COUNTRY, YEAR, DOMAIN, NEP_SUB_REGION and SPECIES
3. 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]
4. Define if the length is under or above the MCRS using the reference tables [by species/area]
5. sum the weight/numbers of fishes under and above MCRS and the fraction for which no length structure is available 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 conclusions depend upon the number of domains provided and the number of samples in each domain and their representativeness. 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:

$$WeightLandings_{country,year,domain,species,l} =$$

$$\frac{meanweight_{country,year,domain,species,l} * Number_{country,year,domain,species,l}}{\sum_l meanweight_{country,year,domain,species,l} * Number_{country,year,domain,species,l}}$$

$$NumberLandings_{country,year,domain,species,l} = \frac{Number_{country,year,domain,species,l}}{\sum_l Number_{country,year,domain,species,l}}$$

Table D:

$$WeightDiscards_{country,year,domain,species,l} =$$

$$\frac{meanweight_{country,year,domain,species,l} * Number_{country,year,domain,species,l}}{\sum_l meanweight_{country,year,domain,species,l} * Number_{country,year,domain,species,l}}$$

$$NumberDiscards_{country,year,domain,species,l} = \frac{Number_{country,year,domain,species,l}}{\sum_l Number_{country,year,domain,species,l}}$$

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

### Merge Table A and D by Country, year and domain discard [table AD]:

$$DistribLengthbyWeightLandings_{country,year,domain,species,l} =$$
$$WeightLandings_{country,year,domain,species,l} * totwghtlang_{country,year,domain,species}$$

$$DistribLengthbyNumberLandings_{country,year,domain,species,l} =$$
$$NumberLandings_{country,year,domain,species,l} * totwghtlang_{country,year,domain,species}$$

### Merge Table A and F by Country, year and domain landings [table AF]:

$$DistribLengthbyWeightDiscardss_{country,year,domain,species,l} =$$
$$WeightDiscardss_{country,year,domain,species,l} * discards_{country,year,domain,species}$$

$$DistribLengthbyNumberDiscardss_{country,year,domain,species,l} =$$
$$WeightDiscardss_{country,year,domain,species,l} * discards_{country,year,domain,species}$$

## 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

$$PercentageLandings \in weightAboveMCRS_{country,year,met,species}$$
$$= \frac{\sum_{l>MCRS} DistribLengthbyWeightLandings_{country,year,met,specie,l}}{\sum_l DistribLengthbyWeightLandings_{country,year,met,specie,l} + \sum_l DistribLengthbyWeightdiscards_{country,year,met,specie,l}}$$

$$PercentageLandings \in weightUnderMCRS_{country,year,met,species}$$
$$= \frac{\sum_{l<MCRS} DistribLengthbyWeightLandings_{country,year,met,specie,l}}{\sum_l DistribLengthbyWeightLandings_{country,year,met,specie,l} + \sum_l DistribLengthbyWeightdiscards_{country,year,met,specie,l}}$$

$$PercentageDiscards \in weightAboveMCRS_{country,year,met,species}$$
$$= \frac{\sum_{l>MCRS} DistribLengthbyWeightDiscards_{country,year,met,specie,l}}{\sum_l DistribLengthbyWeightLandings_{country,year,met,specie,l} + \sum_l DistribLengthbyWeightdiscards_{country,year,met,specie,l}}$$

$$PercentageDiscards \in weightUnderMCRS_{country,year,met,species}$$
$$= \frac{\sum_{l<MCRS} DistribLengthbyWeightDiscards_{country,year,met,specie,l}}{\sum_l DistribLengthbyWeightLandings_{country,year,met,specie,l} + \sum_l DistribLengthbyWeightdiscards_{country,year,met,specie,l}}$$

***Estimation of the percentage of fish above and below MCRS by exemption***

The calculation of the percentage of fish caught above or below the MCRS was applied to exemptions in 2021 and continued in 2022. The same methodology as developed in 2021 was used to estimate percentage of fish above and below MCRS by exemption. The methodology is based on shares of discards < and > MCRS calculated using biological Table D and applied to the discards provided in Table A.

Only rows with sampled biological data for both discards (Table D) and landings (Table F) were used in the calculations. That ensured the same coverage of landings and discards per record.

MCRS data is presented in Table 11 of Annex 4 by exemptions, species and countries, showing the time series of data for 2019-2022 where possible.

The discards < MCRS % per exemption were calculated as sum of estimated discards < MCRS within the exemption divided by sum of corresponding catch per exemption and Table A records.

***Results***

The exemptions could only be calculated where biological data was available. Corresponding total discards and % of discards below MCRS per exemption and country in 2019-2022 are provided in Table 11 of Annex 4.

Note that, where exemptions relate to multiple species, the percentages for each species above and below MCRS relate to the catch of that species only and not to the total catch of all species concerned in the exemption.

The results of calculations for landings and discards < and > MCRS per Member States and métier are presented in Annex 4 of this report.

> *3.2.3  Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards) for 2022. Only if this is possible and sufficient data is available for such estimation*

The above ToR is addressed as part of 3.2.1 and results are presented in the Annex 4 columns related to discards with fill-ins using the methodology outlined in the chapter 3.2.1.

## 3.3   Review dissemination formats and produce dissemination tables and maps of spatial effort and landings by c-squares

> *3.3.1   Discuss if there are any changes needed in the data dissemination format agreed in 2022*

The EWG agreed on using for the dissemination of the data the format agreed in 2022.

> *3.3.2   Discuss and agree guidance around how Table B should be interpreted, and if it should be disseminated*

During the EWG 23-10 there was not enough time to agree and prepare guidance for interpretation of the data provided in Table B. For this reason, the EWG recommends for this year not to disseminate Table B.

### 3.3.3 Run the script used during the EWG 23-05 on FDI Methodology to check impact of confidentiality rules on coverage of disseminated data

During the EWG the dataset that will be disseminated on the STECF website was not yet available and for this reason it was not possible to analyse the impact of confidentiality rules on coverage of disseminated data in the same way done during the methodological meeting (EWG 23-05). Instead an analysis of the amount of confidential data contained in the FDI dataset was carried out.

**Effect of confidentiality on landings**

*Year 2022*

With the aim to explore the effect of confidentiality in year 2022, on the amount of reported landings weight (TOTWGHTLANDG) reported in Table A in year 2022, this variable was calculated by type of confidentiality, by fishing technique. It should be noted that when "confidential" in Table A is set to "V", the confidentiality refers only to the value of landings, thus TOTWGHTLANDG are regarded as non-confidential. In Figure 3.3.3.1, the total amount of TOTWGHTLANDG is shown by type of confidentiality. Substantial amounts and proportions of confidential landings weight is shown for pelagic trawlers (TM) and demersal trawlers and/or demersal seiners (DTS), while in most cases only a low proportion of the variable is treated as confidential.

**Figure 3.3.3.1** Landings in 2022 (Table A) marked as confidential (pink bars) or non-confidential (blue bars) by fishing technique.
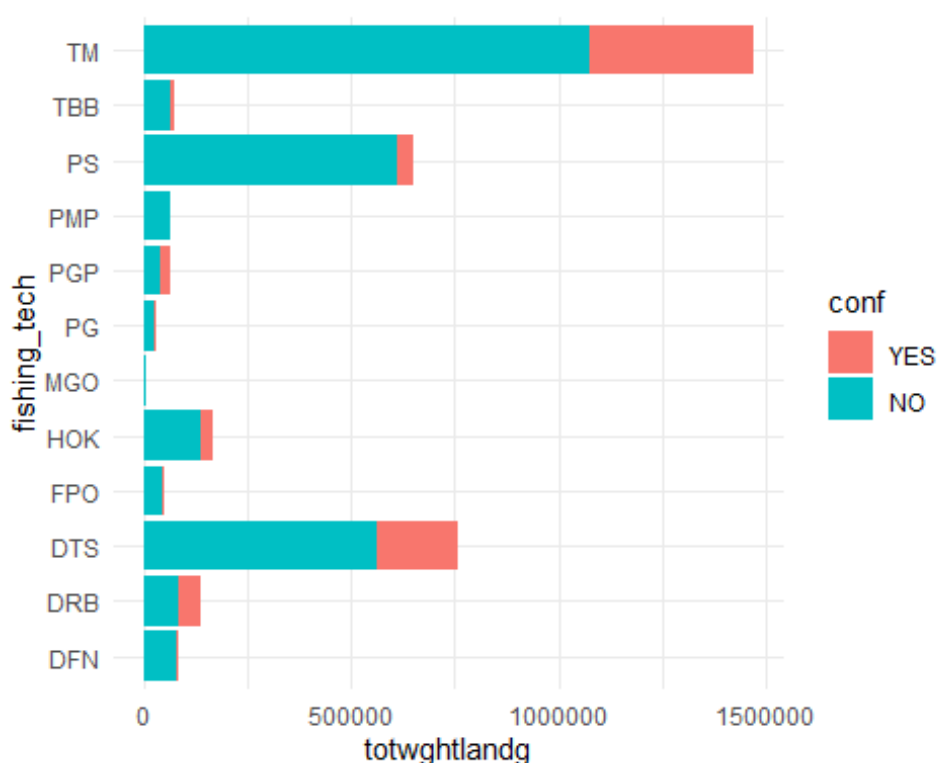


Total landings weight by type of confidentiality was also plotted by fishing zone (Figure 3.3.3.2). It is shown that the largest amount and proportions of confidential landings weight corresponds to Distant waters, followed by North Sea, while the lowest occurs in the Baltic Sea and the South Western waters.

**Figure 3.3.3.1** Landings in 2022 (Table A) marked as confidential (pink bars) or non-confidential (blue bars) by fishing technique.
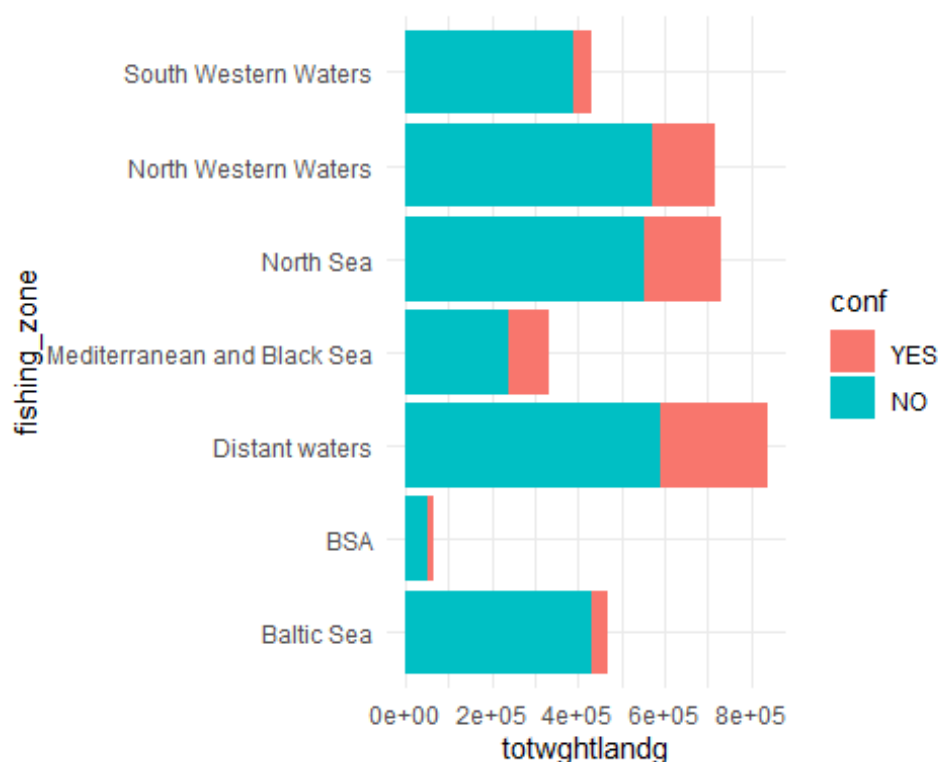


**Figure 3.3.3.2** Landings in 2022 (Table A) marked as confidential (pink bars) or non-confidential (blue bars) by fishing Zone.

Confidentiality has also effect on the disseminated landings length composition (Table F), since if any row corresponding to a given domain_landings in Table A is marked as confidential (excl. type "V of Confidentiality), all the data in Table F corresponding to this domain are treated as confidential. To explore this effect, the number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, was calculated by fishing technique (Figure 3.3.3.3). It is known that in all cases, the majority of domains is set as confidential.

The results are similar when plotted by fishing zone, where in all zones the majority of landing- domains with length composition are set as confidential (Figure 3.3.3.4).

**Figure 3.3.3.3** Number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, by fishing technique.
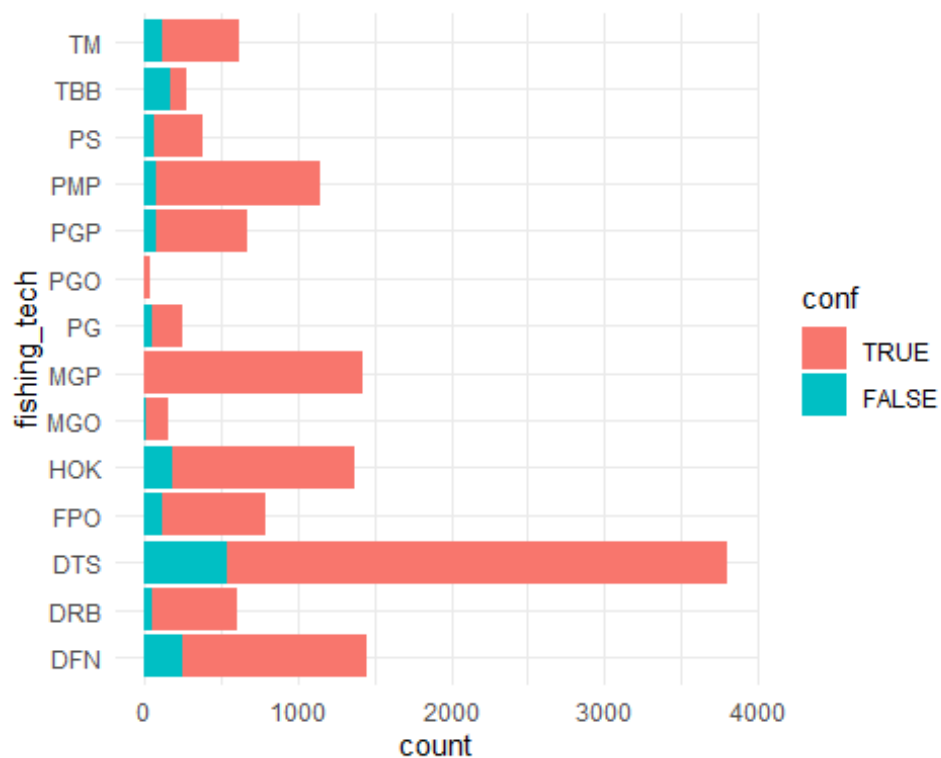
**Figure 3.3.3.4** Number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, by fishing zone.
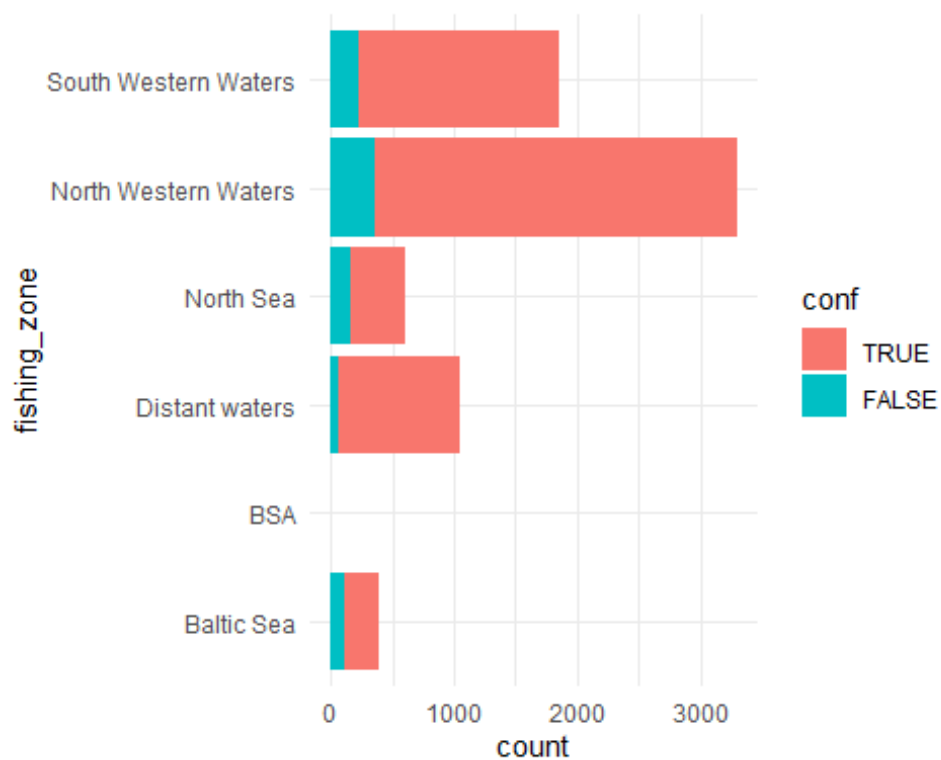


The next step was to calculate the proportion of confidential landings by species and by fishing technique. It is shown that the average proportion of confidential landings is above 25% in most cases, and it is highest for trawlers (TBB, TM, DTS) and PS (Figure 3.3.3.5).

**Figure 3.3.3.5** Proportion of confidential landings by species and by fishing technique in 2022. The points represent mean values and the vertical bars the SEs.
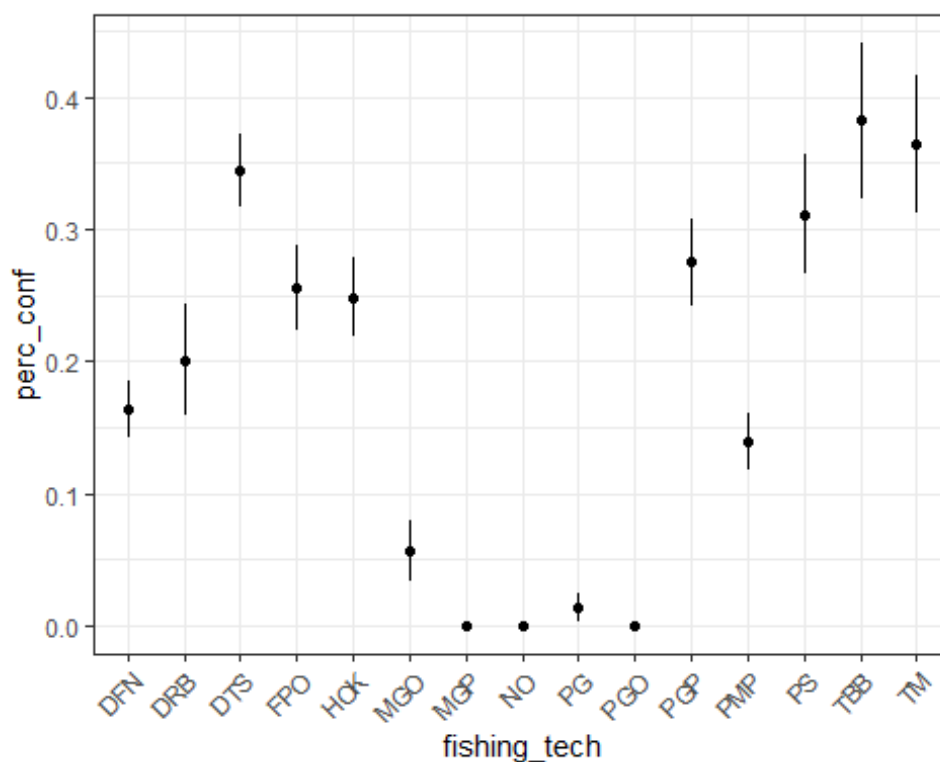


The analysis above was repeated by fishing zone. The plot shows that in most zones the average percentage of confidential landings by species is above 20% and is highest in the North Sea (Figure 3.3.3.6).

**Figure 3.3.3.6** Proportion of confidential landings by species and by fishing zone in 2022. The points represent mean values and the vertical bars the SEs.
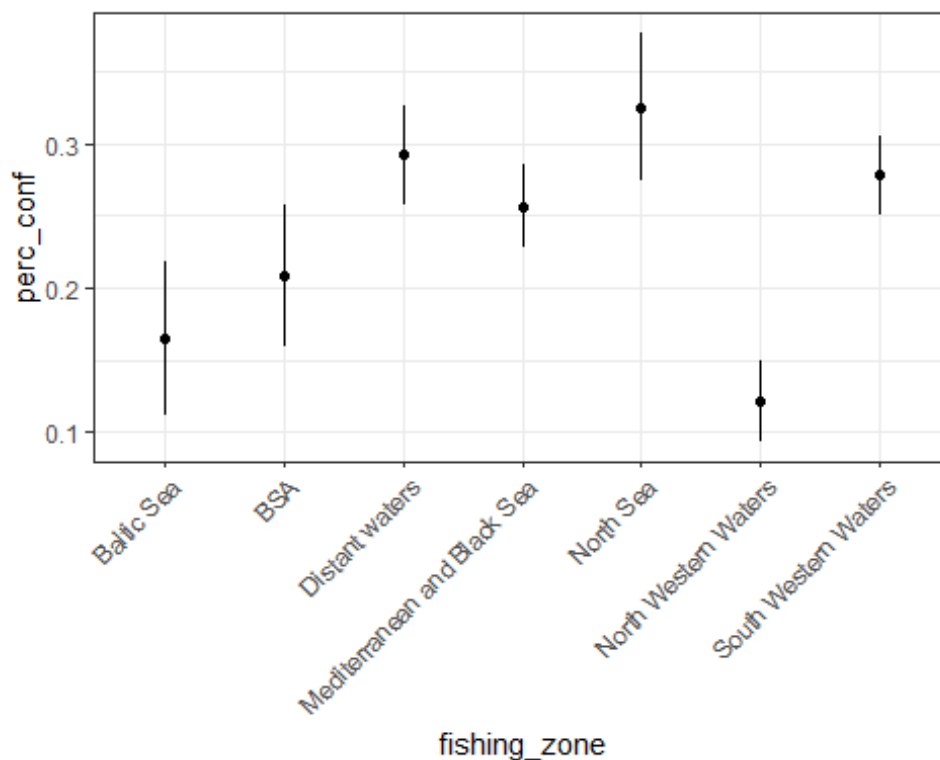


*Across years (2013-2022)*

The analyses above were repeated also across years (2013 -2022) and the results are presented in the Figures below.

In Figure 3.3.3.7 the confidential landings by fishing technique and by year are presented. The amount seems to remain stable across years and is relatively higher for TM and DTS.

**Figure 3.3.3.7** Amount of landings (in tonnes) set as confidential in Table A across the years (period 2013-2022) by fishing technique. The size and the colour of the circles represents the amount.
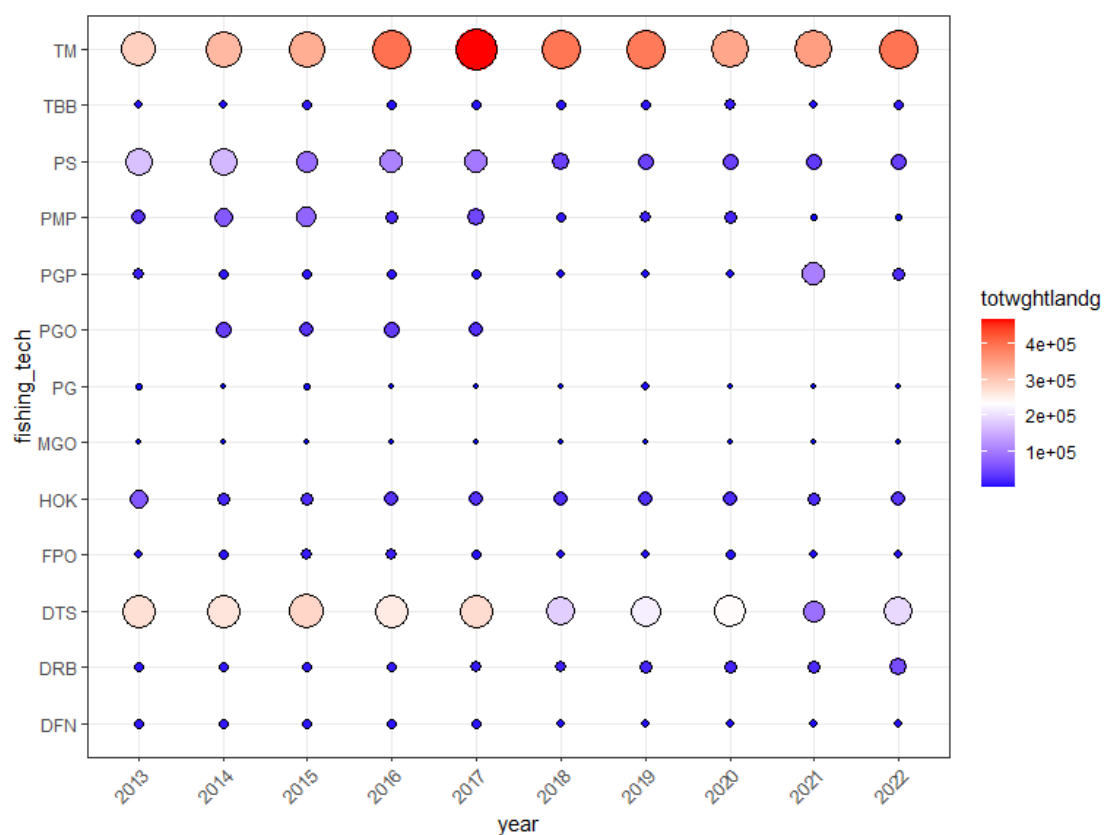


The amount of confidential landings is higher in the Distant water in all years (Figure 3.3.3.8).

**Figure 3.3.3.8** Amount of landings (in tonnes) set as confidential in Table A across the years (period 2013-2022) by fishing zone. The size and the colour of the circles represents the amount.
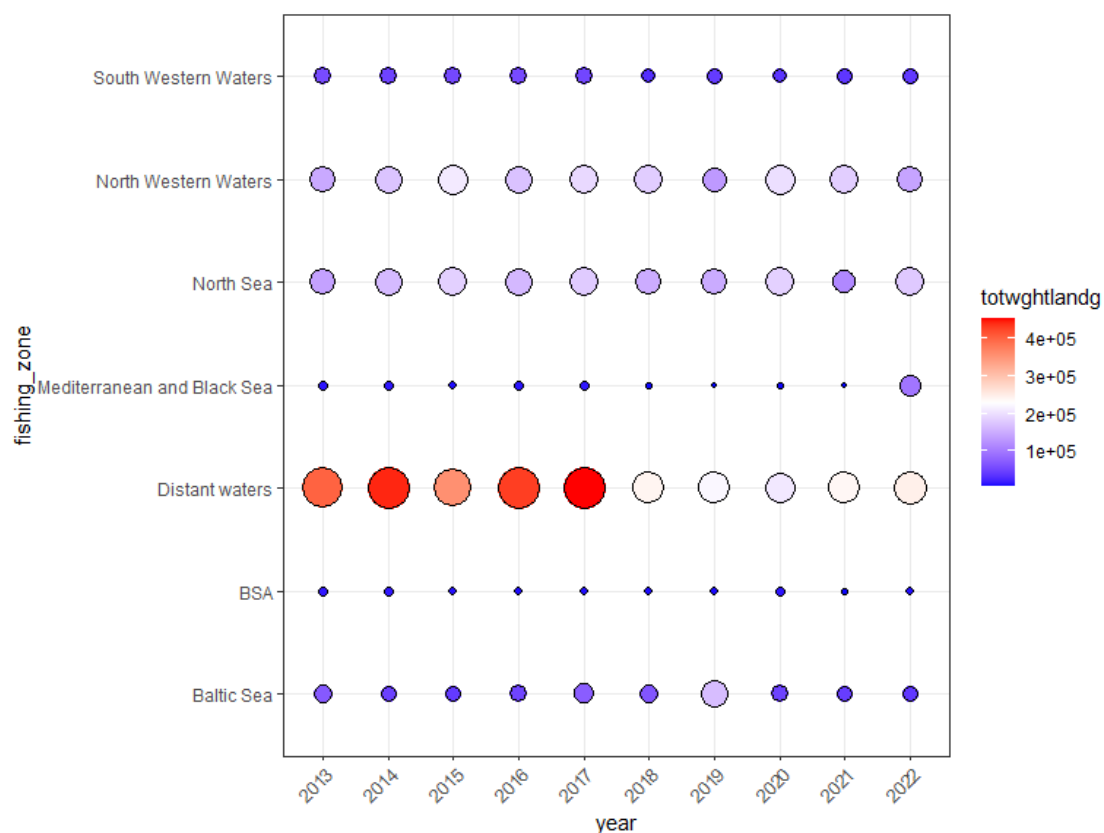


The number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, is more pronounced for the DTS fishing technique across all years (Figure 3.3.3.9). In addition, the amount for all fishing techniques seems to remain stable across this period.

**Figure 3.3.3.9** Number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, by fishing technique.
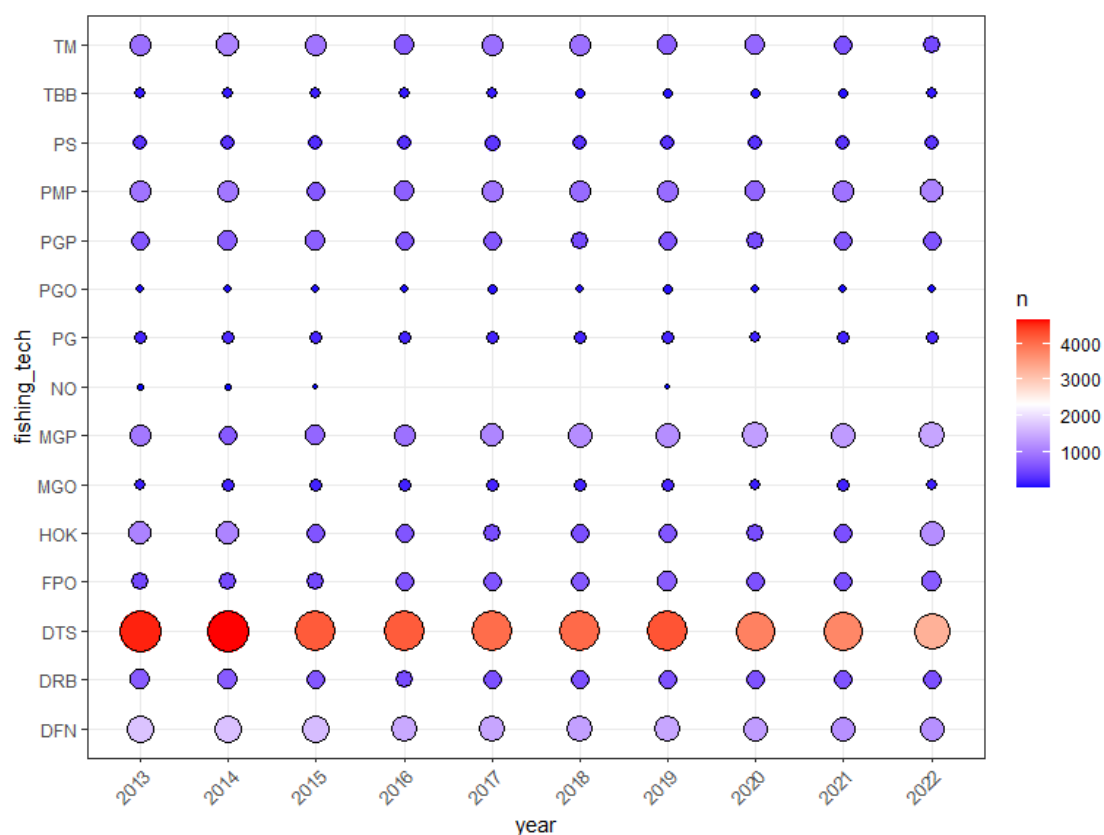


On the fishing zone scale, the largest numbers of confidential domains were found in North Western and in South Western waters. The amounts remain constant across years (Figure 3.3.3.10)

***Number of domains by zone***

**Figure 3.3.3.10** Number of domain_landings, for which landings length composition data were available in Table F, and with any corresponding row in Table A set to confidential, by fishing zone.
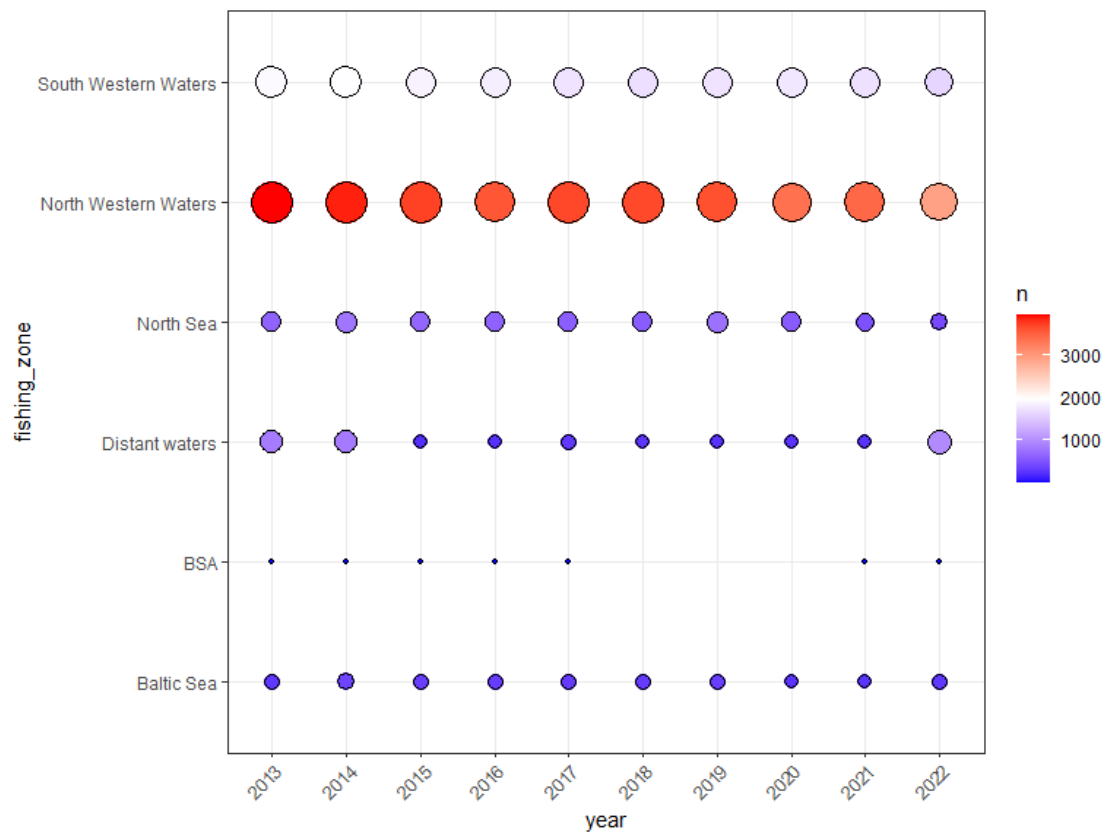
The average proportion of confidential landings by species, averaged over fishing technique or by fishing zone in each year are shown in Figure 3.3.3.11 and in Figure 3.3.3.12, respectively. The proportions seem to remain relatively stable in each zone across the period. However there seems to be an increasing trend in recent years for certain techniques, including TM, TBB, PS, PGP, FPO and DTS.

**Figure 3.3.3.11** Average proportion of confidential landings by species for each fishing technique in 2013- 2022.
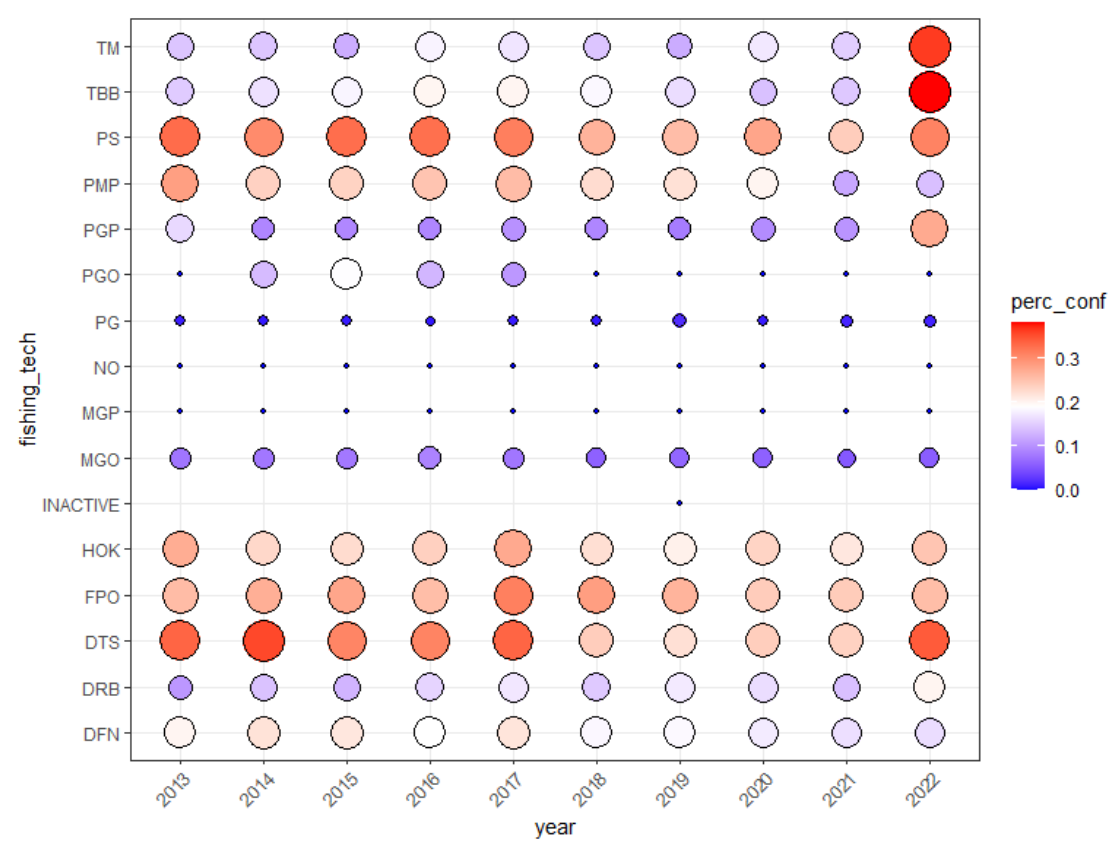
**Figure 3.3.3.12** Average proportion of confidential landings by species and for each fishing zone in 2013- 2022.
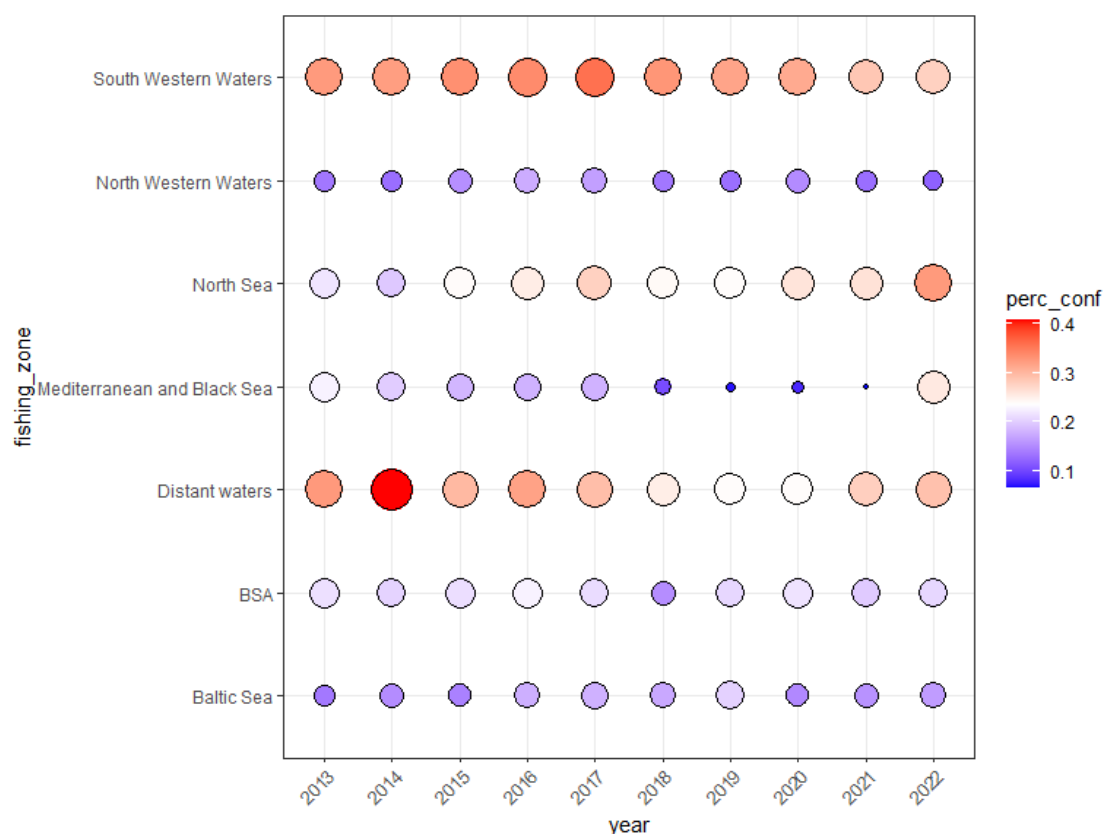


**Effect of confidentiality on selected species**

*Cod*

The amount and the proportions of confidential or non-confidential landings in the 2013-2022 for cod is shown in Figure 3.3.3.13. The proportion is around 30% and remains relatively stable, but tends to increase in recent years.

**Figure 3.3.3.13** Amount of landings (in tonnes) set as confidential (pink bars) or non-confidential (blue bars) for cod in the period 2013-2022. The labels represent the percentages.
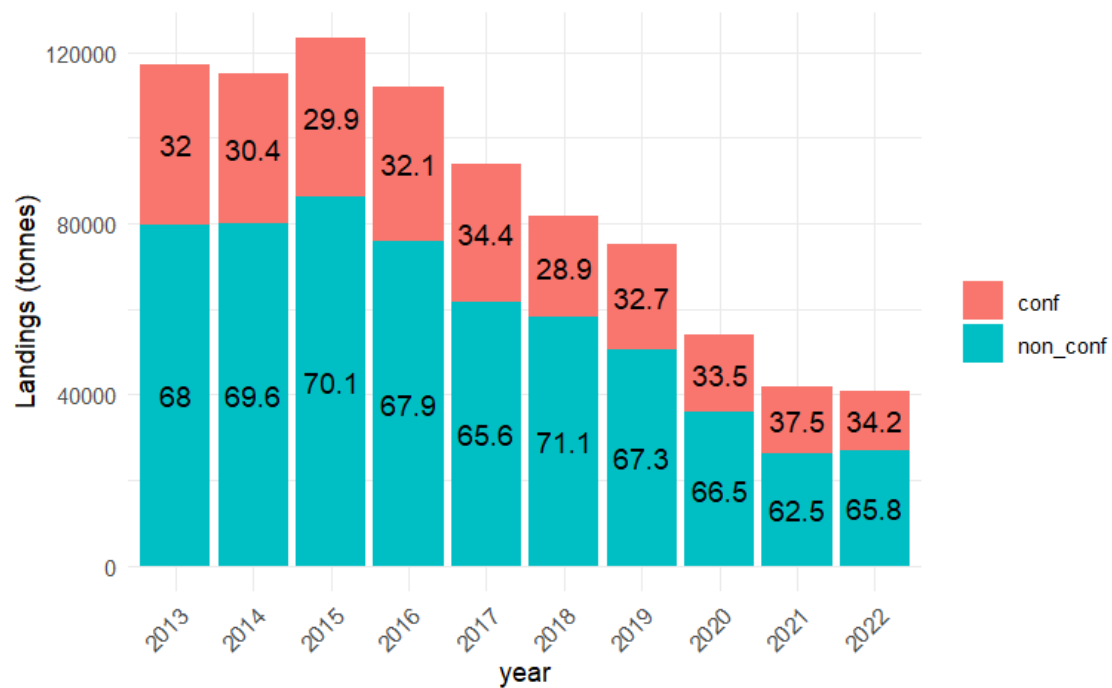
*Hake*

The amount and the proportions of confidential or non-confidential landings in the period 2013-2022 for Hake is shown in Figure 3.3.3.14.Figure 3.3.3.13 The proportion is lower compared to cod, and has a higher variability, ranging from 6 to 13%.

**Figure 3.3.3.14** Amount of landings (in tonnes) set as confidential (pink bars) or non-confidential (blue bars) for hake in the period 2013-2022.
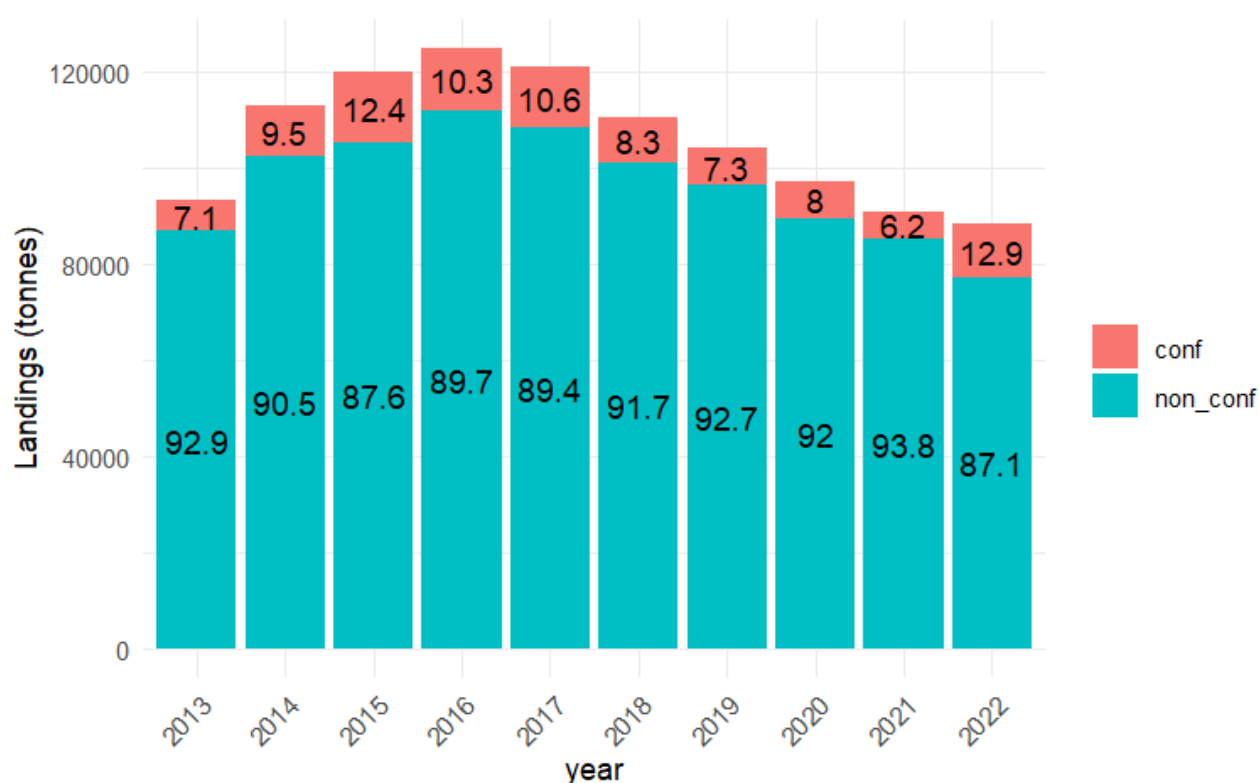
### Data and methods

The first step of the spatial data checks 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:

1. 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.

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 noticed that some of spatial checks developed over the last few years of EWG activity were included in the new data monitoring platform based on QLIK. 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, the expert working group used the c-square data set indicating the type of c-square (sea, land, and coast) produced during EWG 21-12. The c-square dataset was enriched with information about the subregion level: area, sub area, division, subdivision and subunit and the corresponding label (e.g. 27.5.b.1.b).

Considering the volume and confidentiality of the data coupled with different level of aggregations needed for visual inspection, the expert working group recommends that the new data monitoring platform includes not only the spatial checks but also maps for on the spatial effort and spatial landings data. Visual inspection through mapping will facilitate EWG experts in identifying less evident spatial issues like swapped coordinates, points on land, sub regions and supra-region mismatch.

One c-square located on land for France was accepted after a clarification from the expert:

*"France provides information in answer to FDI data call for the reference fleet population following the definition acted by the 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. Among the vessels registered in the EU fishing fleet, some Mediterranean small-scale vessels have a partial fishing activity in lakes which consequently leads to provide fishing activity data located on land (at 0.5\*0.5 degree resolution related to GFCM squares according to GFCM statistical grid) in table H & I. In agreement during the STECF working group, it was decided to keep such information in the data."*

Similarly, a c-square located on land for Croatia was accepted after a clarification from the expert:

*"Concerning spatial data, in previous years STECF recognized that Croatia provided records appearing as centroid of square M26E7, located on land (at 0.5\*0.5 degree resolution related to GFCM squares according to GFCM statistical grid). This is not a case of misspecified geo-coordinates, but a special case according to the Croatian Marine Fisheries Act which defines the Delta of River Neretva as marine area, while this square is not recognized by GFCM and Appendix 14 of the FDI data call. In agreement during the STECF working group, Croatia did not correct this data since it is not erroneous."*

The geographical data validation process highlighted an overall improved quality of the spatial data submitted with only 0.09% of invalid records for Table I and 0.04% 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, where the unit of measurement for landings was incorrect and when the combination of gear and mesh size range was not allocated to the gear classes described in ToR 3.4.b.

The expert working group recommends to include additional checks on the correct combination of gear and mesh size range according to Appendix 6 of the data call.

### Results

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 2017-2022 but voluntary for 2013-2016. And UK data was provided for 2014-2020 only.

A comprehensive catalogue of maps depicting fishery-dependent spatial data is given in Annex 5.

A selection of maps depicting effort by main Fishing Region are given in Figures 3.3.4.1 and 3.3.4.2 and by macro-gear type are given in Figures 3.3.4.3 and 3.3.4.4.

***Figure 3.3.4.1:*** *Spatial effort maps by main fishing region*

a) *Baltic Sea*

b) *North Sea*



c) *North Western Waters*

d) *South Western Waters*



e) *Mediterranean and Black Sea*



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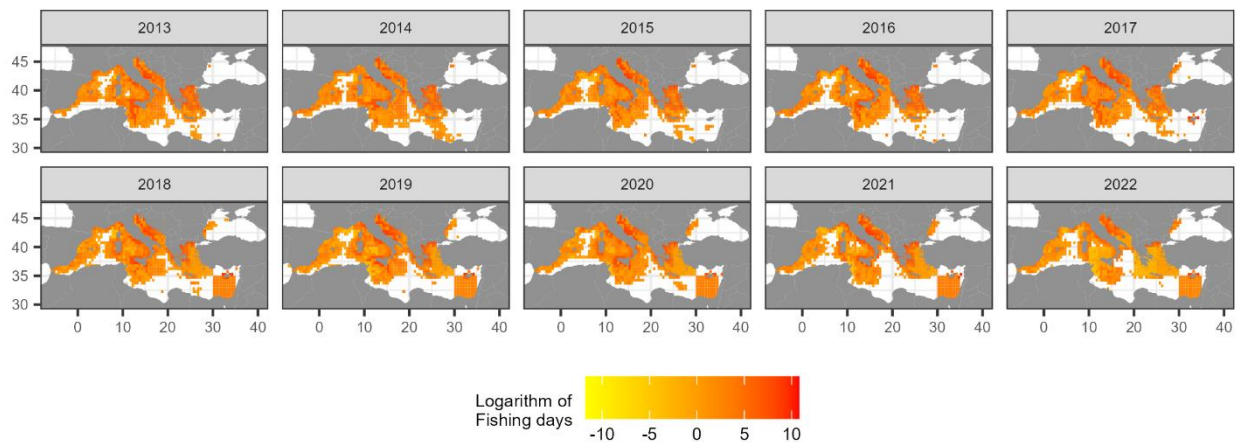
f)   *Distant Waters*



**Figure 3.3.4.2:** *Spatial effort maps by main gear types*
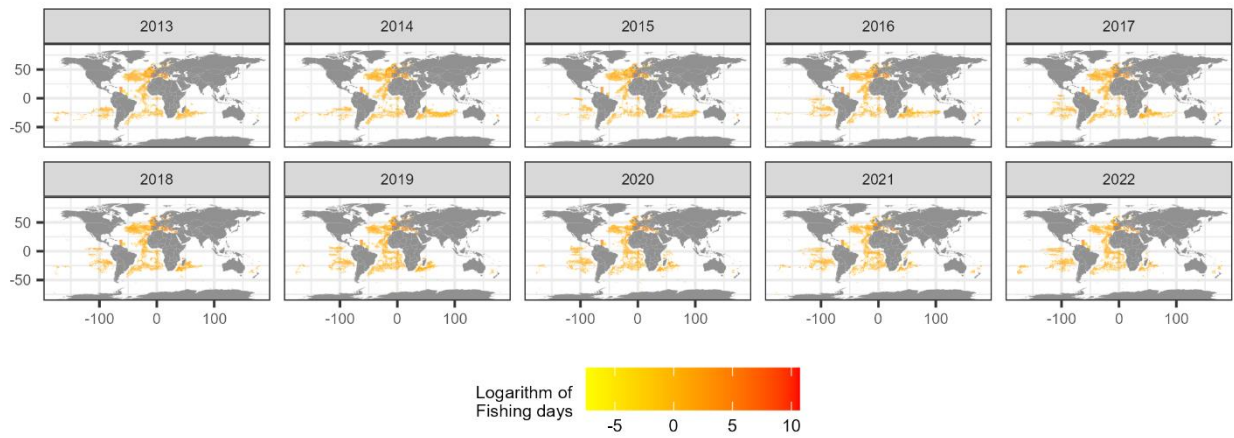
a)      Dredges

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 3.3.4.3:* *Spatial landings maps by main fishing region*

a) *Baltic Sea*
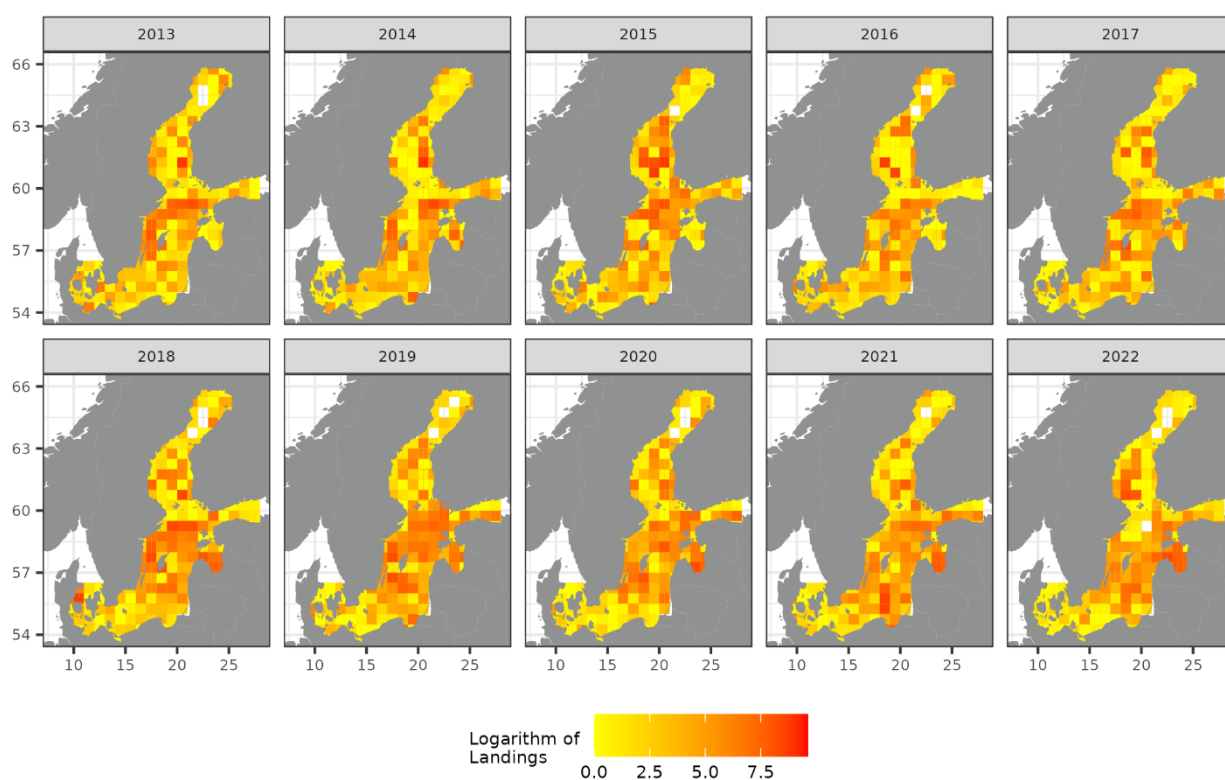
b)    *North Sea*
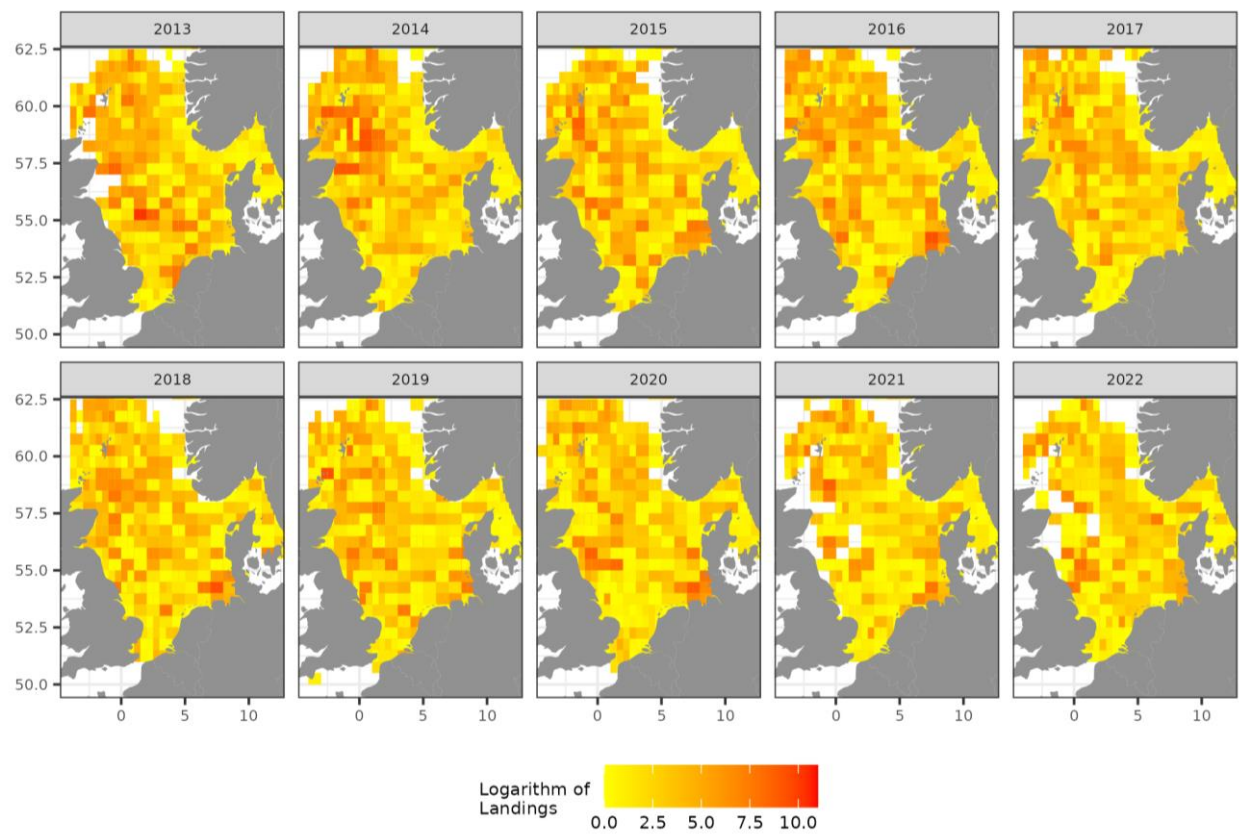
c) *North Western Waters*
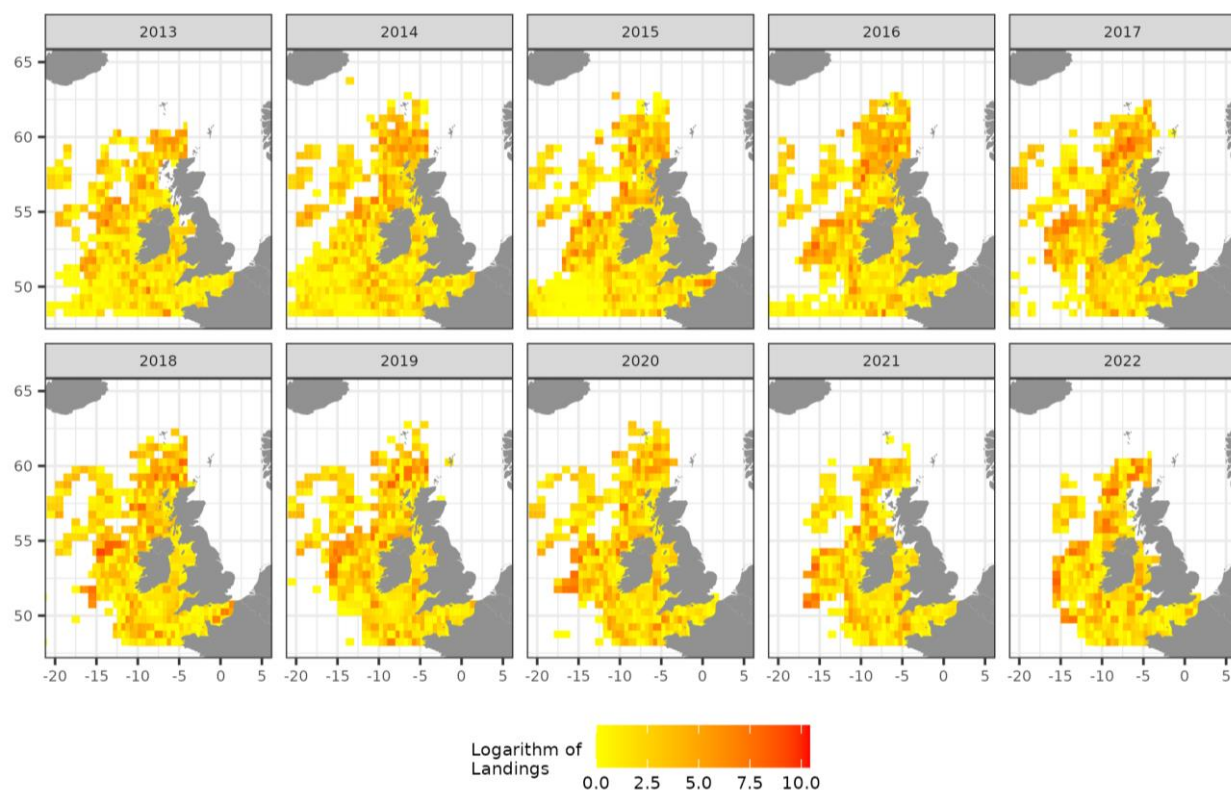


d) *South Western Waters*
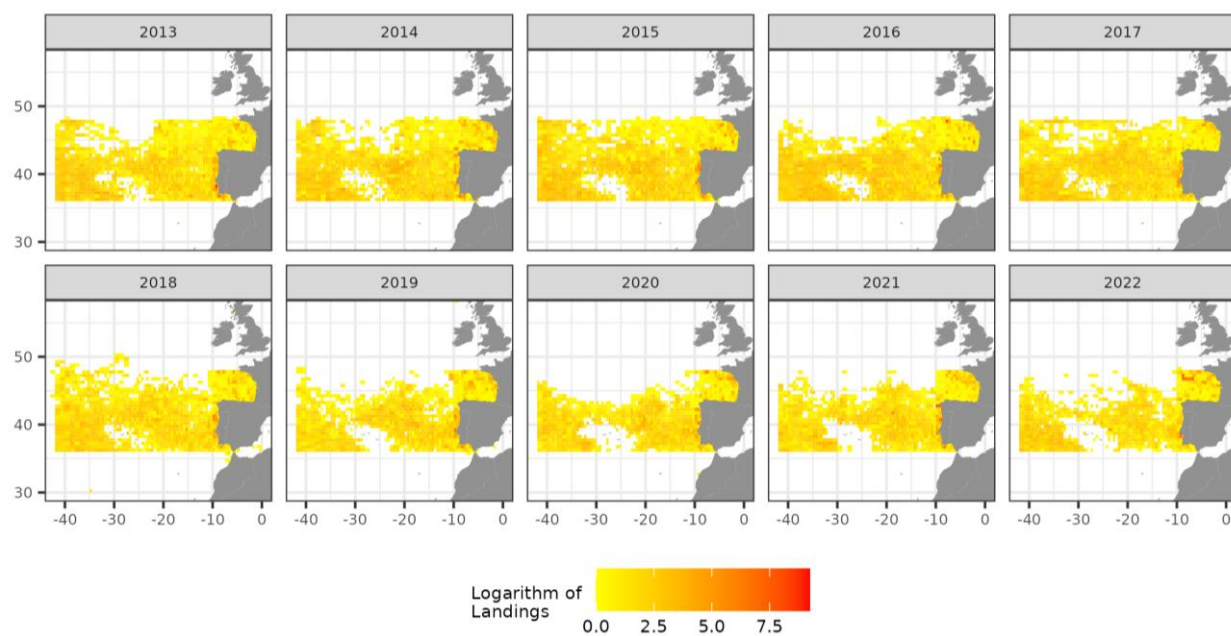
e) *Mediterranean and Black Sea*
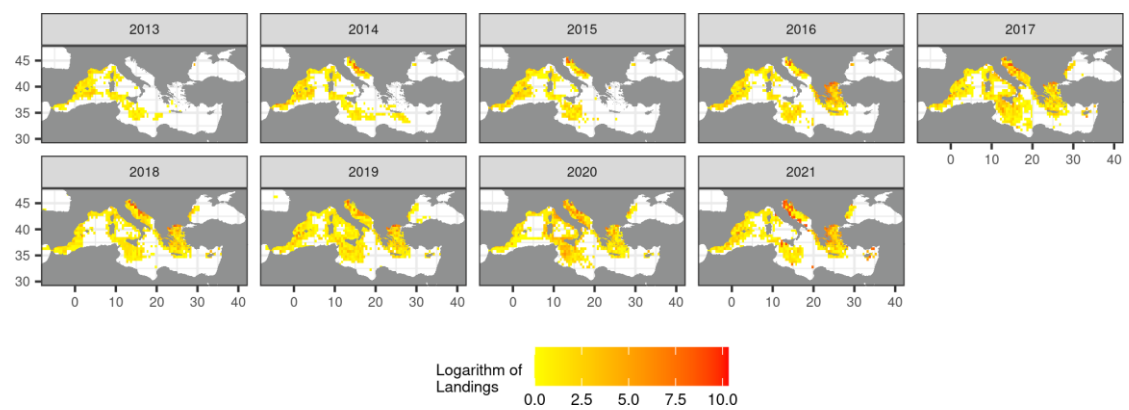


f) *Distant Waters*
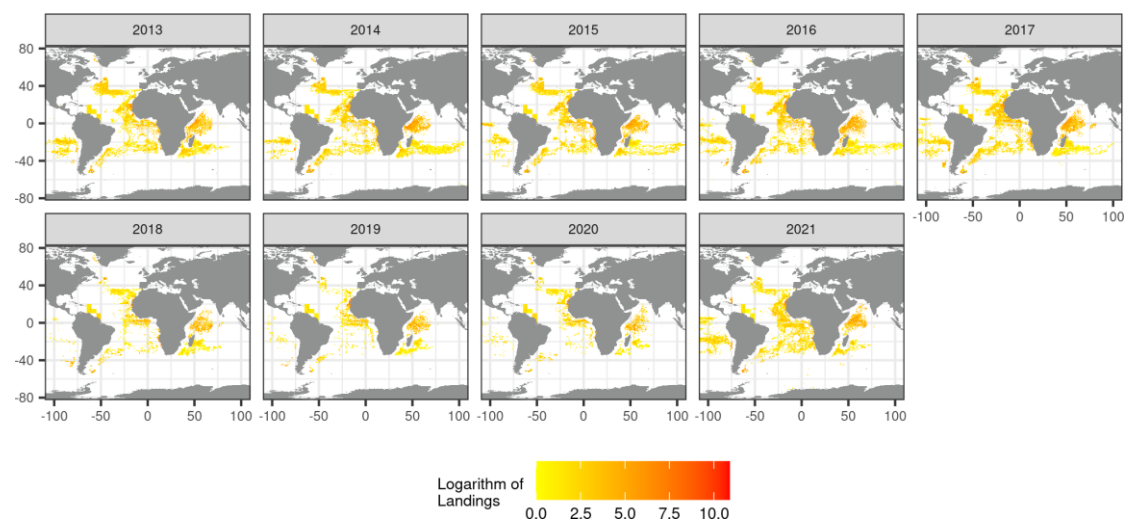
**Figure 3.3.4.4:** *Spatial landings maps by main gear types*

a) Dredges
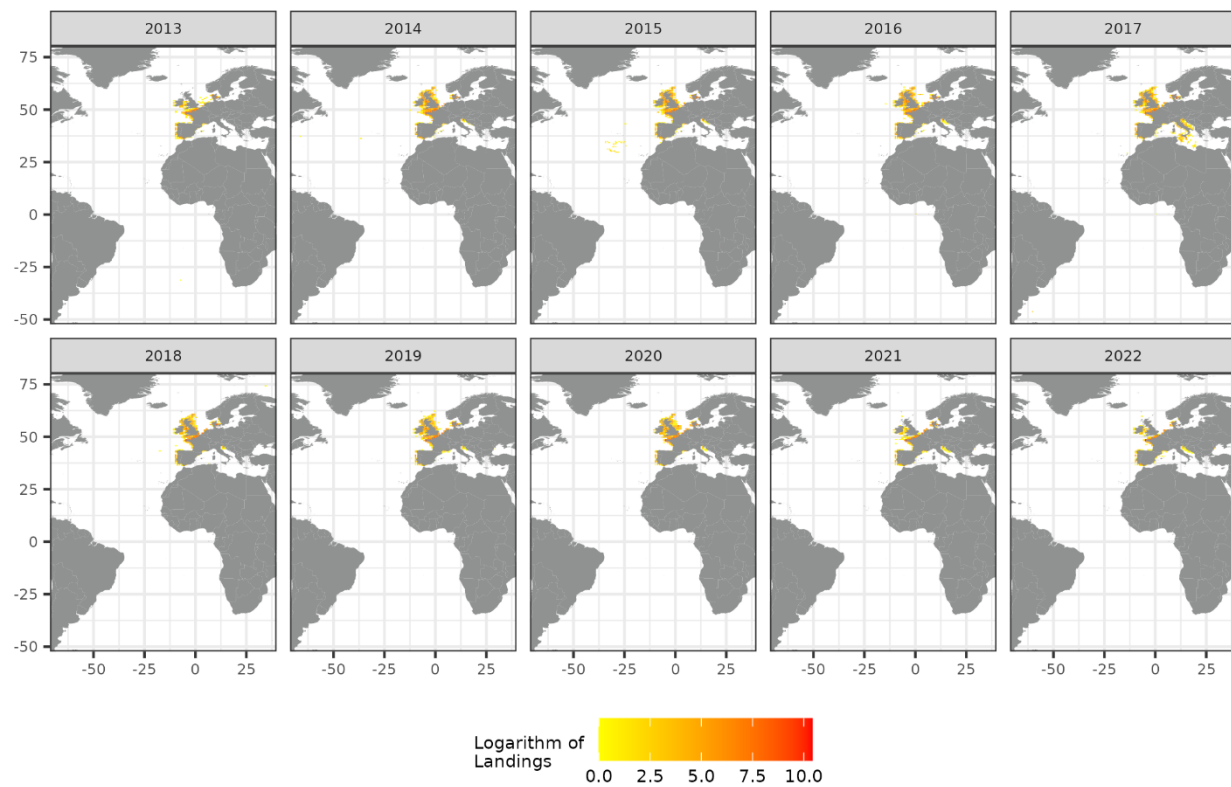


b) Hooks
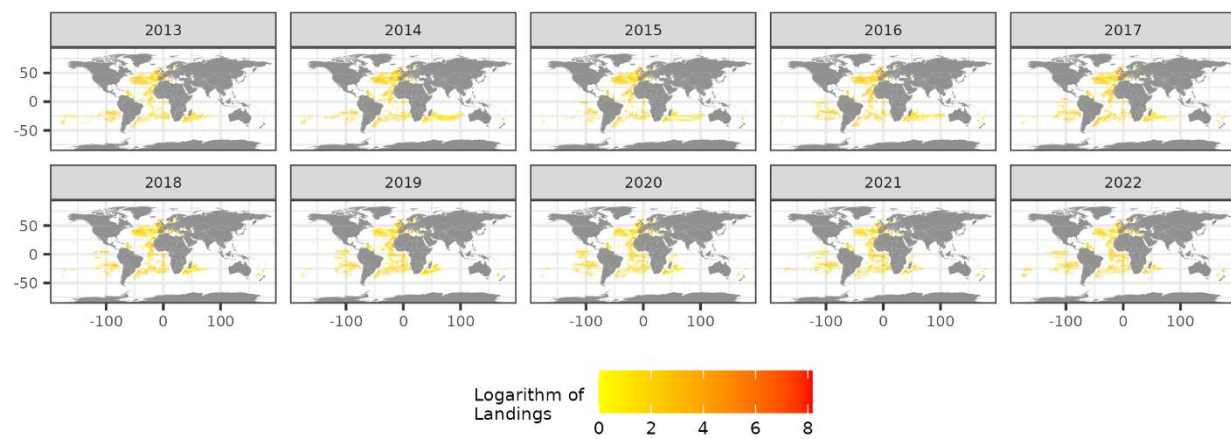
c) Nets
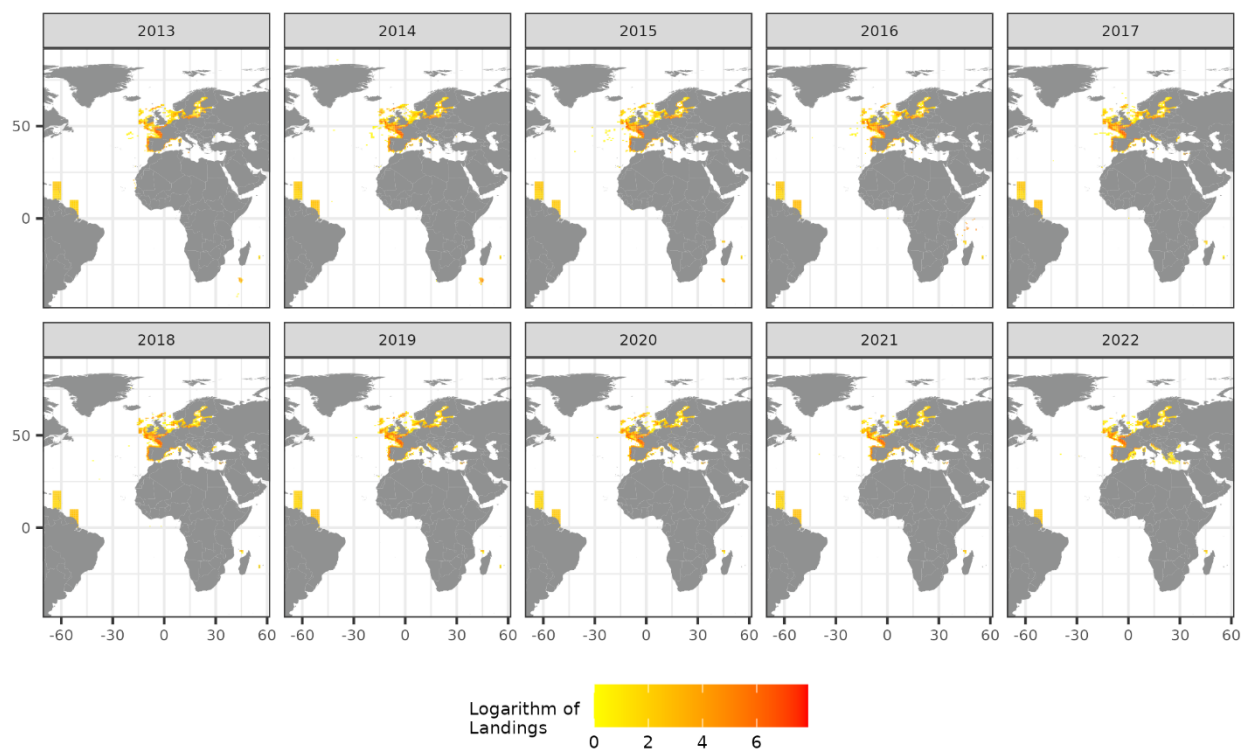


d) Seines
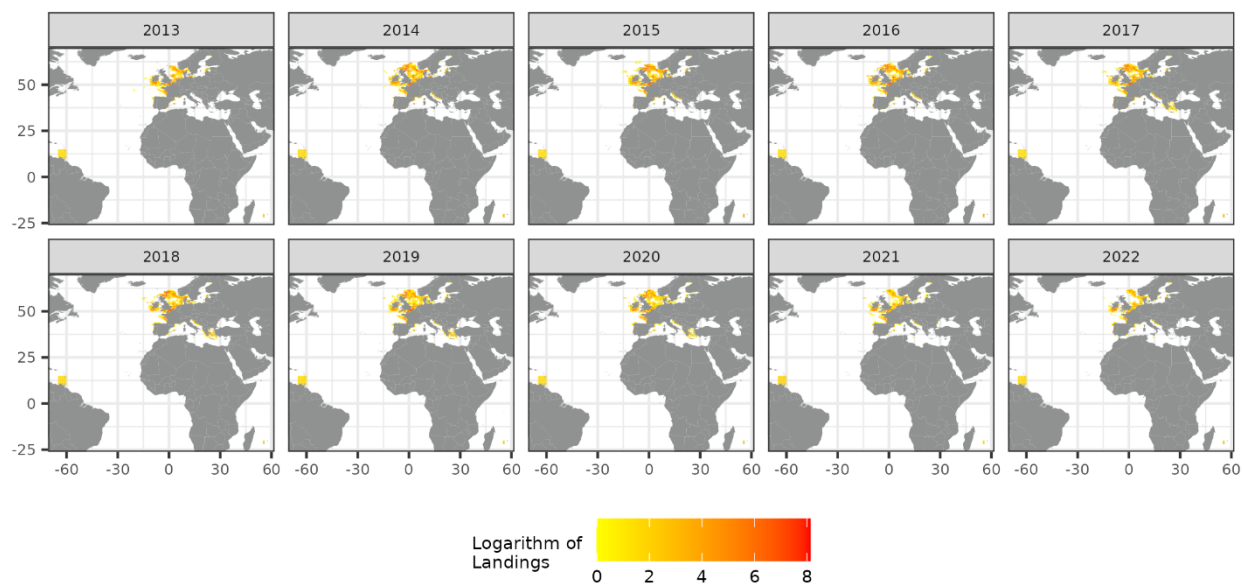
e) Surrounding nets
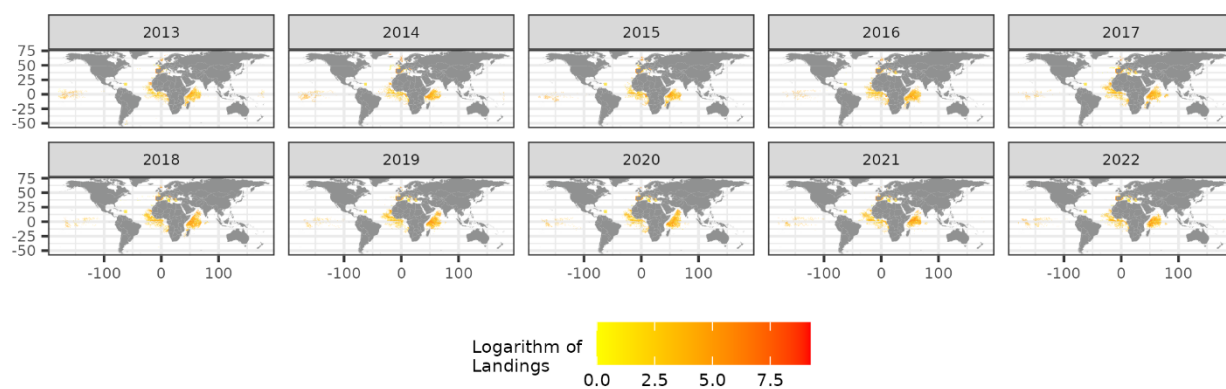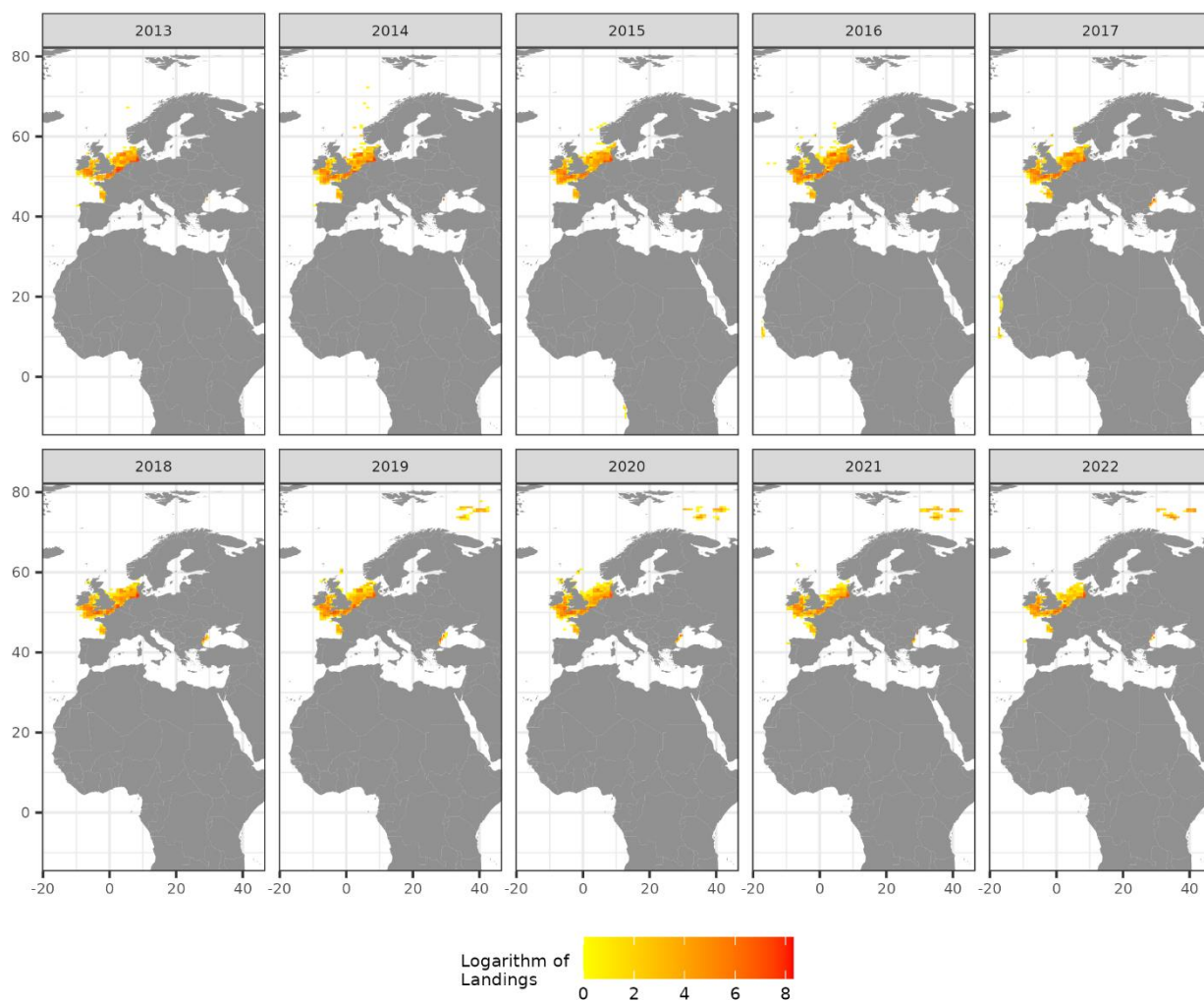


f) Beam trawlers with less than 120mm mesh size

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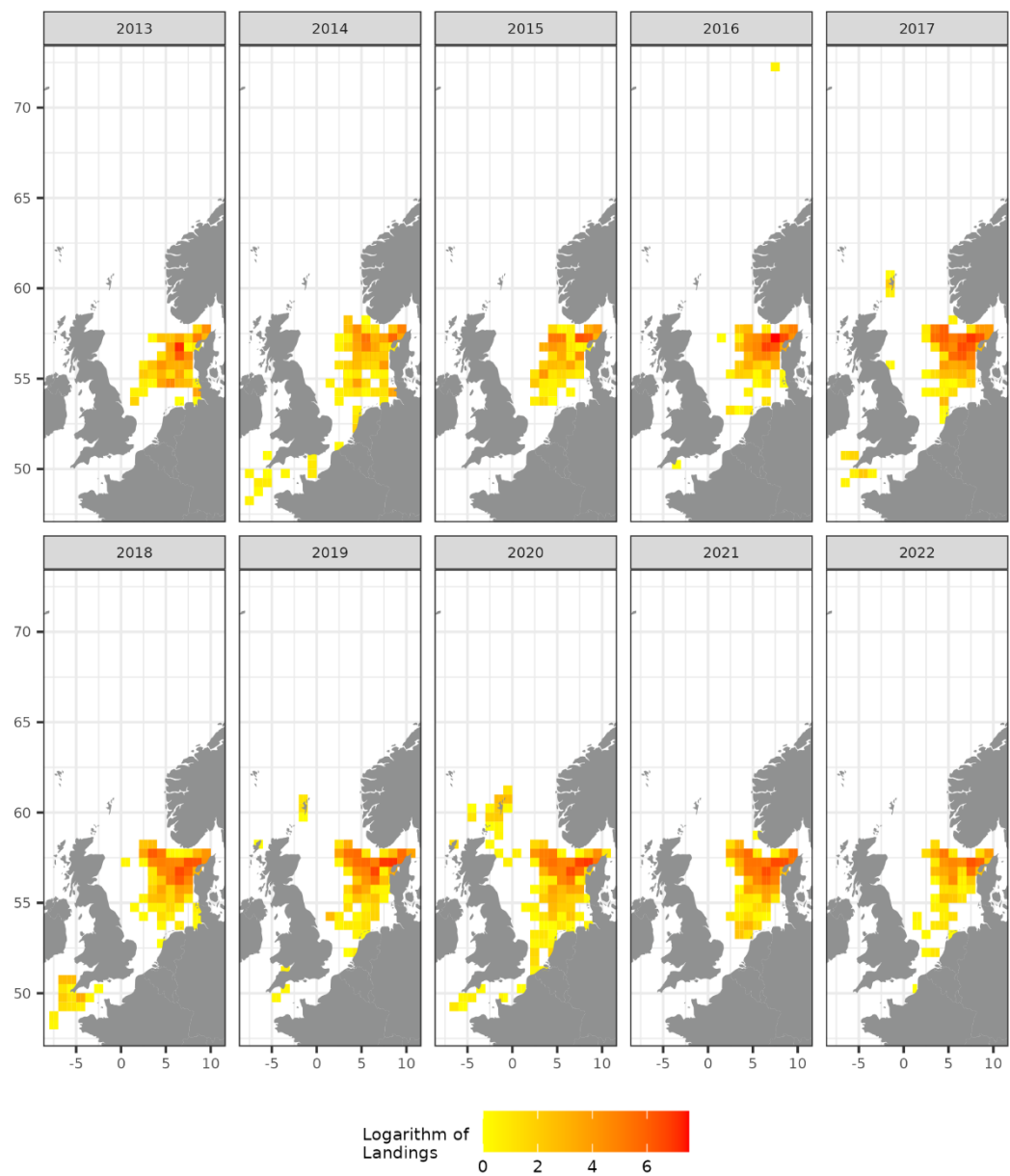
h) Beam trawlers with unknown mesh size
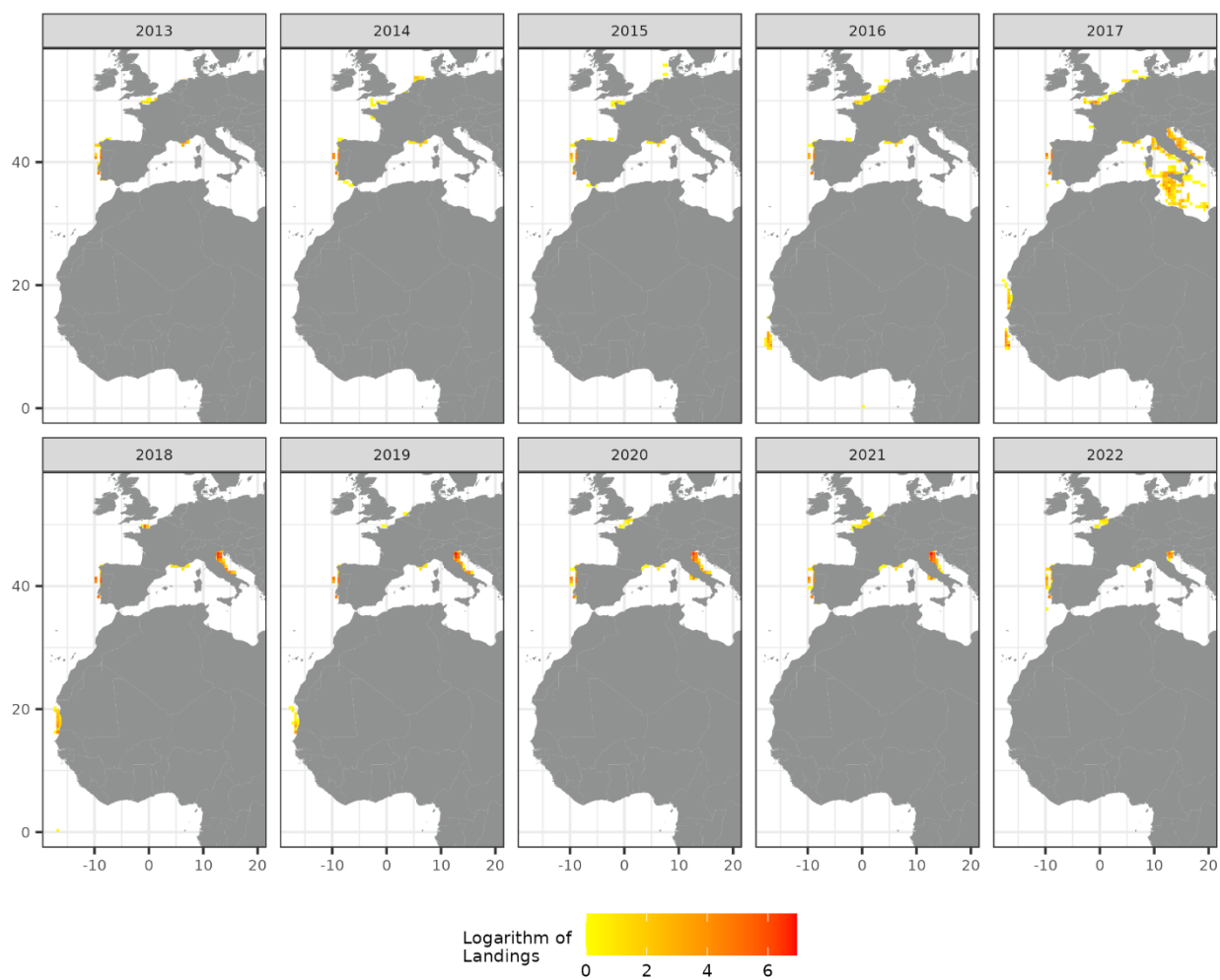
i) Traps
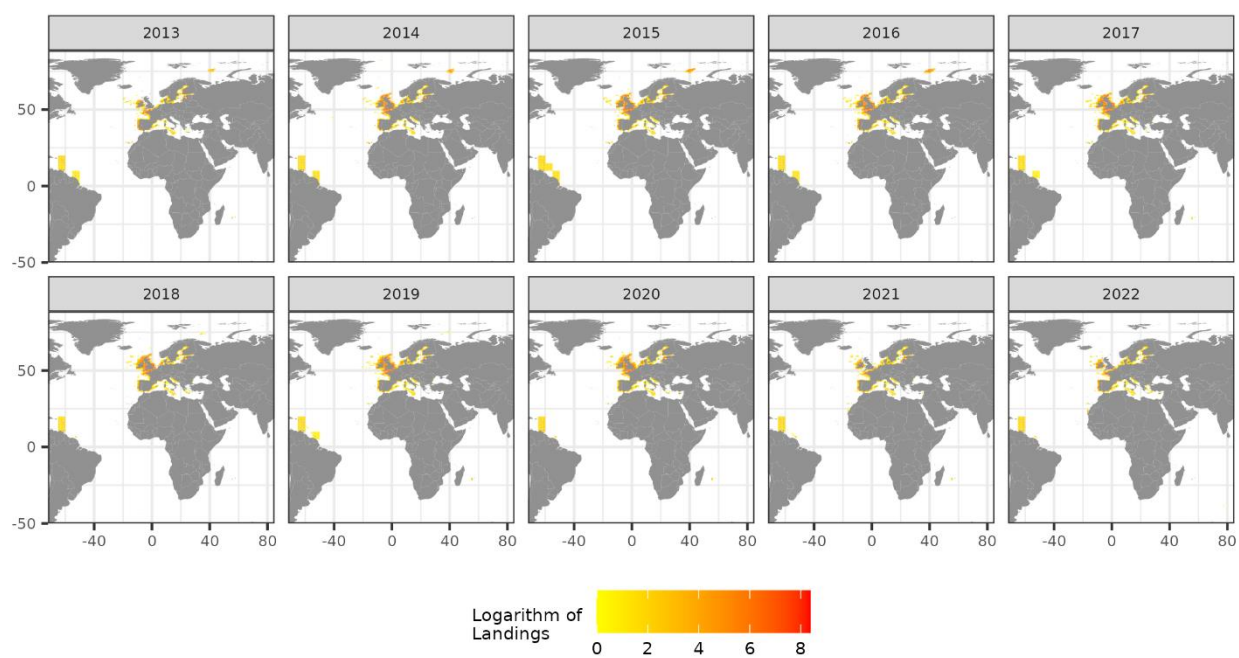


j) Trawlers with less than 100mm mesh size
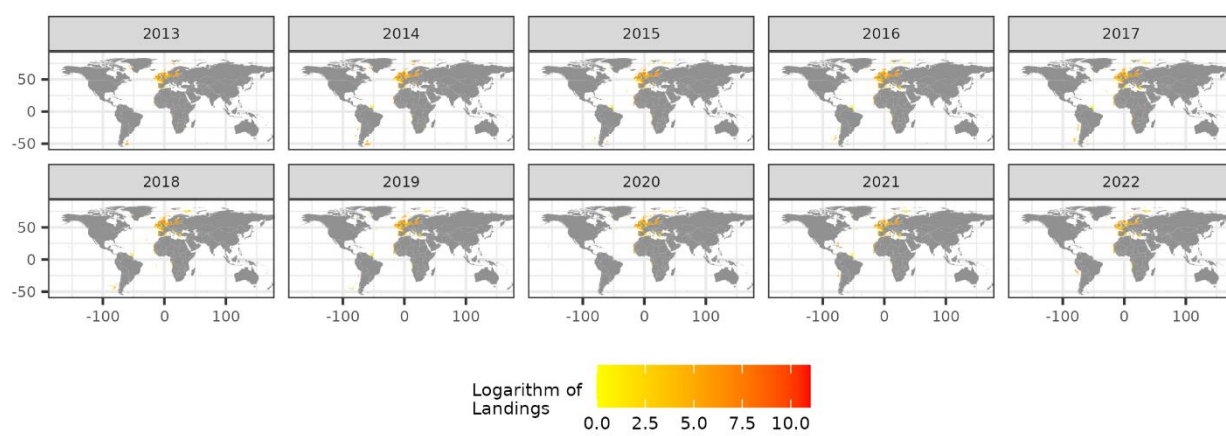
k) Trawlers with more than 100mm mesh size
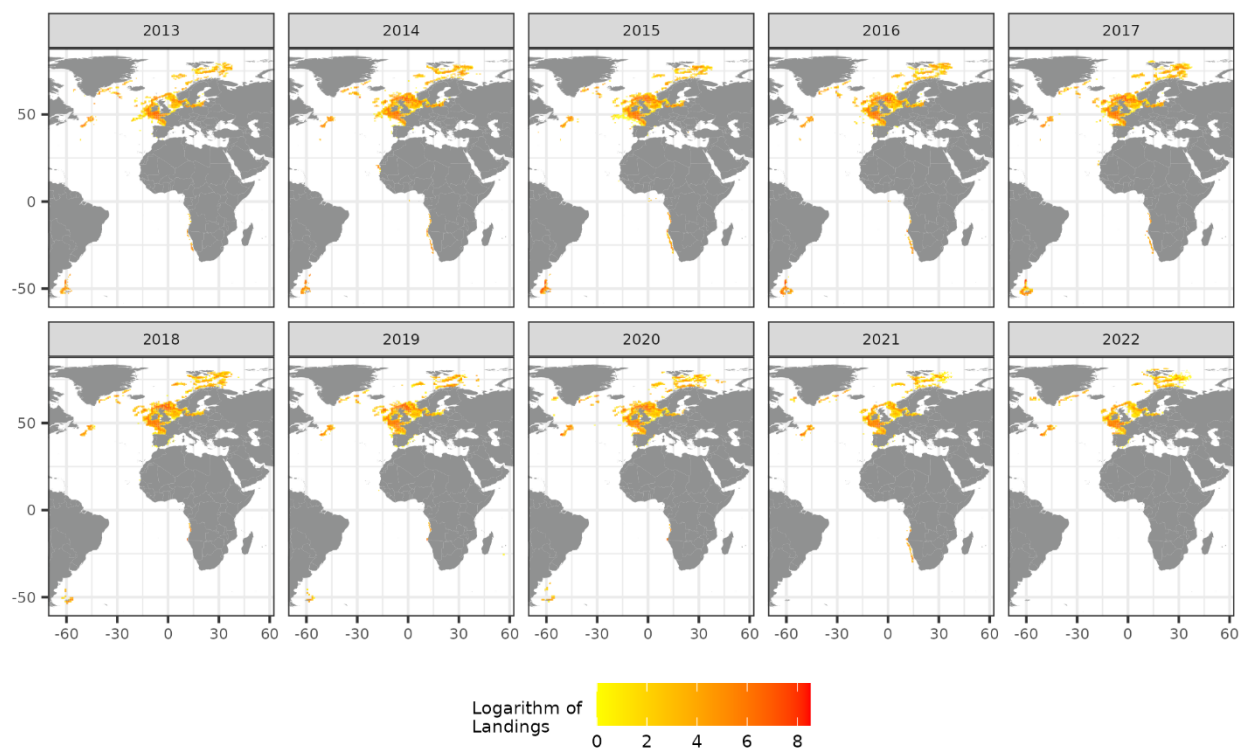


l)    Trawlers with unknown mesh size
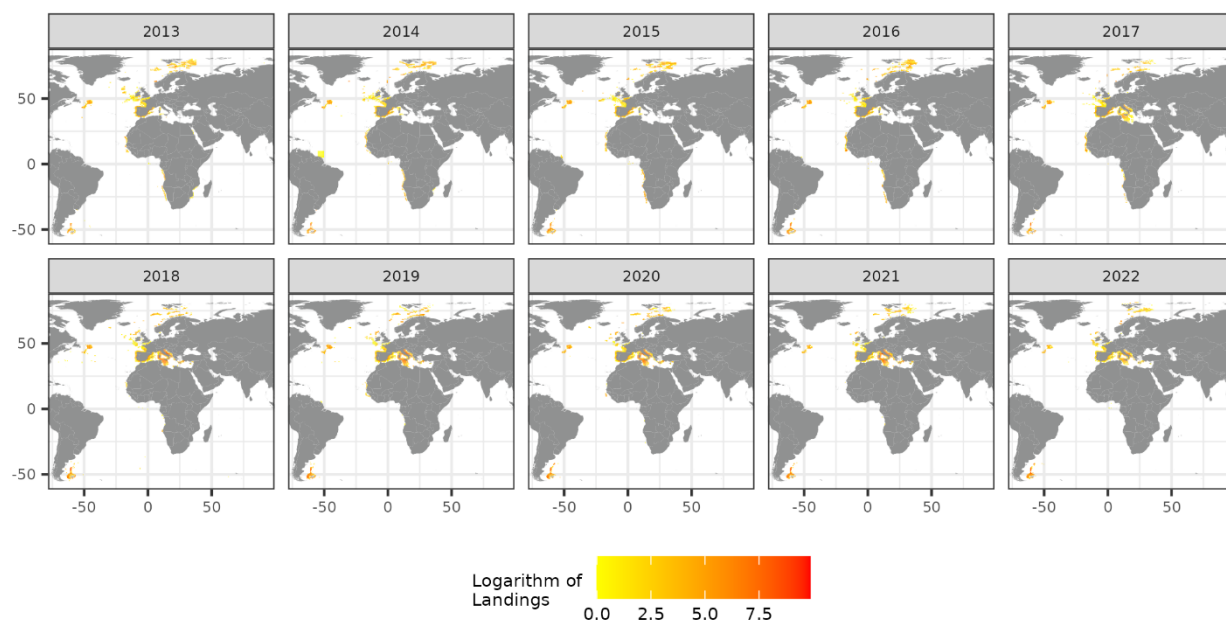


### Confidential data in spatial tables

Figures 3.3.4.5 and 3.3.4.6 below show the percentage of the data submitted in tables I and H that have been marked as confidential by region, gear type and year.

**Figure 3.3.4.5** Percentage of effort (fishing days) from table I (effort by rectangle) marked as confidential (red bars) and not confidential (green bars) by region, gear type and year for the period 2013-2022.
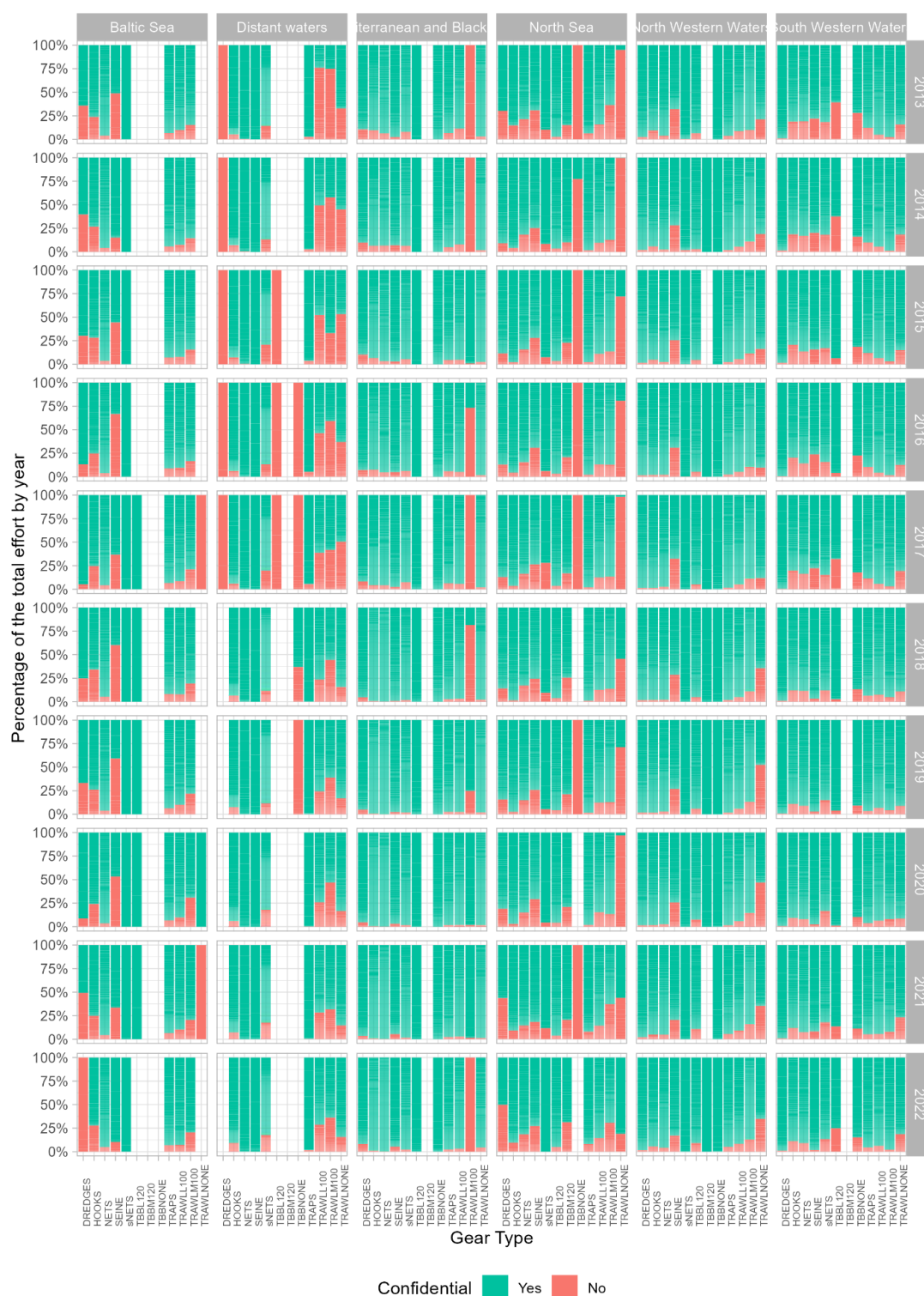
**Figure 3.3.4.6**: Percentage of landings weight from table H (landings by rectangle) marked as confidential (red bars) and not confidential (green bars) by region, gear type and year for the period 2013-2022.

### 3.4 Discuss data submission results following recent changes in the data call and definitions, assess feasibility to further extend time series

#### 3.4.1 Check consistency between new metier definitions and GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields

Some of the fields in the FDI tables are overlapping with the information that can be extracted from the Métier level 6 codes. It was therefore questioned if these fields are still needed and could be removed from the data call or the information is redundant. To check the consistency between the métier codes and the GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields uploaded by MS to the FDI data call, table G was used. UK data have been excluded from the analysis, as they have not resubmitted data with new métier codes. The results are based both on the full time series (2013-2022) and by looking only at 2022 data.

To check the consistency between the FDI field GEAR_TYPE and the gear type reported in the métier, which is the first part of the métier code, a check was made if the two codes are matching, and the fishing days were summed by country and if there is a match (Yes or No). Figure 3.4.1.1 shows the result of this analysis by MS as percentage of fishing days with matching codes for the whole period and figure 3.4.1.2 only for 2022.

The difference between the gear reported in the FDI GEAR_TYPE field and the métier level 6 gear type can be caused by the gear reported in logbooks is inserted in the GEAR_TYPE field, while the gear in the métier can be grouped gear codes, e.g., the gear codes from the logbooks OTB, OTT, PTB, TBN, TBS are grouped into the métier gear code OTB. In other cases the gear codes in the two fields belong to different gear groups. In some cases it is possible to report a gear code, e.g., DIV that is defined in the DCF table 5 in the métier code, but that code is not possible in the GEAR_TYPE field defined in the FDI data call appendix 4.

In summary, 96% of the effort by fishing day have matching gears between the two columns. Of the 4% by effort where the codes are not matching, 87% are within the same gear group, and the remaining 13% in different gear groups.

**Figure 3.4.1.1** Percent fishing days that where the métier level 4 gear codes are matching with the GEAR TYPE field reported in the FDI data call for the period 2013-2022. Orange indicates that the gear codes are the same, blue indicates that they are different.
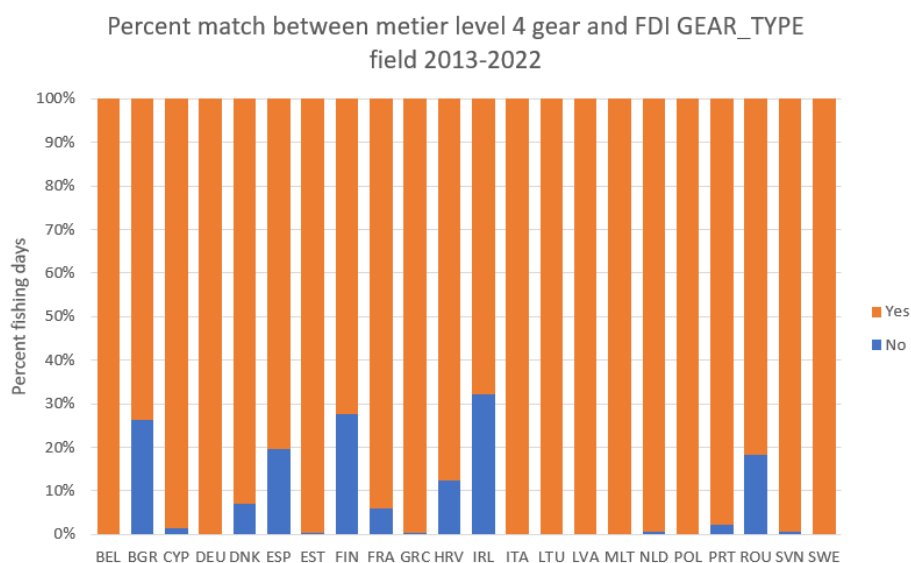


**Figure 3.4.1.2** Percent fishing days that where the métier level 4 gear codes are matching with the GEAR TYPE field reported in the FDI data call for 2022 data only. Orange indicates that the gear codes are the same, blue indicates that they are different.
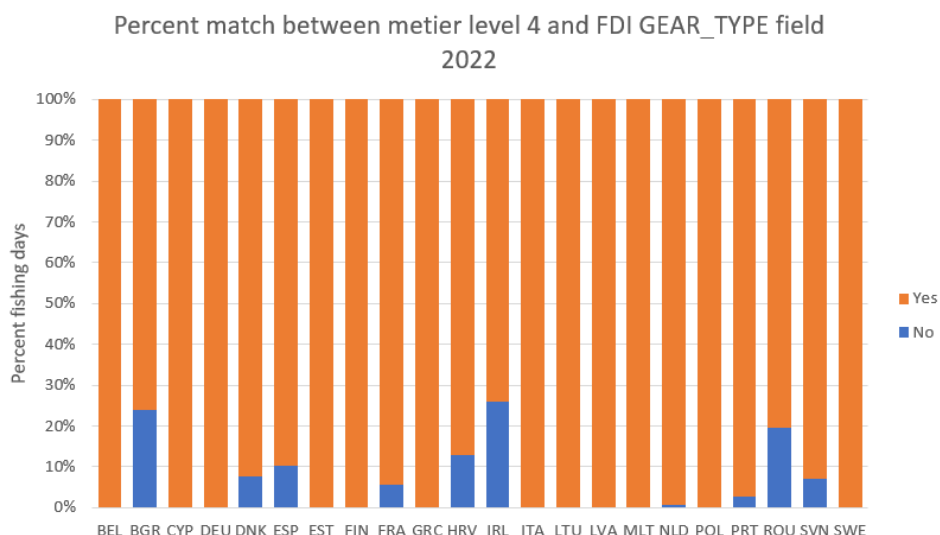
**Figure 3.4.1.3** Fishing days corresponding to each type of mismatch in gear between the metier (y-axis) and the FDI GEAR_TYPE (x-axis) in table G. The colour and the size of the circles represents the total fishing days.
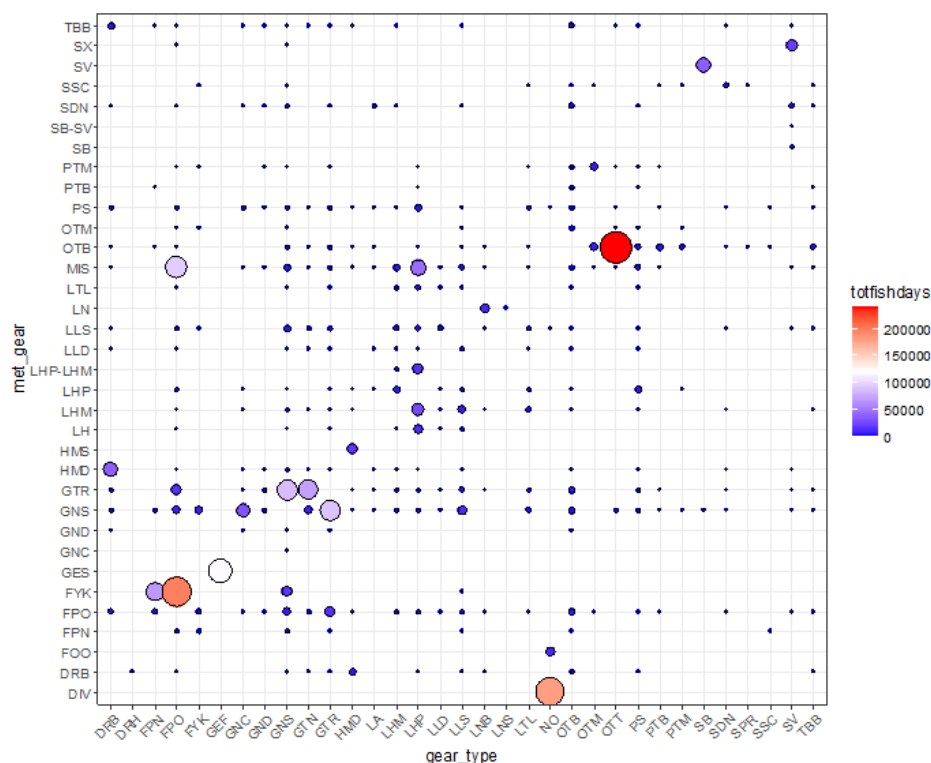


Another visualization of consistency between the metier code and the GEAR_TYPE is shown in Figure 3.4.1.3. The initial step was to extract the gear type from the metier in each record of the Table G (met_gear). The met_gear was then compared to the respective column (GEAR_TYPE) and the cases with inconsistencies were identified. In Figure 3.4.1.3, the total fishing days by inconsistency are plotted. The dots size and colour represent the amount of fishing days. For the most cases (mismatches between gear type in metier and in the respective column), the corresponding amount of fishing days is relatively low. Large numbers were found only for certain cases, and especially OTB-OTM, FYK- FPO, DIV-NO, MIS-FPO.

This comparison was also performed for each country separately (Figure 3.4.1.4). It should be noted that only the countries included in the 2022 FDI data call were included. The results show that the inconsistencies are pronounced only in certain countries, and especially Spain, followed by Denmark, Ireland and Portugal. In addition, the type of inconsistencies differs across these countries.

**Figure 3.4.1.4:** Fishing days corresponding to each type of mismatch in gear between the metier (y-axis) and the FDI GEAR_TYPE (x-axis) respective column by country. The colour and the size of the circles represents the total fishing days.



In addition, the results were plotted by Fishing zone (Figure 3.4.1.5), where it was shown that most of the inconsistencies concern South Western waters, followed by MED- BS.

**Figure 3.4.1.5** Fishing days corresponding to each type of mismatch in gear between the metier (y-axis) and the FDI GEAR_TYPE (x-axis) respective column by fishing zone. The colour and the size of the circles represents the total fishing days.

gear_type
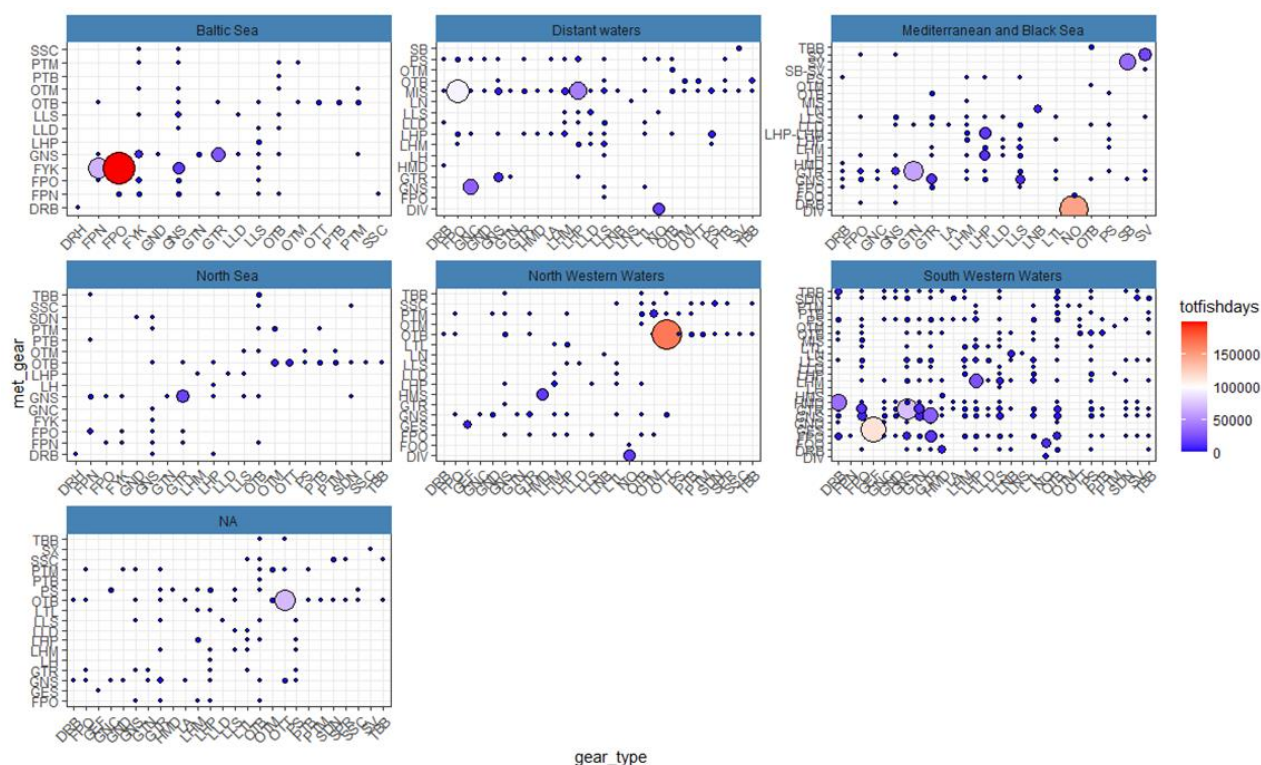
To evaluate the consistency between the FDI field TARGET_ASSEMBLAGE and the target assemblage reported in the métier, which is the second part of the métier code, a check was made if the two codes are matching, and the fishing days were summed by country and if there is a match (Yes or No). Figure 3.4.1.6 shows the result of this analysis by MS as percent of fishing days with matching codes for the whole period and the figure 3.4.1.7 only for 2022.

In summary, 95% of the effort by fishing day have target matching assemblages between the two columns. Of the 5% by effort where the codes are not matching, 51% are within the same target species group (e.g., DES vs. DEF), and the remaining 49% in different target assemblage groups. In some cases, the codes that it is possible to use in the two fields are not matching.

**Figure 3.4.1.6** Percent fishing days that where the métier level 5 target assemblage are matching with the TARGET ASSEMBLAGE field reported in the FDI data call for the period 2013-2022. Orange indicates that the target assemblage fields are the same, blue indicates that they are different.



Percent match between metier level 5 target assemblage and FDI TARGET_ASSEMBLAGE field 2013-2022
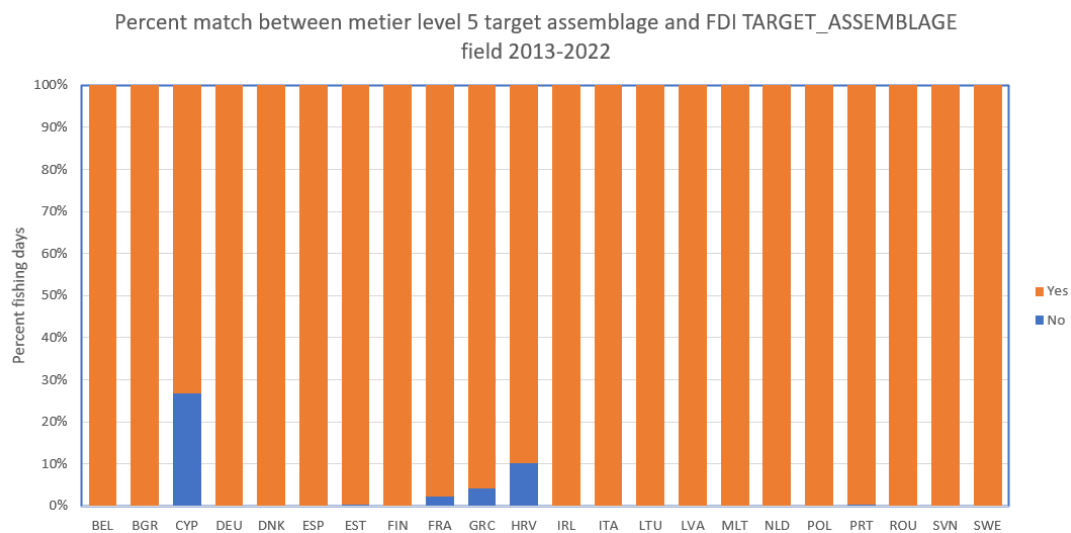
**Figure 3.4.1.7** Percent fishing days that where the métier level 5 target assemblage are matching with the TARGET ASSEMBLAGE field reported in the FDI data call for 2022 data only. Orange indicates that the target assemblages reported are the same, blue indicates that they are different.



Percent match between metier level 5 target assemblage and FDI TARGET_ASSEMBLAGE field - 2022 data
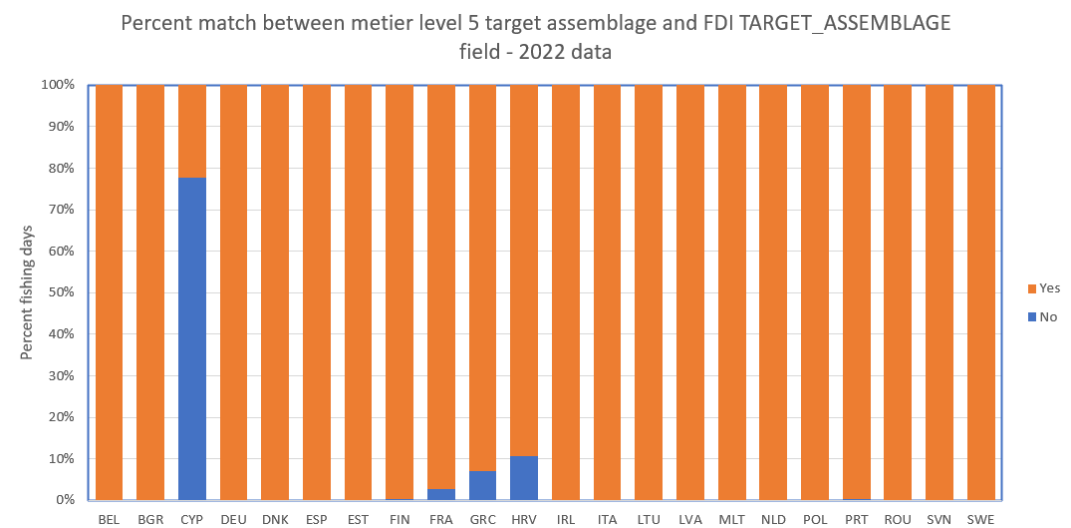
Inconsistencies between target assemblage as it appears in the métier and in the respective column of Table G are also visualized in Figure 3.4.1.8, where the total fishing days by inconsistency are plotted. The dots size and colour represent the amount of fishing days corresponding to each case. The number and the magnitude (in terms of corresponding fishing days) in most cases is comparatively low, while most of the inconsistencies refer to DEF-CEP and DEF- DES.

**Figure 3.4.1.8** Fishing days corresponding to each type of mismatch in target assemblage between the metier (y-axis) and the FDI TARGET_ASSEMBLAGE from table G. The colour and the size of the circles represents the amount.



Regarding the results on the countries level, it was shown that they concern only a limited number of countries and there are more cases in CYP and HRV (Figure 3.4.1.9).

**Figure 3.4.1.9** Fishing days corresponding to each type of mismatch in target assemblage between the metier (y-axis) and the FDI TARGET_ASSEMBLAGE from table G, by MS. The colour and the size of the circles represents the amount.



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The results are also presented by Fishing Zone (Figure 3.4.1.10), it is shown that most cases occur in the Mediterranean- Black Sea waters.

**Figure 3.4.1.10** Fishing days corresponding to each type of mismatch in target assemblage between the metier (y-axis) and the FDI TARGET_ASSEMBLAGE from table G, by fishing zone. The colour and the size of the circles represents the amount.
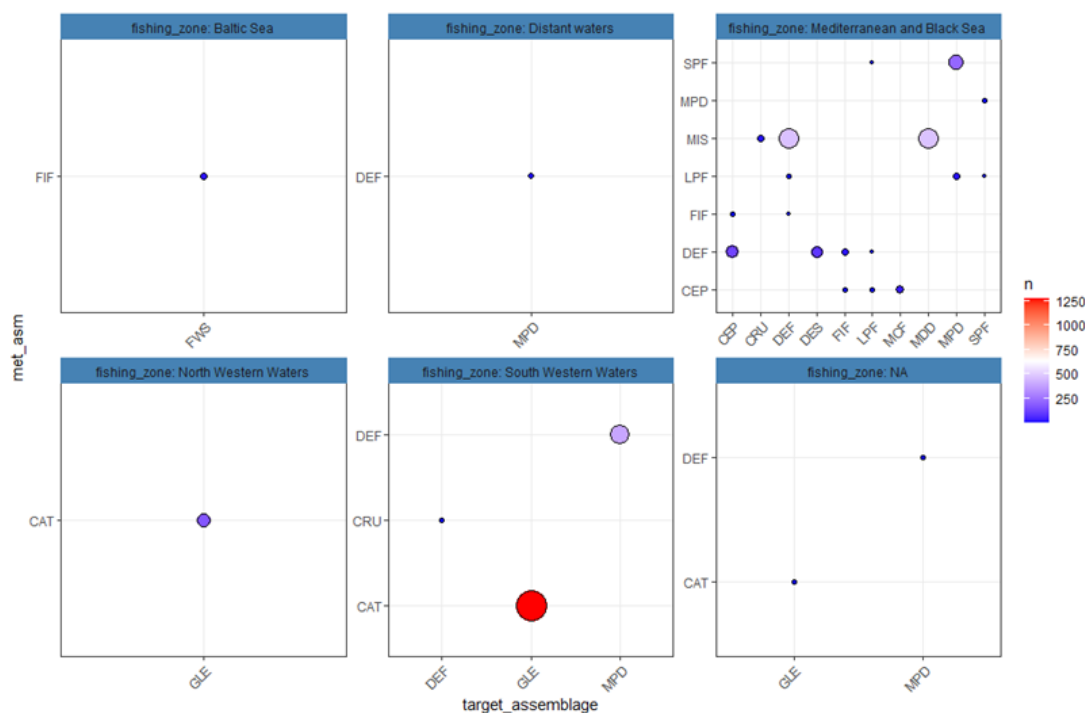


### Consistency check between FDI SPECON and metier codes

The observation of the matches between reported SPECON and the last part of provided métier codes are based on the full time series (2013-2022). In the FDI data call, it is possible to report on selection devices according to the codes defined in the Appendix 11: 'Coding of specific conditions related to technical measures', e.g., on the use of BACOMA or T90 or selection grids. In the manual for assigning métier codes to transversal data, the selection panel codes are listed. The combination of the selection panel code number and the selection panel mesh size indicates selective attachments. The code numbers established by the ISSG Métier are as follows:

0 - no selection device
1 - selection panel
2 - grid
3 - T90
4 - selection device and escape window with several mesh sizes.

Inconsistency between métier selection panel codes and the coding of specific conditions related to technical measures was noticed by EWG in several cases. Two Member States responding to the 2023 FDI data call provided data with incorrect métier or SPECON codes. The EWG noticed that there is no SPECON code for indication gear with both attachments' selection device and escape window. Table 3.4.1.1 shows an insignificant inconsistency.

**Table 3.4.1.1:** Inconsistency in métier coding of the selective attachments and specon codes by member states for 2013-2022 period.

| Country | Métier | Specon_tech | Comments |
|---------|--------|-------------|----------|
| SWE | OTB_DEF_>=120_3_120 | BACOMA | Inconsistency between specon code and attachment number code in métier |
| SWE | OTT_DEF_>=120_3_120 | BACOMA | Inconsistency between specon code and attachment number code in métier |
| SWE | OTM_DEF_>=120_3_120 | BACOMA | Inconsistency between specon code and attachment number code in métier |
| SWE | OTB_CRU_32-69_2_22 | GRID19 | Inconsistency between specon code and mesh size of attachment |
| SWE | OTT_CRU_32-69_2_22 | GRID19 | Inconsistency between specon code and mesh size of attachment |
| SWE | OTB_CRU_70-89_2_35 | GRID19 | Inconsistency between specon code and mesh size of attachment |
| FIN | OTM_DEF_105-115_1_120 | T90 | Inconsistency between specon code and attachment number code in métier |
| SWE | OTB_DEF_105-115_1_120 | T90 | Inconsistency between specon code and attachment number code in métier |
| SWE | OTT_DEF_105-115_1_120 | T90 | Inconsistency between specon code and attachment number code in métier |
| SWE | OTM_DEF_105-115_1_120 | T90 | Inconsistency between specon code and attachment number code in métier |
| SWE | OTB_CRU_90-99_4_35 | GRID35 | No specon code for both selection device and escape window attached to one gear |
| SWE | OTT_CRU_90-99_4_35 | GRID35 | No specon code for both selection device and escape window attached to one gear |
| SWE | NK | GRID35 | Only specon specified. |
| SWE | NK | SELTRA | Only specon specified. |

The check for inconsistencies between reported métier and specon data showed that in some cases the Member States had not indicated selective devices in both fields. Thirty-seven unique métier codes were identified where selective devices are reported in the métier code but not reported in the SPECON field (orange bars in figure 3.4.1.11) and twenty-nine unique métier codes where selective devices were not reported in the métier field but reported in the SPECON field (blue bars in figure 3.4.1.11). Eight Member States were inconsistent with the reporting métier and SPECON fields. Figure 3.4.1.11 shows the result of métier and SPECON codes analysis on mismatching fields by MS for the entire period of 2013-2022.

**Figure 3.4.1.11:** Number of unique métiers where selective devices were indicated in the metier code, but not in the SPECON field (orange) or where selective devices were reported in the SPECON field, but not in the metier code (blue) during the years 2013-2022.
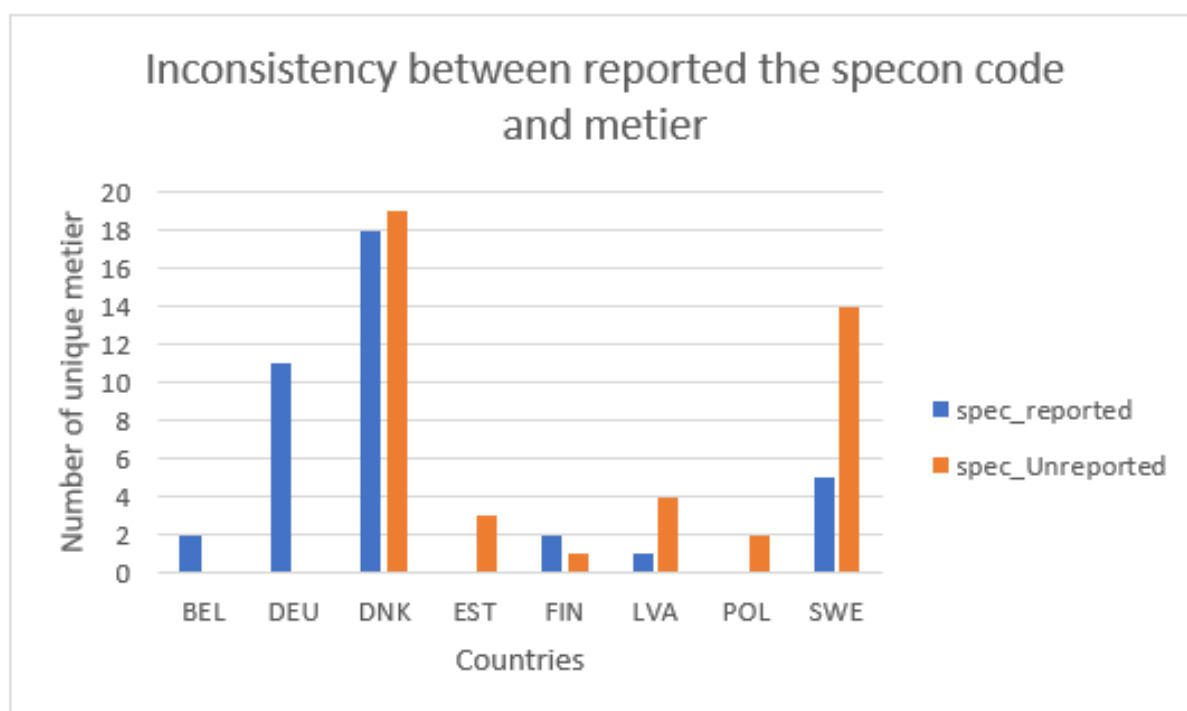


It can be concluded that there are currently inconsistencies between the new métier definitions and the GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields. In some cases there are good explanations to this, in others, there are inconsistencies in the coding. The EWG encourages the MS to look at the consistency between the SPECON field and the metier selection panel codes or explain the inconsistencies in the National Chapters in 2024.

### 3.4.2 Discuss results of the re-submission of the time series

For the 2023 FDI data call, MS were requested to resubmit the full time series with the new métier codes that have been agreed by RCGs and with EEZ indicators that include a code to indicate if the fishery took place in UK waters. The change in codes affects the tables A, G, H and I.

Table 3.4.2.1 shows the FDI data submissions in 2023 with the number of records by MS, table and year. It can be concluded that 3 MS have not resubmitted the full time series where there are still old metier codes in the database.

**Table 3.4.2.1:** Submission of tables by MS, table and year. Number of records.

|  | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| **BEL** | | | | | | | | | | |
| TABLE_A | 6802 | 6881 | 6674 | 6620 | 6616 | 7109 | 7387 | 7615 | 4892 | 5345 |
| TABLE_B | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| TABLE_C | 114 | 87 | 81 | 71 | 85 | 169 | 104 | 125 | 114 | 129 |
| TABLE_D | 568 | 640 | 527 | 578 | 455 | 545 | 542 | 590 | 743 | 1111 |
| TABLE_E | 192 | 160 | 197 | 188 | 191 | 295 | 206 | 288 | 259 | 321 |
| TABLE_F | 1150 | 1013 | 966 | 1030 | 820 | 1059 | 930 | 1195 | 1705 | 1920 |
| TABLE_G | 284 | 290 | 253 | 256 | 245 | 267 | 273 | 275 | 267 | 259 |
| TABLE_H | 14919 | 14993 | 15139 | 16047 | 16427 | 18068 | 18236 | 17562 | 10483 | 10949 |

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| TABLE_I | 697 | 689 | 638 | 705 | 698 | 796 | 746 | 748 | 741 | 771 |
| TABLE_J | 19 | 18 | 16 | 17 | 15 | 16 | 15 | 17 | 16 | 14 |
| TABLE_K | 38 | 28 | 37 | 42 | 32 | 27 | 28 | 33 | 26 | 37 |
| **BGR** | | | | | | | | | | |
| TABLE_A | 944 | 987 | 863 | 1000 | 804 | 872 | 866 | 1019 | 860 | 768 |
| TABLE_B | | | | | | 4 | 4 | 4 | 4 | 4 |
| TABLE_G | 301 | 317 | 302 | 314 | 280 | 311 | 339 | 333 | 333 | 299 |
| TABLE_H | | | | | 1925 | 1933 | 1960 | 2074 | 1893 | 853 |
| TABLE_I | | | | | 894 | 907 | 1015 | 910 | 970 | 366 |
| TABLE_J | 26 | 27 | 27 | 29 | 29 | 28 | 28 | 28 | 28 | 27 |
| **CYP** | | | | | | | | | | |
| TABLE_A | | | | 1671 | | | | | | 2261 |
| TABLE_B | | | | | | | | | | 3 |
| TABLE_G | | | | | | 104 | | | | 105 |
| TABLE_H | | | | | 5347 | 5561 | 6230 | 5375 | 3842 | 6026 |
| TABLE_I | | | | | 451 | 479 | 487 | 373 | 226 | 367 |
| TABLE_J | | | | | | | | | | 7 |
| **DEU** | | | | | | | | | | |
| TABLE_A | 6300 | 6443 | 6760 | 6452 | 5836 | 5715 | 6451 | 5929 | 5242 | 5133 |
| TABLE_B | | | | | | | | | | 9 |
| TABLE_C | 413 | 528 | 549 | 689 | 445 | 324 | 220 | 164 | 116 | 126 |
| TABLE_D | 1143 | 1619 | 1484 | 1690 | 967 | 651 | 793 | 656 | 570 | 576 |
| TABLE_E | 1399 | 1472 | 1236 | 1699 | 1869 | 1314 | 1077 | 885 | 843 | 747 |
| TABLE_F | 4303 | 4570 | 4116 | 5890 | 6066 | 4895 | 5458 | 4377 | 3851 | 3471 |
| TABLE_G | 892 | 908 | 900 | 867 | 815 | 844 | 846 | 760 | 696 | 646 |
| TABLE_H | 14781 | 14619 | 15972 | 15915 | 14232 | 14269 | 16211 | 14593 | 13558 | 12362 |
| TABLE_I | 2718 | 2573 | 2667 | 2706 | 2456 | 2502 | 2582 | 2387 | 2238 | 2028 |
| TABLE_J | | | | | | | | | 51 | 51 |
| **DNK** | | | | | | | | | | |
| TABLE_A | 28402 | 29633 | 32288 | 33158 | 33373 | 34166 | 35550 | 31161 | 26429 | 24080 |
| TABLE_B | 6 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 5 |
| TABLE_C | | | | | | | | | 341 | 346 |
| TABLE_D | | | | | | | | | 4041 | 3611 |
| TABLE_E | | | | | | | | | 943 | 882 |
| TABLE_F | | | | | | | | | 5484 | 5136 |
| TABLE_G | 2594 | 2593 | 2597 | 2526 | 2434 | 2403 | 2367 | 2453 | 1911 | 1859 |
| TABLE_H | 57254 | 59115 | 65208 | 69666 | 69040 | 69813 | 69940 | 66258 | 60266 | 50275 |
| TABLE_I | 6727 | 6643 | 6959 | 6985 | 6851 | 6969 | 6717 | 6835 | 5727 | 5138 |
| TABLE_J | 103 | 102 | 101 | 97 | 97 | 92 | 87 | 84 | 40 | 83 |
| TABLE_K | | | | | | | | | 2653 | 2496 |
| **ESP** | | | | | | | | | | |
| | 12540 | 12873 | 10528 | 11312 | 12123 | 10446 | 10144 | | | |
| TABLE_A | 4 | 3 | 0 | 5 | 1 | 5 | 5 | 90549 | 94315 | 96229 |
| TABLE_B | | | 5 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| TABLE_C | | 88 | 10 | 219 | 567 | 557 | 346 | 100 | 423 | 36 |
| TABLE_D | | 3304 | 5611 | 8042 | 7526 | 12485 | 8319 | 3991 | 10936 | 11292 |
| TABLE_E | 130 | 428 | 179 | 198 | 1023 | 812 | 810 | 237 | 841 | 88 |
| TABLE_F | 16400 | 14455 | 6920 | 7557 | 9018 | 21509 | 22400 | 7357 | 8063 | 34605 |
| TABLE_G | 9780 | 8632 | 7785 | 8179 | 8422 | 7141 | 7238 | 6235 | 6141 | 5843 |
| | 30164 | 32212 | 30220 | 32120 | 33150 | 25186 | 25877 | 24085 | 27831 | |
| TABLE_H | 6 | 4 | 0 | 7 | 8 | 0 | 1 | 5 | 6 | 290072 |
| TABLE_I | 45159 | 44116 | 40758 | 42995 | 42989 | 36527 | 37828 | 33504 | 34063 | 35440 |
| TABLE_J | 317 | 319 | 303 | 281 | 294 | 198 | 200 | 194 | 199 | 18 |

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| **EST** | | | | | | | | | | |
| TABLE_A | 1077 | 1082 | 1006 | 931 | 957 | 899 | 929 | 942 | 923 | 1158 |
| TABLE_B | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| TABLE_C | 346 | 332 | 291 | 292 | 308 | 323 | 315 | 322 | 340 | 322 |
| TABLE_D | 379 | 338 | 291 | 339 | 374 | 641 | 438 | 470 | 791 | 550 |
| TABLE_E | 507 | 464 | 438 | 466 | 497 | 476 | 454 | 462 | 485 | 470 |
| TABLE_F | 1302 | 1058 | 652 | 669 | 1206 | 1238 | 1010 | 1145 | 1583 | 1080 |
| TABLE_G | 77 | 158 | 157 | 129 | 135 | 107 | 121 | 124 | 121 | 135 |
| TABLE_H | 2162 | 2186 | 1023 | 926 | 2001 | 1925 | 2001 | 2042 | 2007 | 2437 |
| TABLE_I | 127 | 172 | 133 | 109 | 127 | 135 | 299 | 298 | 274 | 348 |
| TABLE_J | 10 | 11 | 11 | 9 | 8 | 8 | 8 | 9 | 8 | 8 |
| **FIN** | | | | | | | | | | |
| TABLE_A | 2342 | 1916 | 2248 | 2457 | 1879 | 1919 | 1949 | 2114 | 2093 | 1821 |
| TABLE_B | | | | | | 1 | 14 | 17 | 17 | 17 |
| TABLE_C | 93 | 104 | 100 | 92 | 122 | 122 | 154 | 150 | 133 | 133 |
| TABLE_D | 450 | 430 | 482 | 501 | 438 | 407 | 517 | 637 | 597 | 791 |
| TABLE_E | 602 | 613 | 613 | 617 | 608 | 651 | 633 | 645 | 644 | 659 |
| TABLE_F | 2060 | 2003 | 2094 | 1901 | 1701 | 1881 | 1746 | 2112 | 1968 | 2244 |
| TABLE_G | 420 | 352 | 373 | 413 | 352 | 360 | 340 | 321 | 346 | 332 |
| TABLE_H | 5149 | 5276 | 5532 | 5985 | 5158 | 5226 | 4950 | 4633 | 4254 | 4065 |
| TABLE_I | 1124 | 1174 | 1268 | 1414 | 1248 | 1221 | 1169 | 1034 | 1069 | 1035 |
| TABLE_J | 28 | 32 | 21 | 21 | 22 | 21 | 21 | 22 | 17 | 16 |
| **FRA** | | | | | | | | | | |
| | 18734 | 18358 | 17797 | 17161 | 17220 | 16745 | 17056 | 16353 | 16639 | |
| TABLE_A | 7 | 4 | 2 | 4 | 6 | 0 | 3 | 9 | 4 | 165151 |
| TABLE_B | | | | | | | | | | 20 |
| TABLE_C | 1669 | 1723 | 1820 | 1948 | 1959 | 1670 | 1556 | 592 | 976 | 1227 |
| TABLE_D | 5991 | 7590 | 7795 | 9017 | 8090 | 7284 | 11722 | 6169 | 7898 | 10983 |
| TABLE_E | 8484 | 8778 | 8404 | 8715 | 8116 | 7982 | 8037 | 7017 | 7259 | 6662 |
| TABLE_F | 38326 | 42770 | 42101 | 44314 | 40199 | 39917 | 39711 | 29492 | 32705 | 33731 |
| TABLE_G | 13310 | 12898 | 12374 | 11837 | 11989 | 11797 | 11835 | 11472 | 11646 | 11688 |
| | 65769 | 63812 | 63826 | 62487 | 63332 | 63462 | 65211 | 61815 | 61780 | |
| TABLE_H | 7 | 2 | 2 | 3 | 7 | 7 | 4 | 8 | 5 | 597755 |
| TABLE_I | 53642 | 52013 | 51989 | 51479 | 52468 | 52648 | 53112 | 49912 | 50894 | 49873 |
| TABLE_J | 306 | 311 | 306 | 304 | 292 | 289 | 295 | 290 | 287 | 288 |
| **GRC** | | | | | | | | | | |
| TABLE_A | 528 | 2053 | 837 | 3061 | 2710 | 3675 | 3401 | 3485 | 3794 | 5051 |
| TABLE_G | 64 | 155 | 117 | 210 | 100 | 228 | 220 | 215 | 218 | 226 |
| TABLE_H | | | | 14890 | 15673 | 16309 | 16062 | 14727 | 14090 | 19449 |
| TABLE_I | 1583 | 1584 | 1572 | 1640 | 1737 | 4332 | 4339 | 4195 | 4116 | 5344 |
| TABLE_J | 53 | 53 | 53 | 54 | 54 | 53 | 53 | 52 | 52 | 52 |
| **HRV** | | | | | | | | | | |
| TABLE_A | 13234 | 13372 | 12874 | 12608 | 11726 | 11979 | 13368 | 12931 | 12933 | 12902 |
| TABLE_B | 19 | 19 | 20 | 19 | 20 | 20 | 18 | 18 | 17 | 18 |
| TABLE_G | 1030 | 1036 | 997 | 928 | 962 | 916 | 962 | 934 | 831 | 796 |
| | | 10282 | | | | | 11623 | 11507 | 11329 | |
| TABLE_H | | 5 | 99855 | 98912 | 95686 | 99891 | 3 | 1 | 6 | 113857 |
| TABLE_I | 13105 | 13000 | 12661 | 12114 | 12090 | 12163 | 12932 | 12809 | 11819 | 11710 |
| TABLE_J | 40 | 40 | 39 | 36 | 40 | 33 | 37 | 37 | 36 | 34 |
| **IRL** | | | | | | | | | | |
| TABLE_A | 18672 | 19860 | 21464 | 21758 | 20115 | 18942 | 18602 | 17056 | 17218 | 14972 |
| TABLE_B | | | | | 3 | 3 | 4 | 3 | 3 | 3 |
| TABLE_C | | | | | | | | | | 1308 |

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| TABLE_D | | | | | | | | | | 4611 |
| TABLE_E | | | | | | | | | | 1622 |
| TABLE_F | | | | | | | | | | 9155 |
| TABLE_G | 2807 | 2825 | 2801 | 2803 | 2575 | 2391 | 2467 | 2354 | 3027 | 2632 |
| TABLE_H | 30959 | 32491 | 33393 | 34092 | 33406 | 31115 | 30739 | 27598 | 28430 | 23462 |
| TABLE_I | 5021 | 5174 | 4984 | 5122 | 5016 | 4740 | 4834 | 4510 | 4514 | 3758 |
| TABLE_J | 101 | 108 | 102 | 99 | 102 | 99 | 99 | 98 | 97 | 97 |
| **ITA** | | | | | | | | | | |
| TABLE_A | 15425 | 19307 | 19857 | 19388 | 21181 | 35838 | 43077 | 41790 | 31443 | 38728 |
| TABLE_B | 1 | | | | | | | | | 1 |
| TABLE_G | 877 | 994 | 1060 | 1033 | 1364 | 1603 | 1742 | 1768 | 1668 | 2358 |
| TABLE_H | | | | | | 25385 | 26806 | 28317 | 28287 | 9549 |
| TABLE_I | 6630 | 6657 | 6766 | 7485 | 7046 | 7431 | 6501 | 6943 | 4324 | 1905 |
| TABLE_J | 122 | 108 | 109 | 118 | 115 | 127 | 141 | 141 | 142 | 154 |
| **LTU** | | | | | | | | | | |
| TABLE_A | 499 | 706 | 553 | 582 | 546 | 633 | 601 | 596 | 495 | 482 |
| TABLE_B | 5 | 6 | 5 | 5 | 5 | 5 | 15 | 20 | 28 | 2 |
| TABLE_C | 73 | 54 | 70 | 53 | 78 | 45 | 20 | 11 | | |
| TABLE_D | 211 | 202 | 103 | 65 | 97 | 58 | 34 | 24 | | |
| TABLE_E | 255 | 156 | 191 | 179 | 127 | 120 | 130 | 161 | 246 | 174 |
| TABLE_F | 599 | 434 | 583 | 514 | 500 | 316 | 177 | 443 | 523 | 384 |
| TABLE_G | 128 | 155 | 161 | 155 | 170 | 173 | 147 | 131 | 128 | 122 |
| TABLE_H | 591 | 1446 | 1039 | 1266 | 1631 | 1691 | 1535 | 1619 | 1353 | 1366 |
| TABLE_I | 196 | 482 | 496 | 480 | 663 | 557 | 476 | 482 | 456 | 471 |
| TABLE_J | 15 | 16 | 16 | 18 | 17 | 16 | 16 | 13 | 13 | 12 |
| **LVA** | | | | | | | | | | |
| TABLE_A | 723 | 700 | 721 | 741 | 787 | 814 | 823 | 995 | 936 | 981 |
| TABLE_B | | | | | | | | | | 3 |
| TABLE_C | | | | | | | | | | 7 |
| TABLE_D | | | | | | | | | | 33 |
| TABLE_E | | | | | | | | | 219 | 248 |
| TABLE_F | | | | | | | | | 353 | 405 |
| TABLE_G | 137 | 152 | 137 | 140 | 146 | 151 | 147 | 163 | 180 | 144 |
| TABLE_H | 1448 | 1454 | 1576 | 1782 | 1798 | 1814 | 1794 | 2426 | 2007 | 1849 |
| TABLE_I | 381 | 358 | 483 | 521 | 484 | 481 | 482 | 515 | 464 | 388 |
| TABLE_J | 5 | 5 | 7 | 7 | 6 | 7 | 8 | 7 | 9 | 9 |
| **MLT** | | | | | | | | | | |
| TABLE_A | | | | | | | | | | |
| TABLE_G | | 285 | 413 | 486 | 432 | 411 | 423 | 382 | 411 | 421 |
| TABLE_H | | 2069 | 3938 | 3940 | 3720 | 3568 | 3950 | 3568 | 4629 | 4804 |
| TABLE_I | | 284 | 776 | 867 | 758 | 605 | 763 | 728 | 969 | 1037 |
| TABLE_J | | 25 | 25 | 26 | 23 | 24 | 24 | 22 | 24 | 24 |
| **NLD** | | | | | | | | | | |
| TABLE_A | 7747 | 7279 | 9133 | 8849 | 8751 | 8290 | 8852 | 9475 | 8759 | 7923 |
| TABLE_B | | | | | | | | | 3 | 3 |
| TABLE_C | 181 | 189 | 222 | 221 | 282 | 321 | 383 | 258 | 265 | 264 |
| TABLE_D | 1073 | 1394 | 966 | 1013 | 1200 | 1698 | 2029 | 1795 | 1586 | 1557 |
| TABLE_E | 275 | 206 | 548 | 492 | 536 | 534 | 532 | 730 | 633 | 454 |
| TABLE_F | | | 638 | 1613 | 1159 | 1282 | 934 | 784 | 1243 | 847 |
| TABLE_G | 907 | 907 | 933 | 943 | 909 | 632 | 795 | 828 | 749 | 723 |
| TABLE_H | 18853 | 19562 | 24692 | 24702 | 25542 | 26115 | 28726 | 29199 | 27364 | 22205 |
| TABLE_I | 2578 | 2651 | 2839 | 2824 | 2901 | 2642 | 3150 | 3157 | 2943 | 2525 |
| TABLE_J | 66 | 55 | 56 | 54 | 59 | 49 | 52 | 57 | 56 | 58 |

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|
| TABLE_K | | | | | | | | | 56 | 31 |
| **POL** | | | | | | | | | | |
| TABLE_A | 1832 | 2252 | 2174 | 2267 | 2345 | 2224 | 2200 | 2265 | 2510 | 2178 |
| TABLE_B | | | | | 15 | 15 | 15 | 6 | 6 | 6 |
| TABLE_C | 41 | 63 | 65 | 51 | 52 | 31 | 45 | 48 | 19 | 29 |
| TABLE_D | 312 | 392 | 337 | 268 | 264 | 172 | 205 | 281 | 207 | 172 |
| TABLE_E | 651 | 777 | 791 | 710 | 653 | 411 | 603 | 470 | 577 | 546 |
| TABLE_F | 2155 | 2484 | 2628 | 2194 | 2098 | 1374 | 1658 | 1082 | 1307 | 1209 |
| TABLE_G | 546 | 634 | 554 | 559 | 577 | 558 | 543 | 540 | 597 | 523 |
| TABLE_H | 4157 | 4997 | 5072 | 5513 | 5373 | 5324 | 4616 | 4450 | 4871 | 3848 |
| TABLE_I | 1546 | 1803 | 1705 | 1824 | 1700 | 1650 | 1495 | 1367 | 1489 | 1192 |
| TABLE_J | 28 | 27 | 26 | 27 | 32 | 28 | 28 | 29 | 30 | 28 |
| TABLE_K | 66 | 89 | 94 | 83 | 86 | 77 | 94 | 35 | 59 | 61 |
| **PRT** | | | | | | | | | | |
| TABLE_A | 43419 | 42935 | 50136 | 48264 | 51238 | 51196 | 48865 | 45898 | 45116 | 45255 |
| TABLE_B | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 11 | 1 |
| TABLE_C | 15 | 16 | 15 | 16 | 15 | 14 | 14 | 16 | 16 | 16 |
| TABLE_D | 84 | 89 | 82 | 75 | 98 | 71 | 110 | 91 | 91 | 91 |
| TABLE_E | 139 | 162 | 161 | 160 | 145 | 131 | 115 | 129 | 139 | 121 |
| TABLE_F | 2971 | 2910 | 3211 | 3394 | 3454 | 3025 | 2446 | 1859 | 2838 | 2939 |
| TABLE_G | 2944 | 3036 | 3434 | 3448 | 3363 | 3476 | 3223 | 3156 | 3073 | 3414 |
| | 11569 | 11432 | 13010 | 12780 | 13618 | 13378 | 13004 | 12129 | 11338 | |
| TABLE_H | 8 | 1 | 5 | 6 | 9 | 2 | 9 | 1 | 1 | 107841 |
| TABLE_I | 12083 | 11720 | 12260 | 13312 | 13549 | 13518 | 13047 | 11753 | 11142 | 10809 |
| TABLE_J | 78 | 77 | 67 | 71 | 68 | 64 | 66 | 68 | 66 | 75 |
| TABLE_K | 77 | 81 | 87 | 92 | 101 | 94 | 87 | 85 | 82 | 88 |
| **ROU** | | | | | | | | | | |
| TABLE_A | 205 | 175 | 212 | 183 | 176 | 178 | 262 | 257 | 235 | 294 |
| TABLE_G | 66 | 69 | 78 | 73 | 71 | 68 | 67 | 76 | 89 | 99 |
| TABLE_H | 32 | 45 | 26 | 28 | 32 | 26 | 32 | 45 | 50 | 66 |
| TABLE_I | 20 | 23 | 23 | 21 | 22 | 19 | 22 | 23 | 30 | 33 |
| TABLE_J | 7 | 7 | 8 | 9 | 8 | 9 | 9 | 8 | 10 | 10 |
| **SVN** | | | | | | | | | | |
| TABLE_A | | | | | | | | | | 1137 |
| TABLE_B | | | | | | | | | | 1 |
| TABLE_G | | | | | | | | | | 107 |
| TABLE_H | | | | | | | | | | 1137 |
| TABLE_I | | | | | | | | | | 107 |
| TABLE_J | | | | | | | | | | 11 |
| **SWE** | | | | | | | | | | |
| TABLE_A | 19222 | 13460 | 13764 | 14555 | 13209 | 13144 | 13348 | 7966 | 8222 | 12353 |
| TABLE_B | | | | | | | | | | 32 |
| TABLE_C | | | 1426 | | | | | | | 1409 |
| TABLE_D | | | 3879 | | | | | | | 3999 |
| TABLE_E | | | | | | | | | | 223 |
| TABLE_F | | | | | | | | | | 1355 |
| TABLE_G | 1907 | 1748 | 1688 | 1672 | 1503 | 1452 | 1335 | 1273 | 1202 | 1160 |
| TABLE_H | 15084 | 13810 | 14059 | 14239 | 13068 | 12633 | 12415 | 12179 | 11257 | 13132 |
| TABLE_I | 4448 | 4012 | 3922 | 3855 | 3557 | 3331 | 3047 | 2924 | 2794 | 2605 |
| TABLE_J | 112 | 114 | 119 | 108 | 103 | 106 | 107 | 90 | 98 | 92 |

*Evaluation of the upload of new métier codes*

During the resubmission of the full time series, it is not possible to submit the old métier codes. The EWG performed a check if old codes still exist in the database, by MS for each table. UK data were excluded for this analysis as they have not resubmitted to the FDI data with the new métier codes. In table 3.4.2.2 the number of old métier codes that still exist in the FDI database by MS, table and year are listed. This is only possible where data have not been resubmitted.

**Table 3.4.2.2:** Number of old métier codes still in the database by MS, table and year

|         | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------|------|------|------|------|------|------|------|------|------|
| **CYP** |      |      |      |      |      |      |      |      |      |
| Table A |      |      | 3    |      | 1    |      | 2    | 1    | 3    |
| Table G |      |      |      |      |      |      | 2    | 1    | 3    |
| **MLT** |      |      |      |      |      |      |      |      |      |
| Table A | 8    | 8    | 8    | 7    | 6    | 7    | 8    | 8    | 7    |
| Table G | 8    |      |      |      |      |      |      |      |      |
| Table H | 8    |      |      |      |      |      |      |      |      |
| Table I | 8    |      |      |      |      |      |      |      |      |
| **SVN** |      |      |      |      |      |      |      |      |      |
| Table A | 2    | 3    | 3    | 2    | 2    | 1    | 3    | 2    | 2    |
| Table G | 2    | 3    | 3    | 2    | 2    | 1    | 2    | 2    | 2    |
| Table H |      |      | 3    | 2    | 2    | 1    | 3    | 2    | 2    |
| Table I |      |      | 3    | 2    | 2    | 1    | 3    | 2    | 2    |

In in the cases where there is an easy recoding from the old metier codes that exists in the database to a new metier code, suggestions have been made in table 3.4.2.3. The three lines with no suggestion are because there is currently not an easy replacement code.

**Table 3.4.2.3:** Old métier codes in the database, and suggestions for the new métier code that could replace it.

| MS | Old métier code | Suggestion for new métier code |
|----|-----------------|--------------------------------|
| **CYP** | FPO_DEF_0_0_0 | FPO_DEF_>0_0_0 |
| | GTN_DEF_0_0_0 | GTN_DEF_>0_0_0 |
| | LHP-LHM_CEP_0_0_0 | LH_CEP_0_0_0 |
| | LHP-LHM_FIF_0_0_0 | LH_FIF_0_0_0 |
| | PS_LPF_14_0_0 | PS_LPF_<14_0_0 or PS_LPF_>=14_0_0 |
| **MLT** | FPO_CRU_0_0_0 | FPO_CRU_>0_0_0 |
| | FPO_DEF_0_0_0 | FPO_DEF_>0_0_0 |
| | FPO_FIF_0_0_0 | |
| | FPO_MOL_0_0_0 | |
| | GTN_MPD_0_0_0 | |
| | LA_SLP_14_0_0 | LA_SLP_<14_0_0_0 or LA_SLP_>=14_0_0 |
| | PS_LPF_14_0_0 | PS_LPF_<14_0_0 or PS_LPF_>=14_0_0 |
| | SB-SV_DEF_0_0_0 | SX_DEF_0_0_0 |
| **SVN** | DRB_MOL_0_0_0 | DRB_MOL_>0_0_0 |

| MS | Old métier code | Suggestion for new métier code |
|---|---|---|
| | FPO_DEF_0_0_0 | FPO_DEF_>0_0_0 |
| | FYK_DEF_0_0_0 | FYK_DEF_>0_0_0 |
| | GND_SPF_0_0_0 | GND_SPF_>0_0_0 |

In the 2023 FDI data call, a field on Metier level 7 was added to optionally submit the tuna fishery metiers with an additional code indicating the tuna species/group of tuna species that are targeted. Spain, France, Croatia and Malta have submitted information on metier level 7, table 3.4.2.4 is indicating the codes that have been submitted.

**Table 3.4.2.4:** List of metier level 7 codes that have been submitted by MS.

**ESP**

LHM_LPF_0_0_0_BFT
LHP_LPF_0_0_0_ALB
LHP_LPF_0_0_0_BFT
LHP_LPF_0_0_0_MSP
LHP_LPF_0_0_0_TRO
LLD_LPF_0_0_0_ALB
LLD_LPF_0_0_0_BFT
LLD_LPF_0_0_0_SWO
LTL_LPF_0_0_0_ALB
PS_LPF_>=14_0_0_BFT
PS_LPF_>0_0_0_TRO

**FRA**

LHP_LPF_0_0_0_MSP
PS_LPF_>0_0_0_BFT
PS_LPF_>0_0_0_TRO

**HRV**

PS_LPF_>=14_0_0_BFT

**MLT**

LLD_LPF_0_0_0_ALB
LLD_LPF_0_0_0_BFT
LLD_LPF_0_0_0_SWO
LLS_LPF_0_0_0_SWO
PS_LPF_>=14_0_0_BFT

***Analysis of amount of metier codes uploaded as 'NK' (Not Known)***

To assess the upload of metier code as 'NK', Figure 3.4.2.1 below show the percentage of records in FDI Table A that have the code 'NK' (Not Known). The percentage has decreased from around 7% in the 2013-2017 to 1.5% in 2022. In figure 3.4.2.2, the percentage of records in table A with NK in the metier field are visualized by MS and year. Table 3.4.2.5 show the number of records and the percentage of records with NK in the metier field by SUPRA_REGION and YEAR. Especially in the SUPRA_REGIONs MBS (Mediterranean and Black Sea) and OFR (Other regions) in the years 2013-2017 there is a higher percentage of records with metier NK.

**Figure 3.4.2.1** Percentage of records with NK in the métier field by year in 2013-2022 FDI table A data



Percent of NK records for metiers in Table A
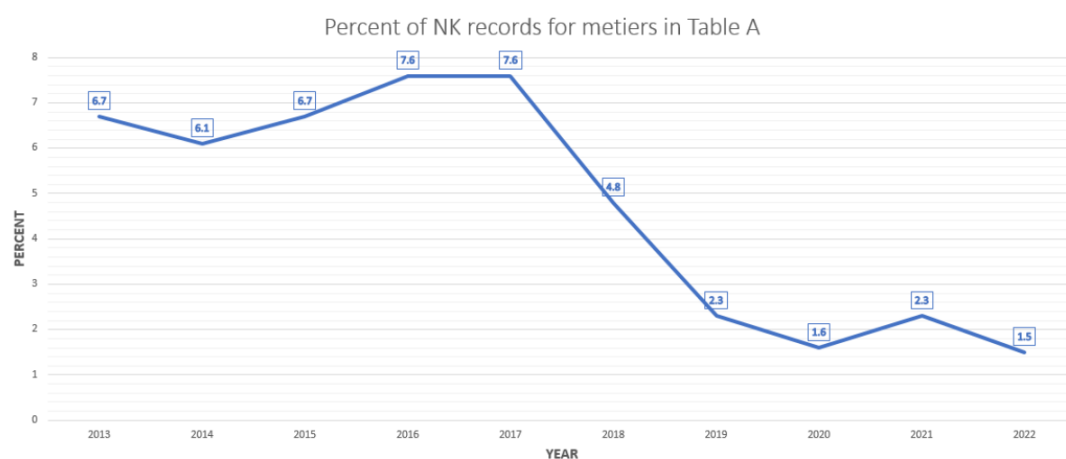
**Figure 3.4.2.2** Percentage of records with NK in the métier field by year in 2013-2022 FDI table A data, by country
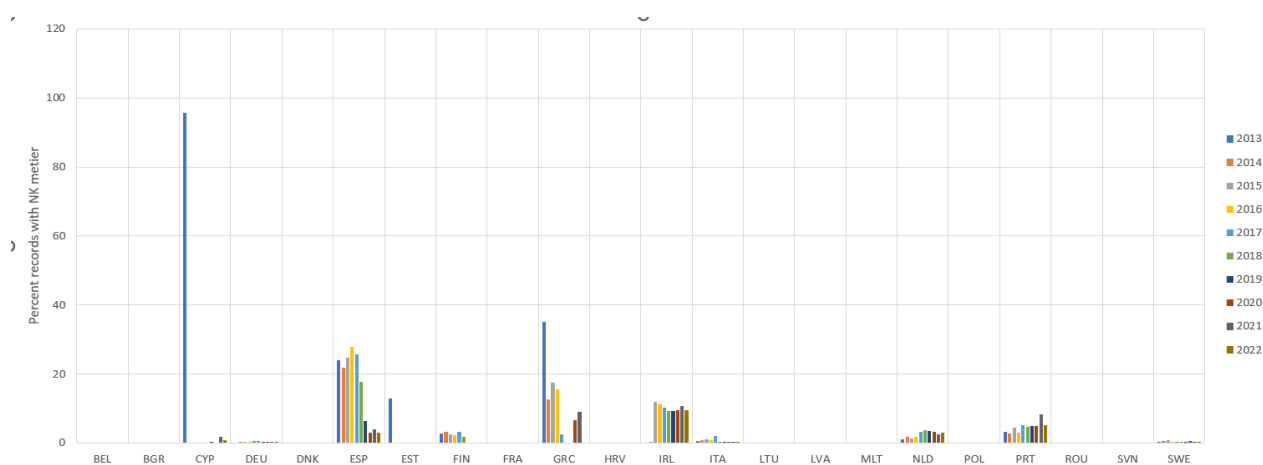


**Table 3.4.2.5** Number of records and percentage of records with NK in the métier field by SUPRA_REGION and YEAR in table A

| YEAR | SUPRA_REGION | Number of records in table A with NK in the metier field | Percent records with NK in the metier field |
|---|---|---|---|
| 2013 | MBS | 13819 | 12.8 |
| 2014 | MBS | 11932 | 11 |

| YEAR | SUPRA_REGION | Number of records in table A with NK in the metier field | Percent records with NK in the metier field |
|---|---|---|---|
| 2015 | MBS | 10948 | 10.4 |
| 2016 | MBS | 12388 | 11.2 |
| 2017 | MBS | 12904 | 10.9 |
| 2018 | MBS | 7939 | 6.6 |
| 2019 | MBS | 1340 | 1.1 |
| 2020 | MBS | 620 | 0.5 |
| 2021 | MBS | 2254 | 2 |
| 2022 | MBS | 283 | 0.2 |
| 2013 | NAO | 15045 | 4.2 |
| 2014 | NAO | 15940 | 4.6 |
| 2015 | NAO | 18993 | 5.4 |
| 2016 | NAO | 21723 | 6.3 |
| 2017 | NAO | 22198 | 6.4 |
| 2018 | NAO | 14615 | 4.3 |
| 2019 | NAO | 9139 | 2.6 |
| 2020 | NAO | 6067 | 1.9 |
| 2021 | NAO | 7394 | 2.4 |
| 2022 | NAO | 6103 | 2 |
| 2013 | OFR | 3415 | 24.7 |
| 2014 | OFR | 1814 | 7.4 |
| 2015 | OFR | 1401 | 9.7 |
| 2016 | OFR | 2024 | 11.8 |
| 2017 | OFR | 1463 | 8.7 |
| 2018 | OFR | 388 | 3.1 |
| 2019 | OFR | 678 | 4.8 |

| YEAR | SUPRA_REGION | Number of records in table A with NK in the metier field | Percent records with NK in the metier field |
|---|---|---|---|
| 2020 | OFR | 368 | 3 |
| 2021 | OFR | 467 | 3.6 |
| 2022 | OFR | 396 | 2.8 |

### *Rows marked as confidential*

In the new métier codes, in some cases, the mesh size ranges have been split up, compared to the old métier codes, and therefore the data submitted could potentially be more disaggregated, and therefore if MS is using the less than 3 vessels rules when deciding if a line should be marked as confidential, the overall amount of data that are marked as confidential could have increased when the time series have been submitted with the new métier codes. To evaluate this, an analysis made in the EWG 21-12 on the percentage of records marked as confidential in table A by MS was repeated with the data submitted in 2022, but using the same time series 2016-2020. Table 3.4.2.6 shows that for many countries, there has not been a major change in the percentage of rows marked as confidential, but for Lithuania and the Netherlands, there is an increase of 10 and 35 percent respectively.

**Table 3.4.2.6:** Percent of records marked as confidential in table A during the years 2016-2020 in the data submitted in 2021 vs. The data submitted in 2023. The difference in the percentage can be seen in the right column.

| | 2021 data call | | | 2023 data call | | | Difference in percent confidential in table A |
|---|---|---|---|---|---|---|---|
| | A (all is confidential) | N (none is confidential) | V (value of landings is confidential) | A (all is confidential) | N (none is confidential) | V (value of landings is confidential) | |
| BEL | 58 | 42 | | 60 | 40 | | 2 |
| BGR | | 100 | | | 100 | | 0 |
| CYP | | 100 | | | 100 | | 0 |
| DEU | 1 | | 99 | 1 | | 99 | 0 |
| DNK | 70 | 30 | | 74 | 26 | | 4 |
| ESP | 71 | 29 | | 68 | 32 | | -3 |
| EST | | 100 | | | 100 | | 0 |
| FIN | 30 | 70 | | 30 | 70 | | 0 |
| FRA | 7 | 93 | | 0 | 100 | | -7 |
| GRC | | 100 | | | 100 | | 0 |
| HRV | | 100 | | | 100 | | 0 |
| IRL | 73 | 27 | | 74 | 26 | | 1 |
| ITA | | 100 | | 3 | 97 | | 3 |
| LTU | 44 | 56 | | 79 | 21 | | 35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LVA | 9 | 91 | | 9 | 91 | | 0 |
| MLT | | 100 | | | 100 | | 0 |
| NLD | 59 | 41 | | 69 | 31 | | 10 |
| POL | 6 | 94 | | 6 | 94 | | 0 |
| PRT | 73 | 27 | | 74 | 26 | | 1 |
| ROU | | 100 | | | 100 | | 0 |
| SVN | | 100 | | | 100 | | 0 |
| SWE | | 100 | | | 100 | | 0 |

The effect of confidentiality on the effort data (Table G) was also illustrated as bar charts. It should be noted that the data (rows) marked as confidential in the Table are not included in the disseminated dataset. In Figure 3.4.2.3 and Figure 3.4.2.4, the total fishing days by fishing technique are plotted by year (2013-2022) and the colour specifies the amount designated as confidential. Please note that the x-axis and y-axis varies for each figure. For most cases, the percentage of confidential effort data is quite low, and remains constant across the years. Only for PGO, it seems that a considerable proportion of data is set to confidential.

**Figure 3.4.2.3:** Fishing days by type of confidentiality (pink bars: confidential, blue bars: non-confidential) by Fishing technique across years.

**Figure 3.4.2.4** Fishing days by type of confidentiality (pink bars: confidential, blue bars: non-confidential) by Fishing technique across years.
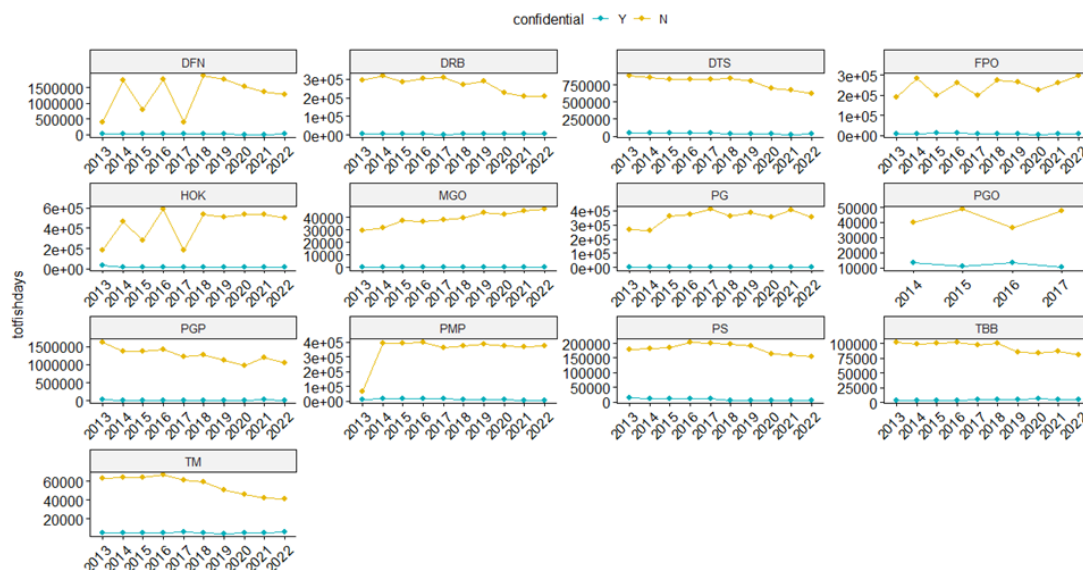


The analysis was also repeated by Fishing zone (Figure 3.4.2.5 and 3.4.2.6). The lowest proportion of confidentiality is found for MED- BS, followed by the Baltic Sea. In every case, however, the amount of confidential fishing days (raw and as percentage) is relatively low and stable across years.

**Figure 3.4.2.5** Fishing days by type of confidentiality (pink bars: confidential, blue bars: non-confidential) by Fishing zone across years.

**Figure 3.4.2.6** Fishing days by type of confidentiality (blue lines: confidential, yellow lines: non-confidential) by Fishing zone across years.
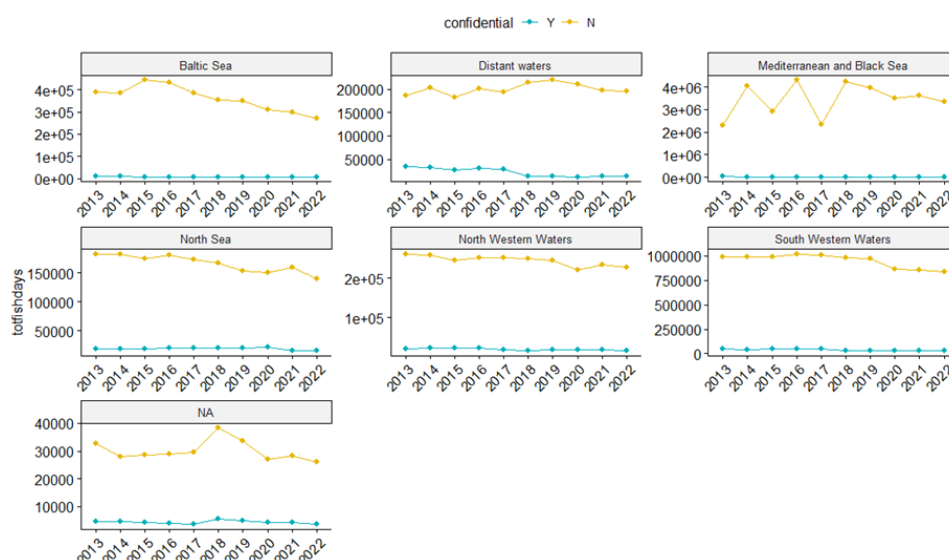


*Evaluation of resubmission of EEZ indicator codes*

For the resubmission of the time series, the MS were also requested to indicate if the fishing activity took place within the UK EEZ. Therefore, it was checked if the MS have resubmitted with the EEZ indicator set to UK.

All the countries with fishing activities in the UK EEZ provided some data with EEZ indicator set to the value 'UK' in tables A, G, H and I. In the following table the countries that provided information about activities in the UK EEZ are listed by table and year. It can be concluded that all MS with fishing activities within the UK EEZ have resubmitted with the updated EEZ indicator in the relevant tables and years.

| Country code | Table A | Table G | Table H | Table I |
|---|---|---|---|---|
| BEL | all years | all years | all years | all years |
| DEU | all years | all years | all years | all years |
| DNK | all years | all years | all years | all years |
| ESP | all years | all years | all years | all years |
| FRA | all years | all years | all years | all years |
| IRL | all years | all years | all years | all years |
| LTU | 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022 | 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022 | 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022 | 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022 |
| NLD | all years | all years | all years | all years |
| POL | 2018, 2019, 2020, 2021, 2022 | 2018, 2019, 2020, 2021, 2022 | 2018, 2019, 2020, 2021, 2022 | 2018, 2019, 2020, 2021, 2022 |
| PRT | 2013*, 2014 | 2013*, 2014 | 2013*, 2014 | 2013*, 2014 |
| SWE | all years | all years | all years | all years |

*During the data checks it was concluded that the 2013 fishing activities in the UK EEZ reported by Portugal refer to transmission errors by fishermen. Those records will be corrected in next year data call.

Based on the tables containing spatial information, it was checked if any c-squares/rectangles that are completely outside UK EEZ have been marked with the EEZ indicator UK in FDI Table I. This means that if a c-square/rectangle has any part inside the

UK EEZ, it could potentially be correct. The shapefile 'EEZ_noland_v1_3_MDR_FMC' provided for the EWG 23-05 was used to perform this check.

**Figure 3.4.2.7:** Left map: white dots are c-squares completely outside UK EEZ marked with UK EEZ indicator. Right map: black dots are ICES rectangles completely outside UK EEZ marked with UK EEZ indicator. EEZ shapefile: EEZ_noland_v1_3_MDR_FMC.
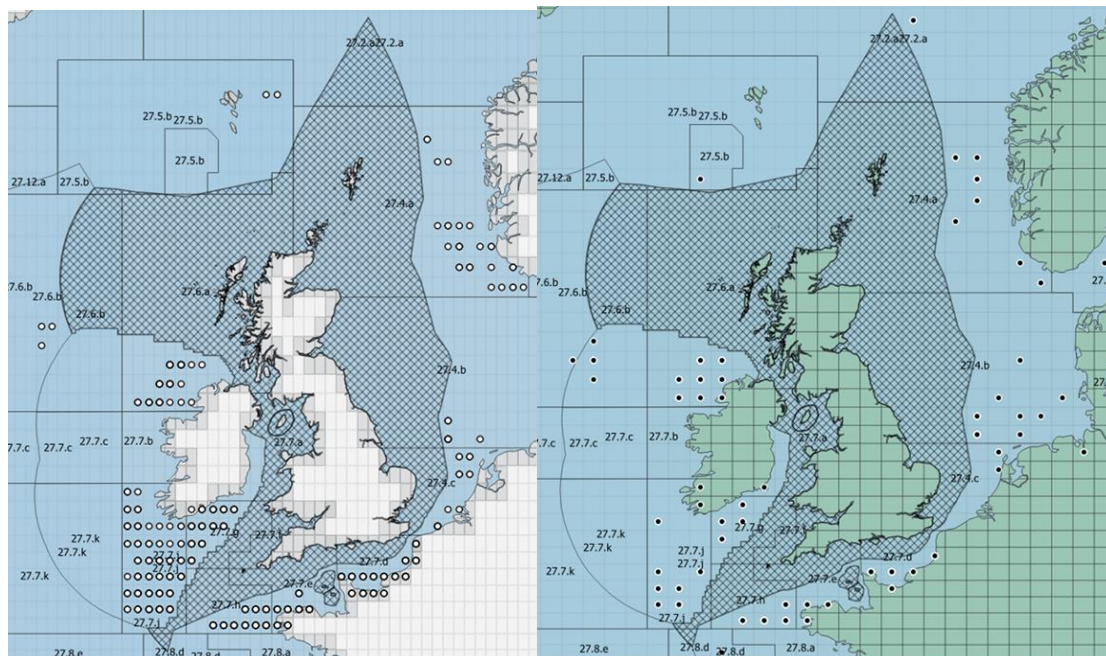


**Table 3.4.2.7:** Number of records reported with ICES rectangle in FDI Table I completely outside UK EEZ which have been marked with EEZ indicator UK.

| Country code | Number of records reported with ICES rectangle outside UK EEZ and EEZ indicator UK |
|---|---|
| DEU | 53 |
| ESP | 66 |
| FRA | 294 |
| SWE | 2 |

**Table 3.4.2.8:** Number of records reported with c-square in FDI Table I completely outside UK EEZ which have been marked with EEZ indicator UK.

| Country code | Number of records reported with c-square outside UK EEZ and EEZ indicator UK |
|---|---|
| FRA | 5228 |
| PRT | 1 |

### Check the use of c-square vs. ICES rectangle by MS

There are several options to provide the spatial information in tables H and I: by rectangle, at different resolutions: 0.5*0.5 degrees (e.g., related to GFCM squares used in MBS), 0.5*1 degrees (e.g., related to ICES rectangles), 1*1 degrees (e.g., related to IOTC), 5*5 degrees (e.g., related to ICCAT). After indicating the rectangle type, the midpoint latitude and longitude are then provided. Alternatively, the spatial information can be provided in c-square notation, which contain both information about the size and location of the square. If reporting in the c-square format, the resolution of 0.5*0.5 degree resolution is requested in the FDI data call.

The Table I submitted in 2023 by all MS was examined, including the historical series (2013-2022) to evaluate how many countries and in which supra-regions c-square and rectangle_type information is provided.

Most countries provide geographic positioning data in rectangle (e.g., based on ICES rectangle), but not in the c-square notation. France, Malta and Poland report data in both formats (Table 3.4.2.9) and Portugal and Italy only in C-square format.

**Table 3.4.2.9** Summary of the number of Table I sent in 2023, including the historical series. The number of lines that include different NA values for the rectangle_type and C-Square field, by country and supra-region, and their respective percentages are shown.

| Country code | Supra region | Rectangle type by Number of Records | C-Square by Number of Records | % Rectangle type | % C-Square |
|---|---|---|---|---|---|
| BEL | NAO | 7229 | 0 | 100.00 | 0.00 |
| BGR | MBS | 5062 | 0 | 100.00 | 0.00 |
| CYP | MBS | 2383 | 0 | 100.00 | 0.00 |
| DEU | NAO | 24540 | 0 | 100.00 | 0.00 |
| DEU | OFR | 317 | 0 | 100.00 | 0.00 |
| DNK | NAO | 65551 | 0 | 100.00 | 0.00 |
| ESP | MBS | 89157 | 0 | 100.00 | 0.00 |
| ESP | NAO | 155653 | 0 | 100.00 | 0.00 |
| ESP | OFR | 148569 | 0 | 100.00 | 0.00 |
| EST | NAO | 2022 | 0 | 100.00 | 0.00 |
| FIN | NAO | 11756 | 0 | 100.00 | 0.00 |
| FRA | MBS | 102490 | 6981 | 93.62 | 6.38 |
| FRA | NAO | 129862 | 228511 | 36.24 | 63.76 |
| FRA | OFR | 8981 | 41205 | 17.90 | 82.10 |
| GRC | MBS | 30442 | 0 | 100.00 | 0.00 |
| HRV | MBS | 124403 | 0 | 100.00 | 0.00 |
| IRL | NAO | 47673 | 0 | 100.00 | 0.00 |
| ITA | MBS | 0 | 61688 | 0.00 | 100.00 |
| LTU | NAO | 2080 | 0 | 100.00 | 0.00 |
| LTU | OFR | 2679 | 0 | 100.00 | 0.00 |
| LVA | NAO | 4193 | 0 | 100.00 | 0.00 |
| LVA | OFR | 364 | 0 | 100.00 | 0.00 |
| MLT | MBS | 2152 | 4916 | 30.45 | 69.55 |
| NLD | NAO | 28201 | 0 | 100.00 | 0.00 |
| NLD | OFR | 9 | 0 | 100.00 | 0.00 |
| POL | NAO | 14340 | 829 | 94.53 | 5.47 |
| POL | OFR | 35 | 567 | 5.81 | 94.19 |
| PRT | MBS | 0 | 1074 | 0.00 | 100.00 |
| PRT | NAO | 0 | 104294 | 0.00 | 100.00 |
| PRT | OFR | 0 | 17825 | 0.00 | 100.00 |
| ROU | MBS | 236 | 0 | 100.00 | 0.00 |
| SVN | MBS | 724 | 0 | 100.00 | 0.00 |
| SWE | NAO | 34495 | 0 | 100.00 | 0.00 |

**Suggestions for changes in future data calls**

**Evaluation of sub-region set to NK**

As it has been discussed if the option to set sub-region to NK should be kept, it was evaluated by table and country if MS have used this option. Below are listed the countries that provided data with sub-region set to the value 'NK'.

Table A:

- CYP years 2013, 2015, 2016
- ESP all years
- FRA all years
- NLD all years
- PRT all years

Table G:

- ESP all years
- FRA all years
- NLD all years
- PRT all years

Table H:

- ITA year 2017
- PRT years 2013, 2014, 2021, 2022

Table I: PRT years 2013, 2014, 2021, 2022

It was accepted by all MS to remove the option to set the sub-region to NK in the spatial tables H and I.

**Suggestions for improvements of data call text (Fisheries Dependent Information data call 2023 - Annex 1**

The EWG 23-10 reviewed the text of the FDI data call and suggested some improvements to its annex. These improvements are aimed at harmonizing the data call specifications with the legal text (in particular the EUMAP, Commission Delegated Decision (EU) 2021/1167) and to reinforce the request of coordination of the data processes applied by MS for the FDI and the AER data call when assigning the fishing technique to the vessel (so called "dominance criteria"). For the references to the legislation, it is suggested to insert a hyperlink.

The suggestions are:

- Change the text of footnote 2 as follows:
  - A clustered fleet segment is when one or more fleet segments are aggregated for confidentiality reasons or where necessary to design a statistically sound sampling plan (chapter II, point 5.1, COMMISSION DELEGATED DECISION (EU) 2021/1167)[2]
- Add in footnote 3 the reference to EUMAP: table 8 fleet segmentation COMMISSION DELEGATED DECISION (EU) 2021/1167
- Paragraph "Definitions". Add at the end of the second sentence, add the following text: "…and following the same procedure used for the provision of data in the AER data call"

**Reporting of BSA (Biologically Sensitive Area)**

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[2] https://eur-lex.europa.eu/eli/dec_del/2021/1167/oj

In the FDI Appendix 9, there is a list of ICES statistical rectangles to be marked as BSA in the SUB-REGION field, which should be reported in tables A and G, and can overlap with other SUB-REGIONS. As this code is no longer used, the EWG 23-10 recommend to remove the BSA code from the FDI data call in the future.

**Nephrops sub-region**

The *Nephrops* sub-regions listed in the FDI data call (pg. 33) need to be updated, to align with the stock definitions (ICES WGCSE 2022). Mismatches were found in FU15 (missing 35E3), FU20-21 (missing: 28E0, 29E0, 29E3). The table below provides proposed improvement for Celtic Sea ecoregion functional units. The Nephrops functional units were under revision in ICES at the time of the EWG 23-10, and should be checked before the next FDI data call is issued. This information should be checked annually to ensure FU footprint is correct.

| Functional Unit | Stock | ICES Division | ICES Statistical Rectangles |
|---|---|---|---|
| 11 | North Minch | 6.a | 44–46 E3–E4 |
| 12 | South Minch | 6.a | 41–43 E2–E4 |
| 13 | Clyde | 6.a | 39–40 E4–E5 |
| 14 | Irish Sea East | 7a | 35–38E6; 38E5 |
| 15 | Irish Sea West | 7a | 35E3, 36E3; 35–37 E4–E5; 38E4 |
| 16 | Porcupine Bank | 7b,c,j,k | 31–35 D5–D6; 32–35 D7–D8 |
| 17 | Aran Grounds | 7b | 34–35 D9–E0 |
| 19 | Southeast and southwest Irish Coast | 7a,g,j | 31–33 D9–E0; 31E1; 32E1–E2; 33E2–E3 |
| 20-21 | Labadie, Jones and Cockburn bank | 7g,h | 28 E0–E2; 29 E0–E3; 30E1–E3; 31E2 |
| 22 | Smalls Ground | 7g | 31–32 E3–E4 |

Some inconsistencies were found relating to the sub regions. These are included as comment to the table 3.4.2.10 below.

**Table 3.4.2.10** The list of Functional Units in the FDI data call Appendix 9, with some comments with suggestions for changes in future data calls.

| NEP_SUB_REGION | SUB_REGION | FU | ICES statistical rectangles | Comment |
|---|---|---|---|---|
| 27.3.a.FU3 | 27.3.a | 3 | 44F7, 45F7, 43F8, 44F8, 45F8, 46F8, 43F9, 44F9, 45F9, 46F9, 47F9, 45G0, 46G0, 47G0, 48G0, 46G1, 47G1 | |
| 27.3.bc.FU3 | 27.3.bc | 3 | 44G0, 45G1 | These rectangles are in 27.3.a<br>Suggest to move them to 27.3.a.FU3 |
| 27.3.a.FU4 | 27.3.a | 4 | 41G1,43G2 | |
| 27.3.bc.FU4 | 27.3.bc | 4 | 42G0, 43G0, 42G1, 43G1, 44G1, 41G2, 42G2 | These rectangles are in 27.3.a. Suggest to move them to 27.3.a.FU4 |
| 27.4.b.FU5 | 27.4.b | 5 | 36F1, 37F1, 36F2, 37F2, 36F3, 37F3, 36F4, 37F4 | |
| 27.4.c.FU5 | 27.4.c | 5 | 35F2, 35F3 | |
| 27.4.b.FU6 | 27.4.b | 6 | 38E8, 39E8, 40E8, 37E9, 38E9, 39E9, 40E9 | |

| NEP_SUB_RE GION | SUB_REGI ON | FU | ICES statistical rectangles | Comment |
|---|---|---|---|---|
| 27.4.a.FU7 | 27.4.a | 7 | 45E8, 46E8, 44E9, 45E9, 46E9, 47E9, 48E9, 49E9, 44F0, 45F0, 46F0, 47F0, 48F0, 49F0, 44F1, 45F1, 46F1, 47F1, 48F1, 49F1 | |
| 27.4.b.FU8 | 27.4.b | 8 | 41E6, 40E7, 41E7 | |
| 27.4.a.FU9 | 27.4.a | 9 | 44E6, 45E6, 44E7, 45E7, 44E8 | |
| 27.4.a.FU10 | 27.4.a | 10 | 47E6 | |
| 27.6.a.FU11 | 27.6.a | 11 | 44E3, 45E3, 46E3, 44E4, 45E4, 46E4 | |
| 27.6.a.FU12 | 27.6.a | 12 | 41E2, 42E2, 43E2, 41E3, 42E3, 43E3, 41E4, 42E4, 43E4 | |
| 27.6.a.FU13 | 27.6.a | 13 | 39E4, 40E4, 39E5, 40E5 | |
| 27.7.a.FU14 | 27.7.a | 14 | 38E5, 35E6, 36E6, 37E6, 38E6 | |
| 27.7.a.FU15 | 27.7.a | 15 | 36E3, 35E4, 36E4, 37E4, 38E4, 35E5, 36E5, 37E5 | |
| 27.7.k.FU16 | 27.7.k | 16 | 31D5, 32D5, 33D5, 31D6, 32D6, 33D6, 32D7, 33D7, 34D8, 35D8 | These two rectangles are in 27.7.b. Suggest to rename to 27.7.b.FU16 |
| 27.7.c.FU16 | 27.7.c | 16 | 34D5, 35D5, 34D6, 35D6, 34D7, 35D7 | |
| 27.7.j.FU16 | 27.7.j | 16 | 32D8, 33D8 | |
| 27.7.b.FU17 | 27.7.b | 17 | 34D9, 35D9, 34E0, 35E0 | |
| 27.7.j.FU19 | 27.7.j | 19 | 31D9, 32D9, 33D9, 31E0, 32E0, 33E0 | |
| 27.7.g.FU19 | 27.7.g | 19 | 31E1, 32E1, 32E2 | |
| 27.7.a.FU19 | 27.7.a | 19 | 33E2, 33E3 | |
| 27.7.g.FU2021 | 27.7.g | 20-21 | 28E1, 29E1, 30E1, 29E2, 30E2, 31E2, 30E3 | 28E1 is in area 27.7.h. Suggest to move the rectangle to 27.7.h.FU2021 |
| 27.7.h.FU2021 | 27.7.h | 20-21 | 28E2 | |
| 27.7.g.FU22 | 27.7.g | 22 | 31E3, 32E3, 31E4, 32E4 | |
| 27.7.a.FU23 | 27.7.a | 23 | 22E5, 23E5, 24E5, 22E6, 23E6, 24E6, 22E7, 23E7, 24E7 | FU23 is in area 27.8.a. Suggest to rename to 27.7.a.FU23 |
| 27.7.a.FU24 | 27.7.a | 24 | 21E6, 21E7, 21E8 | This part of FU24 is in area 27.8.a. Suggest to rename to 27.7.a.FU24 |
| 27.7.b.FU24 | 27.7.b | 24 | 20E7, 19E8, 20E8 | This part of FU24 is in area 27.8.b. Suggest to rename to 27.7.b.FU24 |

| NEP_SUB_RE GION | SUB_REGI ON | FU | ICES statistical rectangles | Comment |
|---|---|---|---|---|
| 27.8.c.FU25 | 27.8.c | 25 | 15E0, 15E1, 16E1 | |
| 27.9.a.FU26 | 27.9.a | 26 | 13E0, 14E0, 13E1, 14E1 | |
| 27.9.a.FU27 | 27.9.a | 27 | 06E0, 07E0, 08E0, 09E0, 10E0, 11E0, 12E0, 09E1, 10E1, 11E1, 12E1 | |
| 27.9.a.FU28 | 27.9.a | 28 | 03E0, 04E0, 05E0, 03E1, 04E1, 05E1 | |
| 27.9.a.FU29 | 27.9.a | 29 | 02E0, 02E1, 02E2 | 02E2 belongs to FU30. Suggest to remove from list |
| 27.9.a.FU30 | 27.9.a | 30 | 02E2, 03E2, 02E3, 03E3 | |
| 27.8.c.FU31 | 27.8.c | 31 | 16E4, 16E5, 16E6, 16E7 | |
| 27.4.a.FU32 | 27.4.a | 32 | 44F2, 45F2, 46F2, 47F2, 48F2, 49F2, 50F2, 51F2, 52F2, 44F3, 45F3, 46F3, 47F3, 48F3, 49F3, 50F3, 51F3, 52F3, 44F4, 45F4, 46F4, 47F4, 48F4, 49F4, 50F4, 51F4, 52F4, 44F5, 45F5, 46F5, 47F5, 48F5, 49F5, 50F5, 51F5, 52F5, 44F6, 45F6, 46F6, 47F6, 48F6, 49F6, 50F6, 51F6, 52F6 | |
| 27.4.b.FU32 | 27.4.b | 32 | 43F5, 43F6, 43F7 | |
| 27.4.OUTFU | 27.4 | Out | Any statistical rectangle not identified above as NEP caught outside an FU | |
| 27.6.OUTFU | 27.6 | Out | Any statistical rectangle not identified above as NEP caught outside an FU | |
| 27.7.OUTFU | 27.7 | Out | Any statistical rectangle not identified above as NEP caught outside an FU | |
| 27.8.c.OUTFU | 27.8.c | Out | Any statistical rectangle not identified above as NEP caught outside an FU | |
| 27.9.a.OUTFU | 27.9.a | Out | Any statistical rectangle not identified above as NEP caught outside an FU | |

*Quality indicators*

There is a growing need to supply measures of confidence for the discard estimates available through the FDI database. These measures will provide a tool for FDI experts to interrogate and evaluate the quality of discard data submitted. The measures will also provide information on the limitations of the dataset for end users such as the Commission. These measures also encourage confidence in the scientists providing the data that it won't be misinterpreted by the end-user such as the public or NGO's (FDI STECF-21-12).

Two sets of quality indicators can be found in the FDI data call. Time at the next Methods expert working group meeting needs to be given to exploring the quality of these indicators and developing accompanying text describing how these indicators can be used. Understanding of how these values should be used needs to be discussed. The EWG recommends not disseminating these indicators until work can be done, as it could lead to misinterpretation. Below is a summary of the indictors reported by Member State to the 2023 data call.

Refusal rates (Table B): Member States are requested to supply data to this table if their sampling design if it is considered a probability-based vessel selection design. In the absence of a probability-based vessel selection design please submit 'NK'. However, a number of Member States provided sampling frames with a NULL refusal rate (BEL 2, ESP 1, EST 2, FRA 1, HRV 18, ITA 1, LTU 2, NLD 1, PRT 1, SVN 1, SWE 8). It is unclear to the EWG why NULL is reported, it is likely to be due to a non-probabilistic sampling plan but may also be NULL due to low sampling effort.

A total of 12 Member States submitted information on sampling frame with refusal rates reported. (BGR 4, CYP 3, DEU 9, DNK 5, ESP 8, FIN 17, FRA 19, IRL 3, LVA 3, NLD 2, POL 6, SWE 24). Due to the full workload of the EWG it was not possible during the meeting to review and understand the data submitted. Time should be given at the next Methods EWG to better understanding the data that was submitted and discussing how best to describe and disseminate this data for end users.

Discards age (Table C) and length data: Member States are requested to supply data to information about the quality of the age, length and discard estimate. Coefficient of variation (CV) was provided by a number of Member States (DEU, IRL, LTU, POL, PRT), and Confidence intervals (CI) (DEU, LTU, POL).

The quality of the discard indicators has not been assessed due to a full workload at the EWG. Ideally, time would be given at the next Methods EWG to review and discuss the quality indicators that have been submitted. In the meantime, Member States are advised to follow the developments of quality indicator estimation within the RDBES. As FDI data call will likely be answered from data submitted to RDBES in the future, the quality indicator developed here could provide a useful tool.

## Feasibility to further extend time series

The EWG 23-10 discussed the feasibility of extending the period of data requested in the FDI data calls beyond 2013. The EWG notes that the preliminary discussions over this issue were already held during the EWG 22-10 (STECF-22-10). The EWG 22-10 also compiled the provided by the Member States information on potential data availability by the different FDI tables. This information revealed that potential FDI data series available for the period prior to 2013 by the MS are highly variable.

| Availability of historical FDI prior to 2013 as reported by the Member States (data from EWG 22-10) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | A | B | C | D | E | F | G | H* | I* | J |
| 2000 | 3 | | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 3 |
| 2001 | | | | | | | | | | |
| 2002 | 2 | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| 2003 | 1 | | 2 | 2 | 2 | 2 | 3 | 1 | 1 | 2 |
| 2004 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 |
| 2005 | | 1 | | | | | 1 | 1 | 1 | 1 |
| 2006 | | | | | | | | 1 | 1 | |
| 2007 | | 1 | | | | | | | | |
| 2008 | 5 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 5 |
| 2009 | 2 | | 1 | | 2 | 2 | | 1 | 2 | 3 |
| 2010 | | | | | | | | | | |
| 2011 | 1 | | 3 | 3 | | | 1 | 1 | 1 | 1 |
| 2012 | 2 | 1 | | | | | 2 | 1 | 1 | 2 |
| | | | | | | | | | | |
| Total MS | 16 | 5 | 10 | 9 | 8 | 8 | 15 | 13 | 14 | 20 |
| | | | | | | | | | | |

* earliest data from 1987 (one MS)

The EWG 23-10 concludes that at this point it would not be reasonable for all MS to extend the full historical data set beyond 2013 and supported the concern of EWG 22-10 that the quality of the data before 2013 for some MS would be too low to have a reliable dataset and for some countries it will not be possible to provide those data at the level of aggregation required by the FDI data calls. Future EWGs on FDI methodology issues could also provide be a forum for exploration of quality and availability of historical data.

EWG 23-10 also agreed that the Member States which are confident on the availability and quality of their pre-2013 information are welcomed to upload their respective data to the FDI database on voluntary basis for the years 2011 and 2012. This information would not be made available for dissemination.

**Conclusions**

It can be concluded that there are currently inconsistencies between the new métier definitions and the GEAR_TYPE, TARGET_ASSEMBLAGE and SPECON fields. In some cases there are good explanations to this, in others, there are inconsistencies in the coding. The EWG encourages the MS to look at the consistency between the SPECON field and the metier selection panel codes, or explain the inconsistencies in the National Chapters in 2024.

In general, the majority of MS have resubmitted the full time series with the tables that are affected by new métier codes or EEZ indicator in the UK. For 3 countries there are still old métier codes in the data. In most cases, these métier codes could be recoded to new codes.

As the new métier codes have in some cases been split with regards to mesh size ranges compared to the old métier codes. This could lead to more records having less than 3 vessels, and could therefore potentially increase the amount of data marked as confidential. A check was made, and for most countries, there were no major differences. 2 countries had an increase of 10% or more of number of records marked as confidential.

It was requested to resubmit the full time series with the EEZ indicator code indicating if the fishery took place in the UK EEZ. All the countries with fishing activities in the UK EEZ provided some data with the EEZ indicator set to the value 'UK' in tables A, G, H and I. A

check was made on the spatial tables H and I if the EEZ indicator is set to UK, and the c-square/ICES rectangle is outside the UK EEZ. These checks show some inconsistencies.

### 3.5 Follow up on the comparability between the data collected in the FDI database and the data provided to the AER

#### 3.5.1 Repeat analysis from FDI 2021 on newly submitted AER and FDI time series (2017-2021)

The EWG analysed the consistency of the activity data between the two sources – AER and FDI data set. For this task, AER data sets obtained from the JRC AER database were compared with data submitted to FDI database during 2023 data call for 2017-2021. The data analysis showed an improvement in data codification between both data calls and consistency between different data sets with the same information, however some discrepancies between the data sets remain. Most of the data inconsistencies identified are due to: timing in data exports to answer the data call, possibility to report to FDI confidential data (that is not available in AER) and due to inconsistent use of definitions, e.g. GEO indicator between data calls.

Two EWGs have already done first attempts: the STECF 20-11 on Balance Capacity and the STECF 21-02 on Methods for Supporting Stocks Assessments in the Mediterranean. For the first one (STECF 20-11), the analysis was a preliminary one with an ad-hoc contract focused on the landings weight and values for Belgium and Italy.

The discrepancies noticed 'may be in part due to confidentiality reasons, where sensitive economic data (including landings' value) are reported by clustered fleet segments only. Some of the data could also be slightly different because of the early economic data call in February. Some of the data submitted in February are provisional and Member States correct them.

In the second one (STECF 21-02), an analysis compared landings values for Mediterranean countries submitted under 3 separate data calls: AER, FDI and Med and Black Sea. Landings reported for Several GSAs and species are not consistent. However, the graphs presented in the STECF 21-02 report could help the MS to correct the differences. The EWG compared the data calls by countries and GSA.

**For 2017-2021 data, map fleet segments found in the FDI database to fleet segments found in the Fleet Economic database.**

The total number of vessels and fleet segments on country level was compared between FDI and AER data sets for the period 2017-2021. During data analysis, exclusion of data pertaining to inactive vessels or segments was necessitated by the absence of such information in the FDI data call from specific countries that did not provide this data. The requirement to provide inactive vessels in FDI data call was added in 2022 after comparison between AER and FDI made by this group in 2021. Therefore, to improve the consistency in the future data submissions absence of inactive vessels was included in the DTMT tool and communicated to the MS.

*Fleet segments in the capacity file*

When analysing the number of fleet segments reported in both data calls, the difference in number of fleet segments is relatively small.

The difference primarily arises from the data pertaining to Portugal, Poland, Denmark, Netherlands, Greece ad few other countries. In the case of the Portuguese fleet, the difference is related to the fact that no data was reported for the Azores and Madeira (OMR) fleets in the FDI data call. In the case of Greece, the differences are explained due to the AER clustering procedure as well as the absence of inactive vessels' segments in the FDI.

The number of fleet segment reported to both data calls shows slight decline in 2017-2021 period. The total number of fleets found in the capacity templates of FDI and AER data calls in 2017-2021, without Inactive fleet segments are provided in Figure 3.5.1.2.

**Figure 3.5.1.1** Number of fleets found in the capacity templates of FDI and AER data calls in 2017-2021 and a number of fleets by MS in 2021 (inactive fleet segments excluded).

## Number of segment in EU fishing fleet

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| FDI segments | 601 | 590 | 577 | 589 | 582 |
| AER segments | 610 | 581 | 587 | 585 | 568 |
| % difference | -1.5% | 1.5% | -1.7% | 0.7% | 2.4% |

## Number of segments by country in 2021
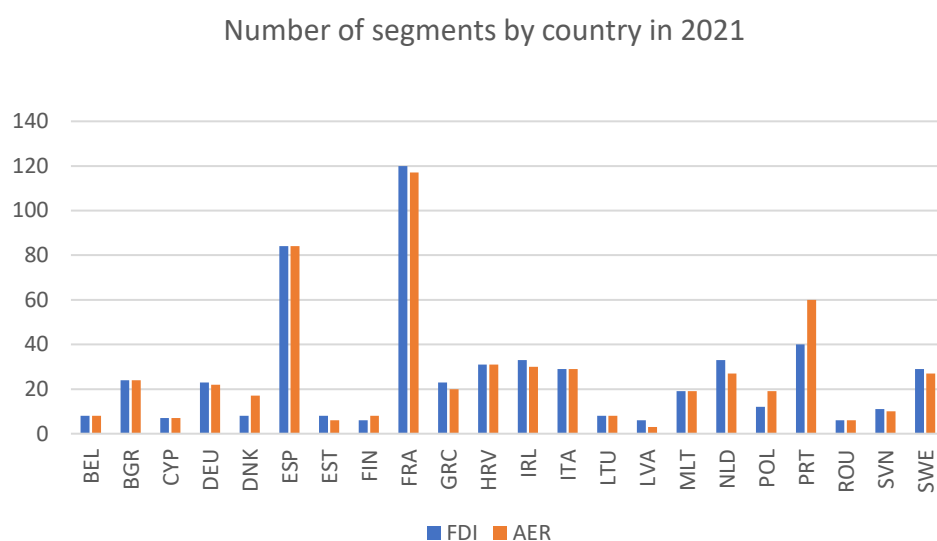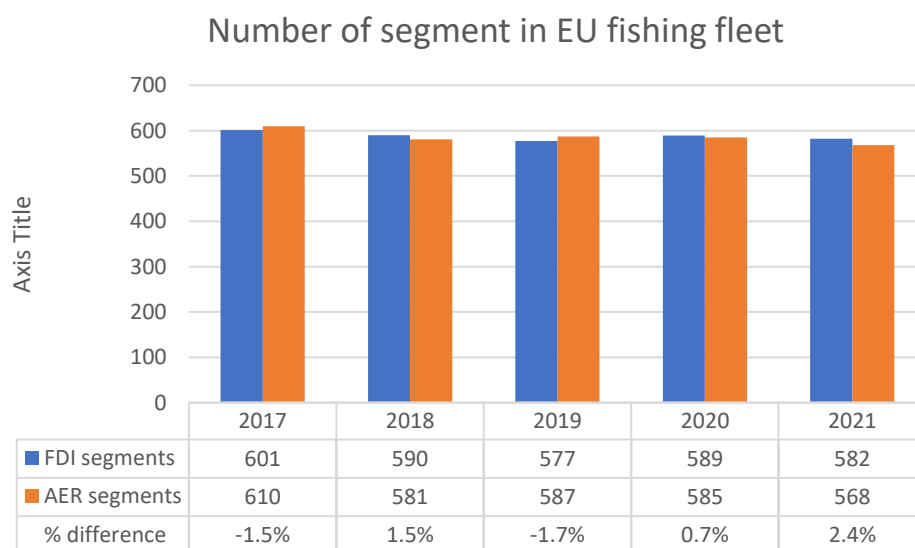
**Figure 3.5.1.2** Difference in number of segments reported in FDI vs AER data calls in % (inactive fleet segments excluded, MS with exact match excluded, negative value means more fleet segments reported to AER data call).



Difference in number of segments FDI vs AER in %
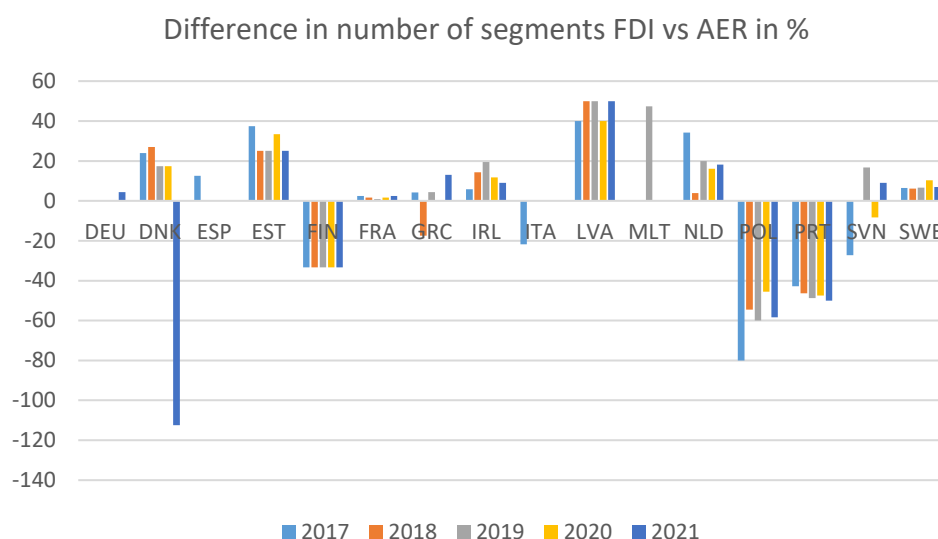
When comparing the fleet segments defined in the two data calls there are certain inconsistencies in the data provided in the capacity table (see Figure 3.5.1.3) during the FDI and AER data calls. This inconsistency is mainly driven by the difference in fleet segments names used when providing data to different data calls. In some cases geo indicator codes were not consistent between data calls, e.g. in case of Spain most of inconsistencies are driven by difference in reporting geo indicators codes.

### Number of vessels reported in both data calls

The total number of vessels on country and EU level was compared between AER and FDI data sets for the period 2017-2021. Figure 3.5.1.3 shows that majority of countries provide comparable data sets. For 2021, Greece, Portugal, Ireland and Germany stand out the most. In the case of the Portuguese fleet, the difference is related to the fact that no data was reported for the Azores and Madeira OMR fleet in the FDI data call. In the case of Greece, the differences are due to the exact representation of the population appeared in the fleet registry, without exclusion of inactive vessels).

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**Figure 3.5.1.3** Differences in total number of vessels between FDI and AER data sets

## Number of vessels in EU fishing fleet

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| ■ Total FDI vessels | 62,970 | 61,314 | 60,156 | 59,097 | 57,651 |
| ■ Total AER vessels | 60,799 | 59,433 | 57,126 | 55,944 | 54,213 |
| % difference | 3% | 3% | 5% | 5% | 6% |

## Number of vessels by country in 2021



■ FDI vessels  ■ AER vessels
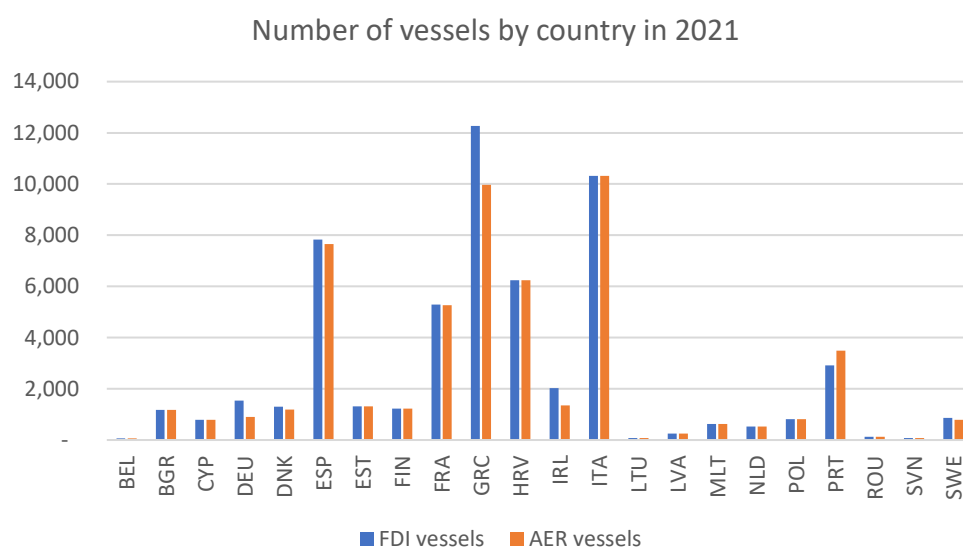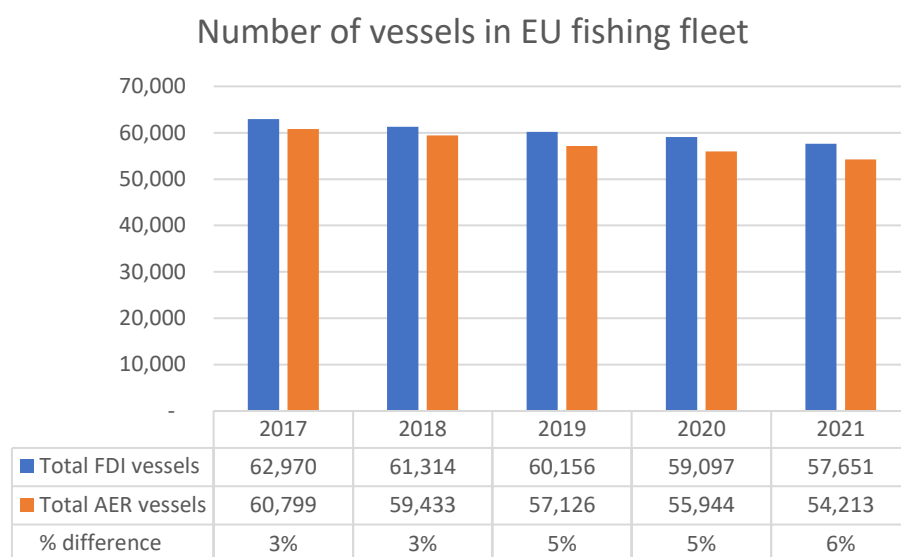
**Figure 3.5.1.4** Differences in total number of vessels between FDI and AER data sets in % (negative value when AER value is higher, inactive vessels and countries with exact match are excluded).



Difference FDI vs. AER in %
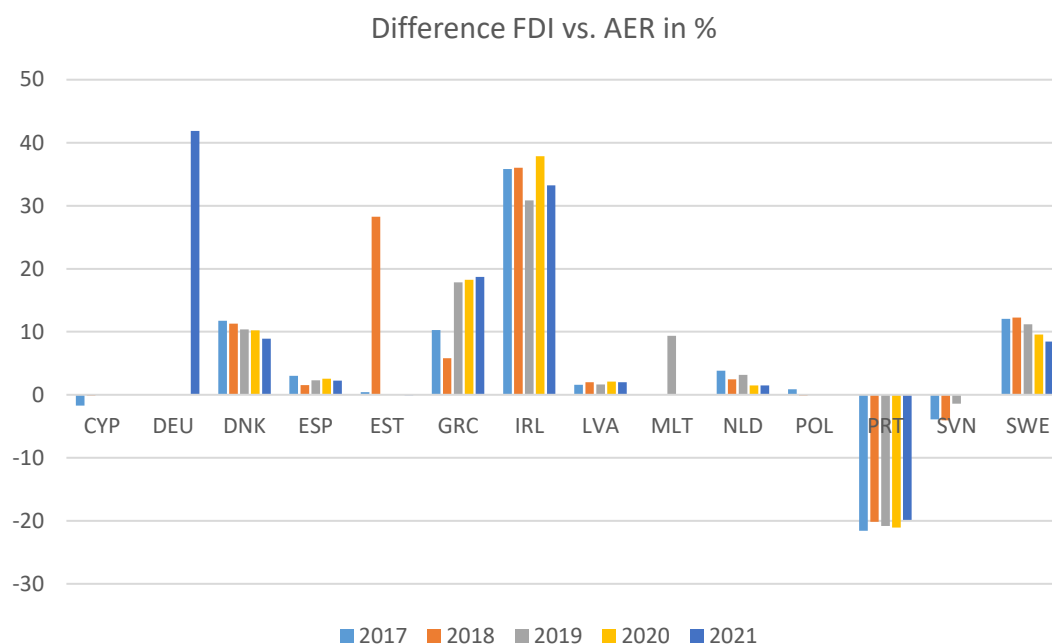
Table 3.5.1.1 presents data on inactive vessels, specifically indicating which countries have provided such data in the data calls and which have not.

**Table 3.5.1.1** Indication if Member State have reported inactive vessels in the FDI 2023 data call.

| Country | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| Belgium | N | N | N | N | N |
| Bulgaria | Y | Y | Y | Y | Y |
| Croatia | Y | Y | Y | Y | Y |
| Cyprus | N | N | N | N | N |
| Denmark | Y | Y | Y | Y | Y |
| Estonia | N | N | N | N | N |
| Finland | N | N | N | N | N |
| France | Y | Y | Y | Y | Y |
| Germany | Y | Y | Y | Y | Y |
| Greece | N | N | N | N | N |
| Ireland | N | N | N | N | N |
| Italy | Y | Y | Y | Y | Y |
| Latvia | Y | Y | Y | Y | Y |
| Lithuania | Y | Y | Y | Y | Y |
| Malta | Y | Y | Y | Y | Y |
| The Netherlands | Y | Y | Y | Y | Y |
| Poland | Y | Y | Y | Y | Y |
| Portugal | Y | Y | Y | Y | Y |

| Country | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| Romania | Y | Y | Y | Y | Y |
| Slovenia | N | N | N | N | N |
| Spain | Y | Y | Y | Y | Y |
| Sweden | Y | Y | Y | Y | Y |

The group agreed that the FDI data call guidance is clear enough that the inactive vessels must be reported in table J – capacity, even though there are 7 MS which are still not reporting it. The EWG suggested to highlight the need to include inactive vessels in the email and formal data request letter in 2024.

Table 3.5.1.2 summarises the differences regarding number of vessels by countries in both data sets. In case of 6 countries (Belgium, Bulgaria, Croatia, Italy, Lithuania and Romania) the total number of vessels and segments provided in FDI and AER was exactly the same.

**Table 3.5.1.2** Differences in total number of vessels, reported by Member State in the FDI 2023 data call and AER 2023 data call.

|  | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **BEL** | 0 | 0 | 0 | 0 | 0 |
| **BGR** | 0 | 0 | 0 | 0 | 0 |
| **CYP** | -13 | -1 | 0 | 0 | 0 |
| **DEU** | 0 | 0 | 0 | 0 | 646 |
| **DNK** | 174 | 160 | 141 | 138 | 116 |
| **ESP** | 257 | 126 | 188 | 205 | 176 |
| **EST** | 7 | 484 | 0 | 1 | -1 |
| **FIN** | 0 | 1 | 0 | 2 | 3 |
| **FRA** | -5 | 7 | 7 | 15 | 23 |
| **GRC** | 1541 | 819 | 2507 | 2549 | 2295 |
| **HRV** | 0 | 0 | 0 | 0 | 0 |
| **IRL** | 735 | 775 | 627 | 769 | 673 |
| **ITA** | 0 | 0 | 0 | 0 | 0 |
| **LTU** | 0 | 0 | 0 | 0 | 0 |
| **LVA** | 4 | 5 | 4 | 5 | 5 |
| **MLT** | 0 | 0 | 64 | 0 | 0 |
| **NLD** | 21 | 13 | 17 | 8 | 8 |
| **POL** | 7 | -1 | 0 | 0 | 0 |
| **PRT** | -672 | -620 | -627 | -622 | -579 |
| **ROU** | 0 | 0 | 0 | 0 | 0 |
| **SVN** | -3 | -3 | -1 | 0 | 0 |
| **SWE** | 118 | 117 | 103 | 83 | 73 |
| **Total** | **2171** | **1881** | **3030** | **3153** | **3438** |

Few discrepancies had been highlighted by experts during the meeting and appear due to different definitions of the fleet population (whether a snap shot of active vessels from a single date is used or whether the activity of any vessel active at any point in the year is used) or, in some cases, due to the exact representation of the population appeared in the fleet registry (without exclusion of inactive vessels).

The EWG stresses the need for Member States to address and resolve the issues found during the meeting. The issues that stood out the most have been reported in the online DTMT (https://datacollection.jrc.ec.europa.eu/dtmt).

*Fleet segments defined in landings data sets*

In the next step, the numbers of fleet segments defined in landings reports was analysed for the years 2017-2021. Figure 3.5.1.5 shows that the vast majority of fleet segments are present in both data sets. However, a small proportion of fleet segments is not reported in both data sets. To minimize the discrepancy due to the clustering of segments, which is used in Annual economic report, the segments in FDI were also clustered following the clustering scheme of each Member State. Figure 3.5.1.6 presents the fleet segments at MS level with reported landings in the two data calls.

**Figure 3.5.1.5** Number of fleets identified in landings data sets of FDI and AER data call in 2017-2021.
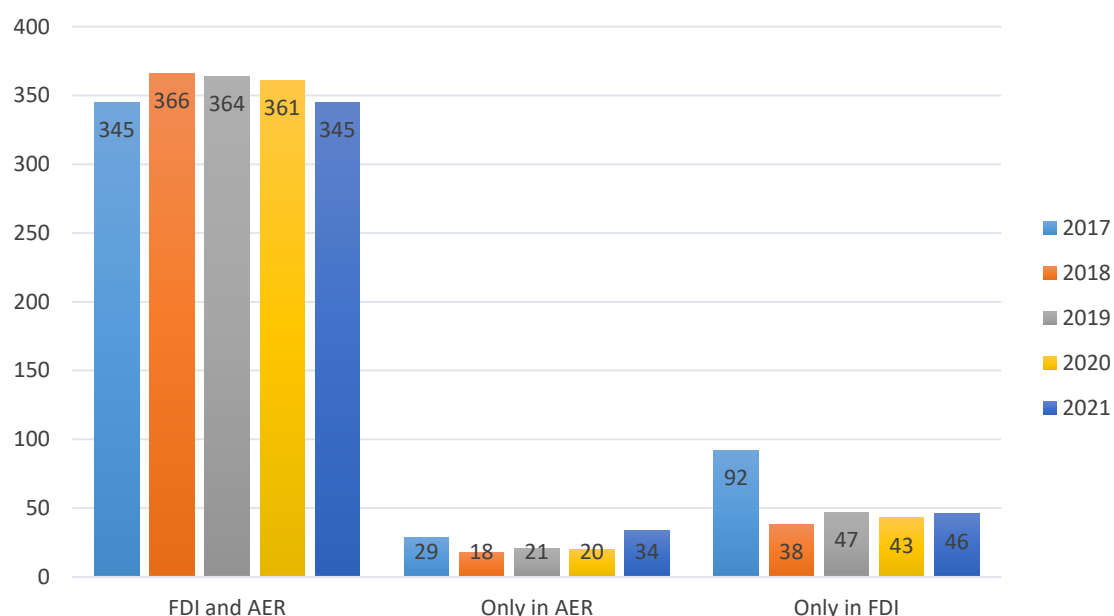
**Figure 3.5.1.6**: Mapping presence of fleet segments in FDI & AER data calls landings templates for 2017-2021.

## 2. Compare sums of effort (days at sea) and landings (tonnes and values) between FDI and the dataset from the Fleet socio-economic data call.

### a) Country level comparison

### Effort

Effort data for the fleet economic data call are provided in 3 different effort templates at different levels of aggregation. For the comparison between data calls, fishing days were used from the 'effort gear' template and days at sea were taken from the 'effort FAO' template. For the purpose of this analysis a percentage difference was calculated as ((dataFDI – dataAER)/data(AER)*100). Therefore, results below 0 show cases when the sum of data provided for the new-FDI data set was lower than the sum of data provided for the AER data set.

The results show that consistency between different data sets with the same information was improved during the years for both fishing days and days at sea, even though some discrepancies between the two data sets (FDI and AER) still remain. High effort is shown for Cyprus for the years 2019-2021 but this could be the fact that Cyprus provides the effort data per gear in FDI but per vessel in AER data call. Small scale fleet in Cyprus is by far the biggest fleet segment since the vessels below 12m are around 95% of total number of vessels. The small – scale fishermen usually use more than one fishing gear in the same fishing trip. 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.

**Figure 3.5.1.7**: Effort data submitted to FDI and AER data calls by MS, 2017-2021. Differences in effort between FDI and AER data sets, expressed as a percentage difference, for 2017-2021.
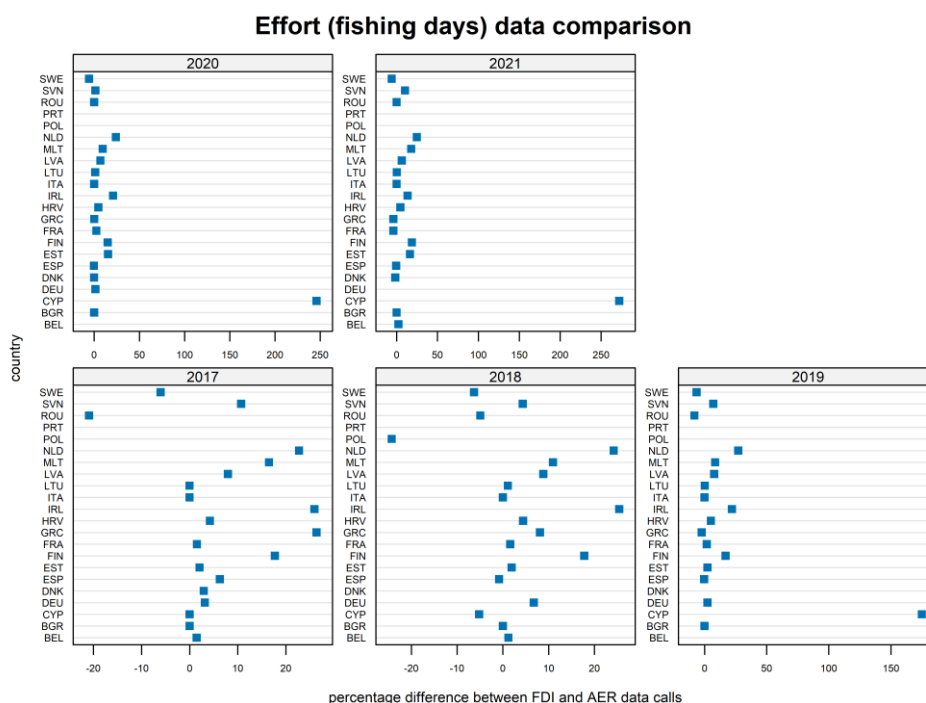
**Effort (days at sea) data comparison**



percentage difference between FDI and AER data calls
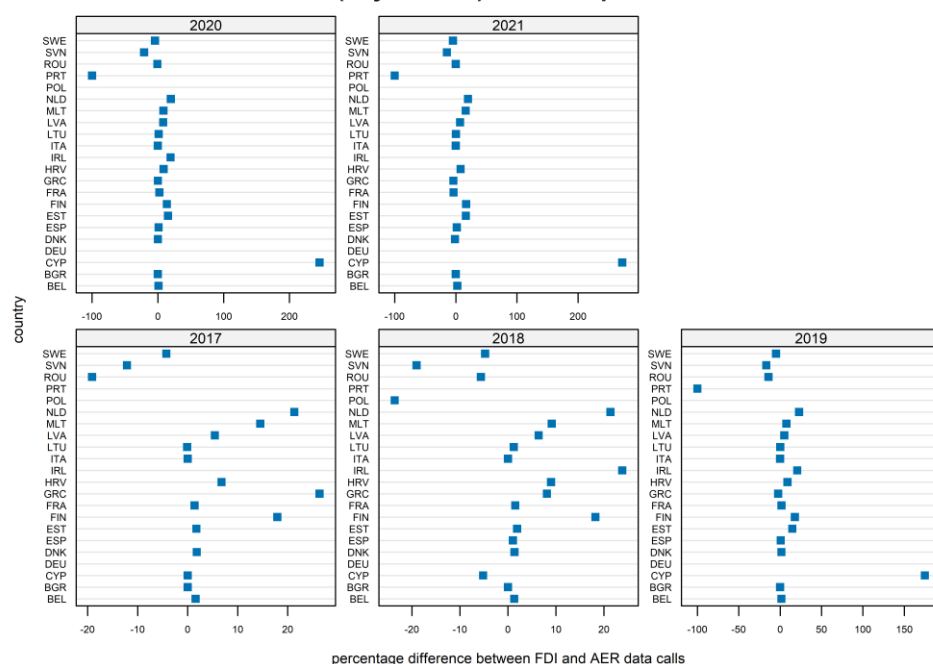
**Table 3.5.1.3:** Comparison in sea days and fishing days reported to FDI and AER data calls, 2017-2021 (in percentage difference between FDI and AER data calls) (difference=(FDI-AER)/AER%)

| | Sea Days | | | | | Fish Days | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MS code** | **2017** | **2018** | **2019** | **2020** | **2021** | **2017** | **2018** | **2019** | **2020** | **2021** |
| BEL | 2% | 1% | 2% | 1% | 2% | 1% | 1% | 28% | 2752% | 2% |
| BGR | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| CYP | 0% | -5% | 175% | 246% | 272% | 0% | -5% | 175% | 246% | 272% |
| DEU | 2% | 0% | 4% | 14% | 21% | 3% | 7% | 2% | 1% | 2% |
| DNK | 2% | 1% | 2% | 0% | -1% | 3% | 13% | 5% | 0% | -2% |
| ESP | | 1% | 1% | 1% | 2% | 3% | -1% | 0% | 0% | -1% |
| EST | 2% | 2% | 15% | 15% | 16% | 2% | 2% | 2% | 15% | 16% |
| FIN | 18% | 18% | 18% | 14% | 17% | 18% | 18% | 17% | 15% | 19% |
| FRA | 1% | 2% | 2% | 2% | -4% | 2% | 2% | 2% | 2% | -4% |
| GRC | 26% | 8% | -2% | 0% | -4% | 26% | 8% | -2% | 0% | -4% |
| HRV | 7% | 9% | 9% | 9% | 8% | 4% | 4% | 5% | 5% | 5% |
| IRL | 28% | 24% | 21% | 19% | 13% | 26% | 25% | 22% | 21% | 14% |
| ITA | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| LTU | 0% | 1% | 0% | 1% | 0% | 0% | 1% | 0% | 1% | 0% |
| LVA | 5% | 6% | 5% | 8% | 7% | 8% | 9% | 8% | 7% | 6% |
| MLT | 15% | 9% | 8% | 9% | 16% | 16% | 11% | 9% | 9% | 18% |
| NLD | 21% | 21% | 23% | 20% | 20% | 23% | 24% | 27% | 24% | 25% |
| POL | 135% | -24% | 13% | 12% | 8% | 155% | -24% | 11% | 11% | 7% |
| PRT | -100% | -100% | -100% | -100% | -100% | 13% | 13% | 16% | -5% | -16% |

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| | Sea Days | | | | | Fish Days | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MS code** | **2017** | **2018** | **2019** | **2020** | **2021** | **2017** | **2018** | **2019** | **2020** | **2021** |
| ROU | -19% | -6% | -14% | -1% | 0% | -21% | -5% | -8% | 0% | 0% |
| SVN | -12% | -19% | -17% | -21% | -15% | 11% | 4% | 7% | 1% | 10% |
| SWE | -4% | -5% | -5% | -4% | -5% | -6% | -6% | -6% | -6% | -6% |
| **Total** | 30% | -2% | -3% | -2% | -3% | **4%** | **4%** | **3%** | **3%** | **1%** |
| **No of MSs with > \|5%\| differences** | **8** | **7** | **9** | **10** | **10** | **9** | **9** | **12** | **9** | **9** |

The results for 2017-2021 show that, in general, consistency between different data sets with the same information exist, however, some discrepancies between the data sets remain. For the year 2017 the difference greater than +-5% between data sets from the two calls is shown for 8 MS in the case of sea days and for 9 MS in the case of fishing days (Table 3.5.1.3).

The results for the years 2018-2021 are not that different. Actually, the difference greater than +-5% between data sets from the two calls is shown for 9 MS in the case of fishing days for all years except for 2019 where 12 MS show inconsistencies. As for the sea days, the difference greater than +-5% between data sets from the two calls ranges from 7 MS (2018) to 10 MS (2020 and 2021).

***Landings data comparison***

The analysis also compared data on the value and weight of landings of national fishing fleets.

For landings at the country level from 2017 to 2021, the difference between two data sets greater than ±5% was for 4 to 6 MS in case of weight of landings and from 8 to 11 MS in case of value of landings, depending on the year (Figure 3.5.1.8 and Table 3.5.1.4). The aggregated weight and value of landings (sum of all MSs) is less than ±5% in all years, except for year 2017 where the FDI figures are 30% higher. This seems to be the effect of the high differences in data submissions by Spain (see also Table 3.5.1.4).

It should also be noted that the difference in Weight and Values of landings for some EU Member States (e.g., Latvia, Estonia, Germany) is related to not providing information about distant fishing fleet in Annual Economic report due to confidentiality reasons.

**Figure 3.5.1.8** Comparison in value of landings between FDI and AER data sets, 2017-2021 (in percentage difference between FDI and AER data calls)
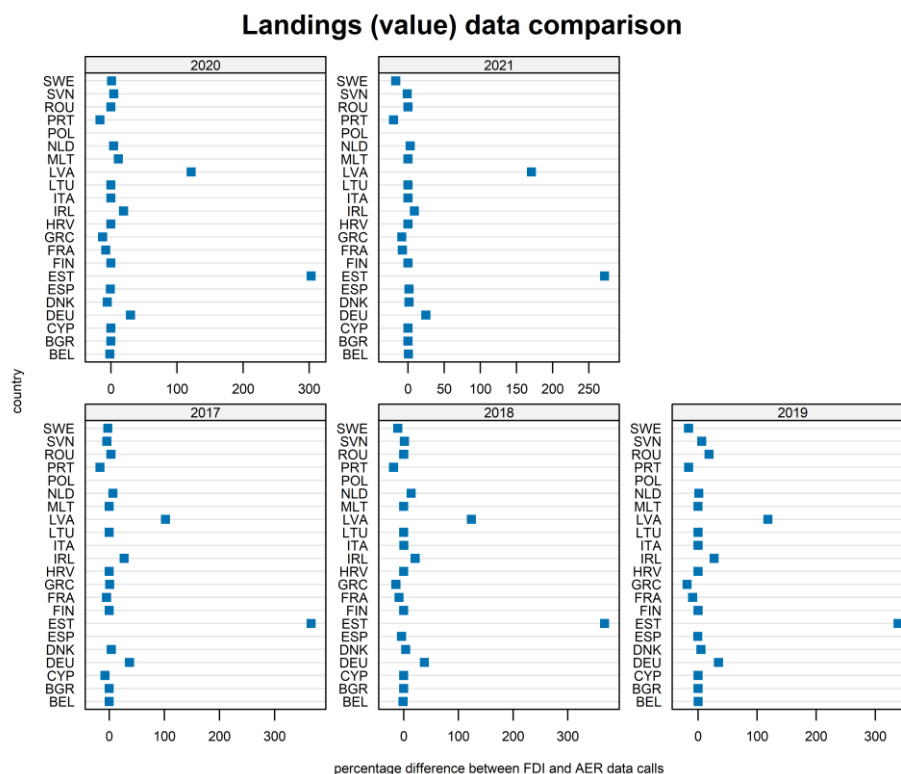


**Figure 3.5.1.9** Comparison in weight of landings between FDI and AER data sets, 2017-2021 (in percentage difference between FDI and AER data calls)
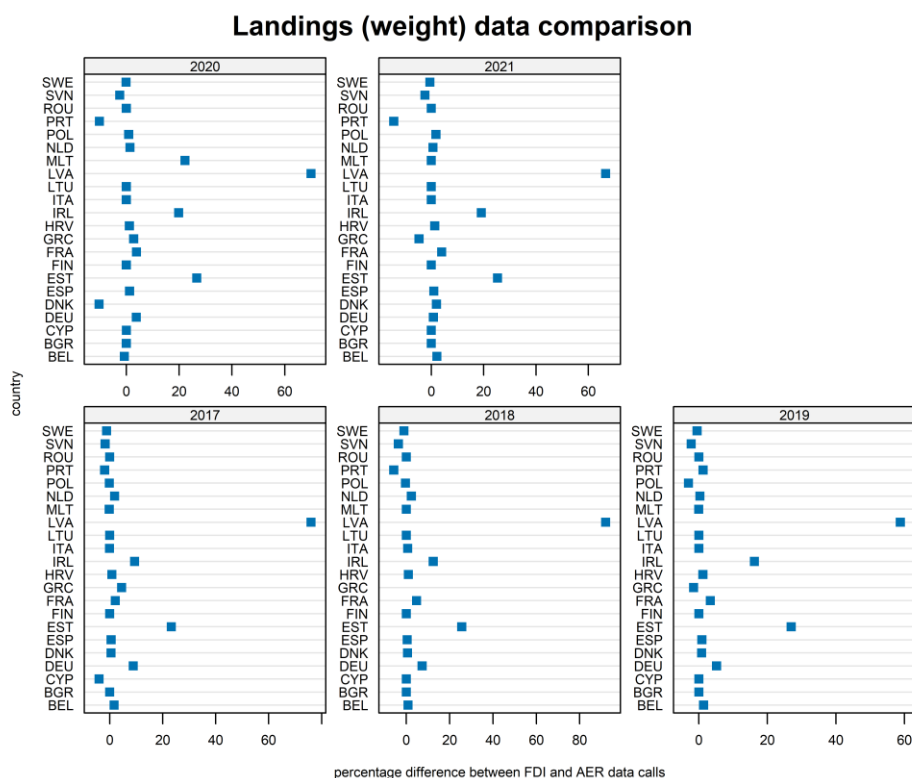
**Table 3.5.1.4** Comparison in weight and value of landings between FDI and AER data sets, 2017-2021 (in percentage difference between FDI and AER data calls) (difference=(FDI-AER)/AER%)

| MS code | Weight of landings | | | | | Value of landings | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2017 | 2018 | 2019 | 2020 | 2021 |
| BEL | 2% | 1% | 1% | -1% | 2% | 0% | -1% | 0% | -2% | 1% |
| BGR | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| CYP | -4% | 0% | 0% | 0% | 0% | -8% | 0% | 0% | 0% | 0% |
| DEU | 9% | 7% | 5% | 4% | 1% | 37% | 38% | 35% | 30% | 24% |
| DNK | 0% | 1% | 1% | -10% | 2% | 4% | 4% | 5% | -5% | 1% |
| ESP | -8% | -5% | -5% | -4% | -4% | 273% | -9% | -7% | -7% | -5% |
| EST | 23% | 26% | 27% | 27% | 25% | 366% | 367% | 339% | 303% | 272% |
| FIN | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| FRA | 2% | 5% | 3% | 4% | 4% | -5% | -8% | -9% | -8% | -8% |
| GRC | 5% | 15% | -2% | 3% | -5% | 1% | -14% | -19% | -12% | -9% |
| HRV | 1% | 1% | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 0% |
| IRL | 9% | 12% | 16% | 20% | 19% | 27% | 21% | 27% | 19% | 9% |
| ITA | 0% | 1% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% |
| LTU | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| LVA | 76% | 92% | 59% | 70% | 67% | 102% | 124% | 118% | 121% | 171% |
| MLT | 0% | 0% | 0% | 22% | 0% | 0% | 0% | 0% | 11% | 0% |
| NLD | 2% | 2% | 0% | 1% | 1% | 7% | 14% | 1% | 4% | 3% |
| POL | 0% | 0% | -3% | 1% | 2% | 4% | 5% | 5% | 6% | 1% |
| PRT | -2% | -6% | 1% | -10% | -14% | -17% | -19% | -16% | -16% | -20% |
| ROU | 0% | 0% | 0% | 0% | 0% | 3% | 0% | 19% | 0% | 0% |
| SVN | -2% | -4% | -2% | -2% | -2% | -4% | 1% | 6% | 4% | -1% |
| SWE | -1% | -1% | -1% | 0% | -1% | -3% | -11% | -16% | 1% | -17% |
| **Total** | **1%** | **1%** | **1%** | **-1%** | **1%** | **32%** | **-4%** | **-4%** | **-3%** | **-3%** |
| No of MSs with > \|5%\| differences | 5 | 6 | 4 | 6 | 4 | 8 | 11 | 11 | 11 | 8 |

### b) Fishing technique level comparison

To check the consistency of indicators provided at fleet segment level, the EWG made effort and value and weight of landings comparisons by fleet segments

*Effort: days at sea*

The overall days at sea provided by fleet segments were compared between the two data calls. Results of the comparison is presented in the Figure 3.5.1.10.

The results show that consistency between different data sets with the same information was significantly improved during the years for days at sea, even though some discrepancies between the two data sets (FDI and AER) still remain. For the year 2019-2021 the difference less than +-5% between data sets from the two data calls is much

greater than the one for the years 2017-2018. In fact for the years 2017-2018 is around 55% but for the years 2019 and 2020 reaches 80%. In most of the cases the difference of over 5% is shown in FDI data set. It should be noted that there are very few cases where data for days at sea are not provided in both data calls.

**Figure 3.5.1.10** Comparison by fleet segment for days at sea in 2017-2021

*Seadays*
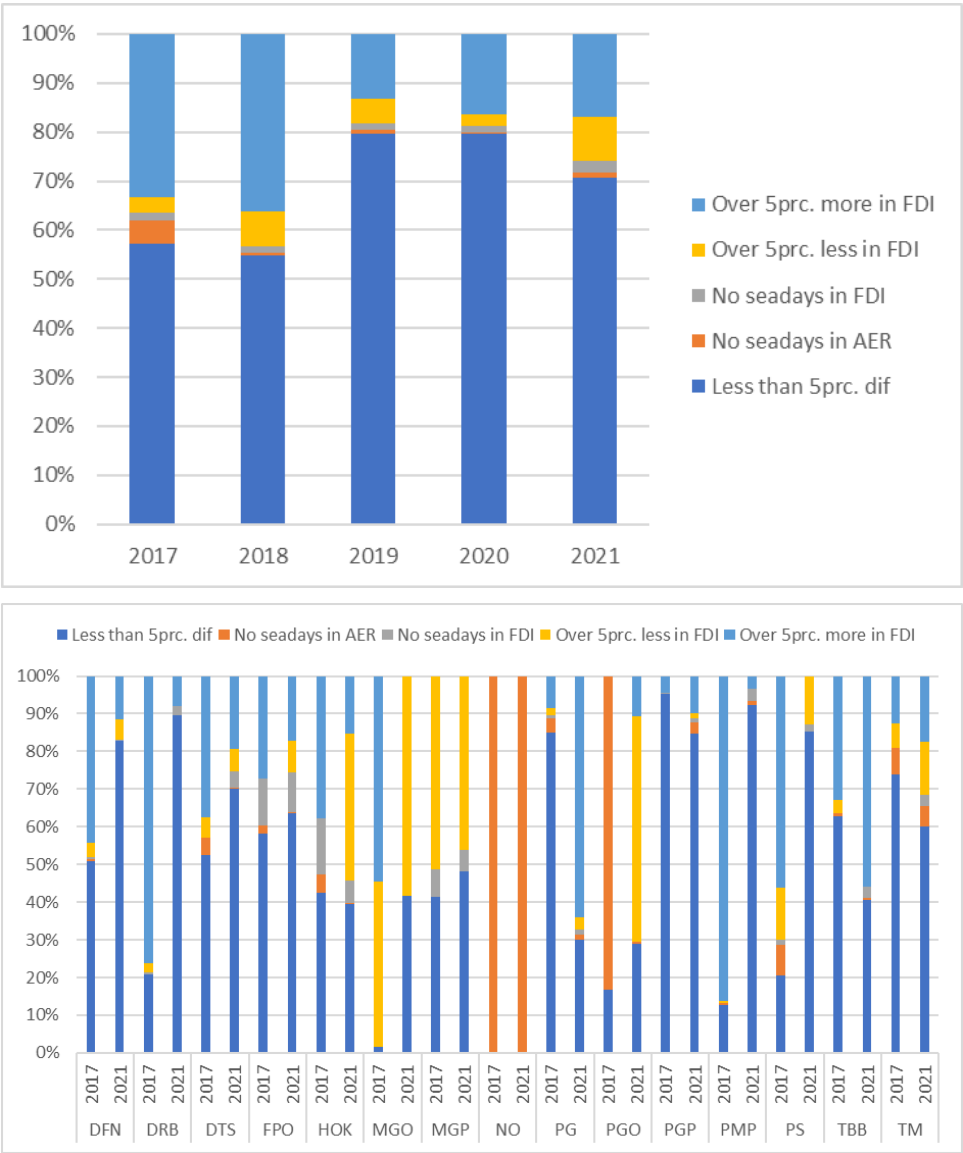


The above figure shows the consistency between the two data sets (FDI and AER) per fishing technique comparing the years 2017 and 2021. Improvement within the years is presented in the Table. The difference less than +-5% between data sets is shown in 9 of the 15 different fishing techniques and in some cases like the DRB the improvement is considerable since nearly 92% shows difference less than +-5% between the two data sets in 2021 compared to around 21% in 2017. As can be seen from the Table there are very few cases where data for days at sea are not provided in both data calls.

*Fish days*

**Figure 3.5.1.11:** Comparison by fleet segment for fishing days in 2017-2021
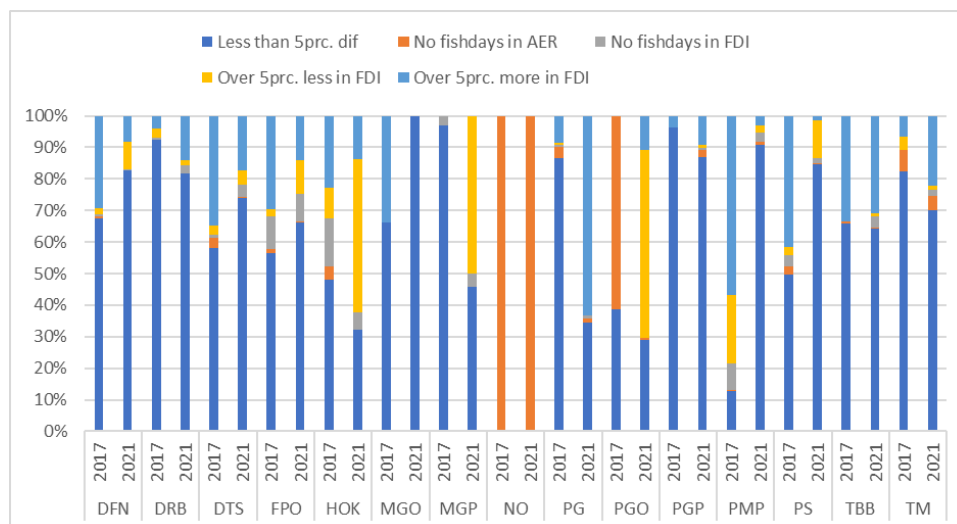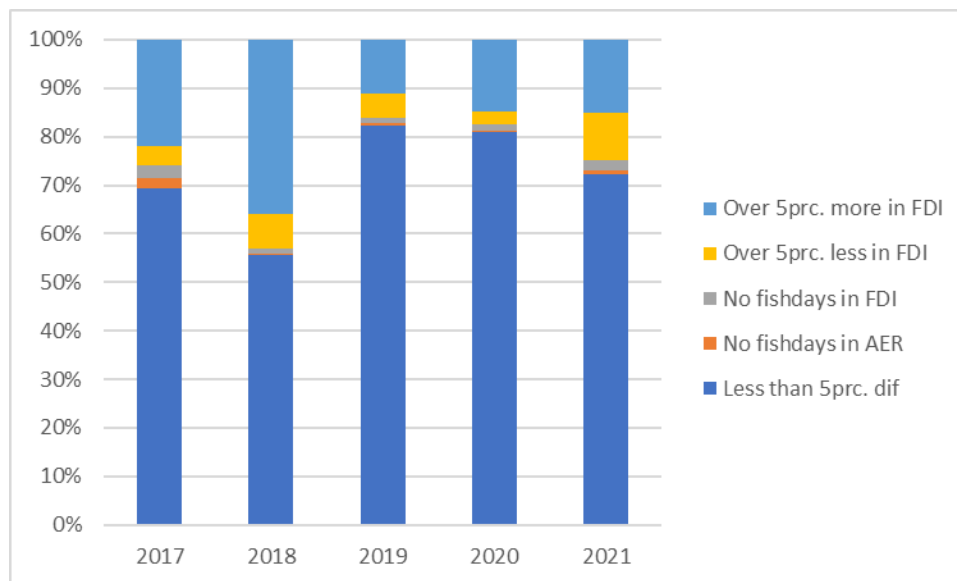
For most of the European fleets, the correspondence between FDI and AER data calls had improved (2017 to 2018). In 2018, days at sea for 9 fleets out of 14, matched (more than 50% of the fleet considered) (figure 3.5.1.11.). However, discrepancies were always noticed especially for TBB and DFN fleet segments. The case of PGO is special with 50% of the segment which had difference less than 5% and around 50% of the fleet which had more than 5% difference.

Moreover, the majority of the segments (12 of 15) had a share of "days at sea" only in FDI data call. The main explanation is that all data in FDI provided unclustered, while providing effort to AER data call some MS might be using clustering.

### Effort: Fishing days

The differences between AER and FDI data calls for fishing days variable were quite similar in 2017 and 2018 (figure 3.5.1.12.). For 12 of 15 fleet segments, "fishing days" were provided only in FDI data call and not in AER data call due to the same reason as for days at sea.

**Figure 3.5.1.12** Comparison by fleet segment for fishing days in 2017 and 2018
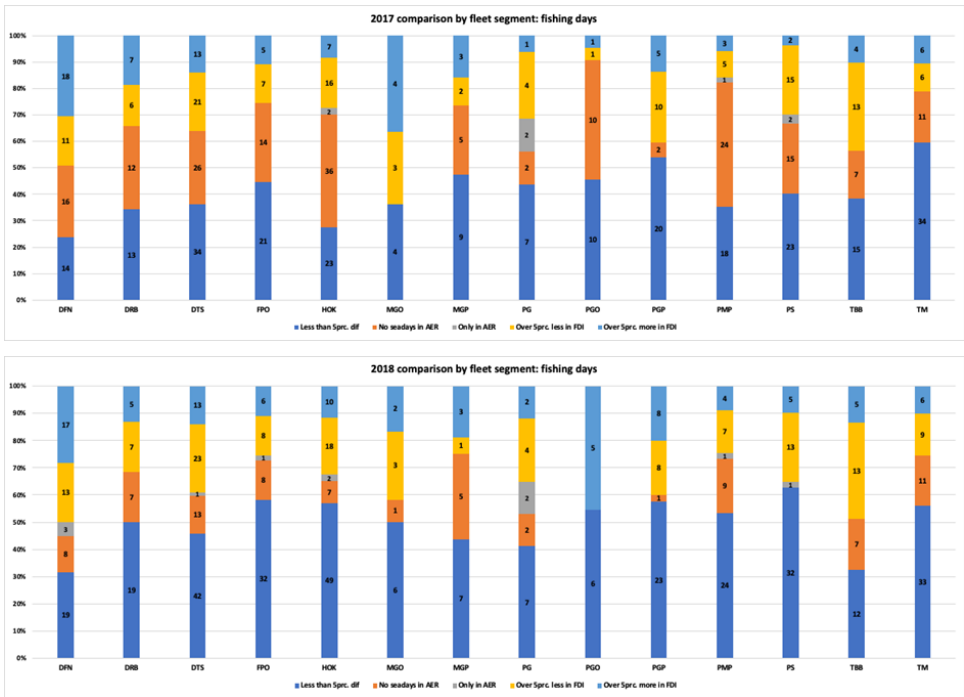


*Landings: Weight of landings*

The figure 3.5.1.13 presents the results of the analysis regarding the differences in weight of landings for the different fishing techniques for the period 2017-2021. According to the results, in 2017, more than 50% of the weight of landings stems from fishing segments with less than 5% difference between FDI and AER. This share has a decreasing trend during the period 2017-2021, ending up at less than 40% in 2021. A possible explanation for that is the fact that on the same time, there is also an increasing trend in the share of landings weight that is not included in the FDI data call.

**Figure 3.5.1.13** Differences in weight of landings by fishing techniques between FDI and AER per year.
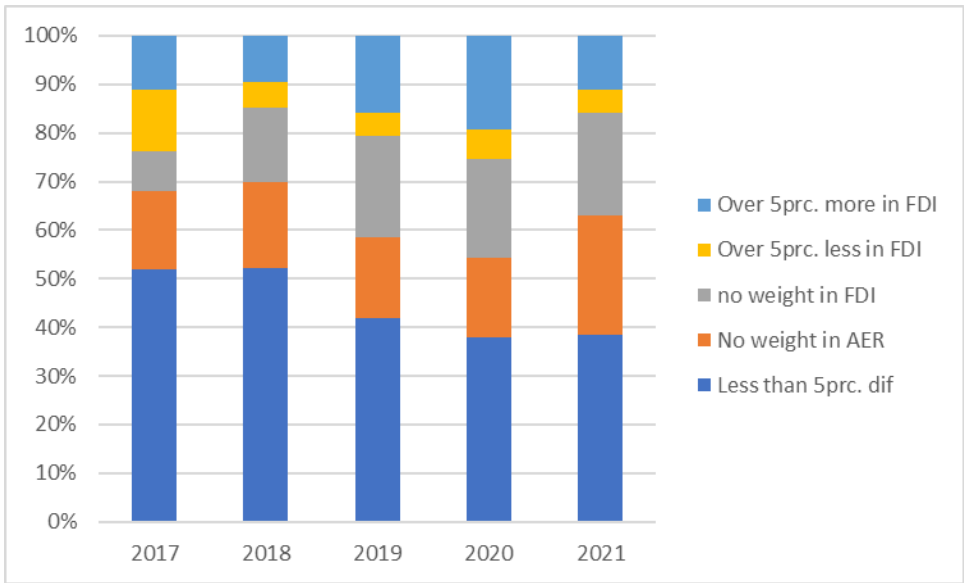
However, it should be emphasized that a part of the difference may explained by the different segment codification in some countries. For example, in the case of Spain, it seems that this difference is merely explained by the different segmentation, as the weight of landings for cases where there is no weight in AER is quite similar with the weight of landings in cases where there is no weight in FDI (see Table 3.5.1.5).

**Table 3.5.1.5**. Sum of weight of landings per country (period 2017-2021), categorised based on the differences between FDI and AER.

| country | Less than 5prc. dif | No weight in AER | no weight in FDI | Over 5prc. less in FDI | Over 5prc. more in FDI |
|---|---|---|---|---|---|
| BEL | 105,189 | 541 | | 1,071 | |
| BGR | 42,466 | | | | |
| CYP | 6,373 | 352 | 445 | 17 | 503 |
| DEU | 110,790 | 158,255 | | 804,210 | 72,990 |
| DNK | 1,753,142 | 411,071 | 1,051,251 | 142,517 | 1,237,983 |
| ESP | 3,661,018 | 3,904,173 | 4,144,731 | 89,916 | 531,479 |
| EST | 308,767 | 78,976 | | | |
| FIN | 646,181 | 710 | | | |
| FRA | 1,752,397 | | | 56,025 | 909,226 |
| GRC | 138,791 | 2,197 | 132 | 36,227 | 130,539 |
| HRV | 336,765 | | | | |
| IRL | 390,719 | 1,397 | | 21,887 | 858,625 |
| ITA | 846,603 | | | | 8,280 |
| LTU | 421,369 | 373 | 364 | 16,117 | 11,452 |
| LVA | 323,647 | 240,932 | 3,115 | | |
| MLT | 11,533 | 384 | | | |
| NLD | 1,149,900 | 62,065 | 1,475 | 430,155 | 80,440 |
| POL | 852,265 | | | 72,543 | 68,311 |
| PRT | 502,301 | | 80,723 | 142,245 | 144,546 |
| ROU | 29,481 | | | | 2,557 |
| SVN | 545 | 2 | | 74 | |
| SWE | 98,262 | 647,379 | | 178,608 | 6,941 |

Figure 3.5.1.14 provides the share of each difference category between FDI and AER by fishing techniques between FDI and AER and per year for the weight of landings. Based on this graph, the share of the segments with less than 5% difference between FDI and AER varies greatly among fishing techniques. Also, it seems that this share changes between the years 2017 and 2021, either decreasing e.g., in the case of DFN, or increasing e.g., in the case of HOK.

**Figure 3.5.1.14** Comparability of landings data at fleets segment level between FDI and AER data calls, 2018 and 2021.
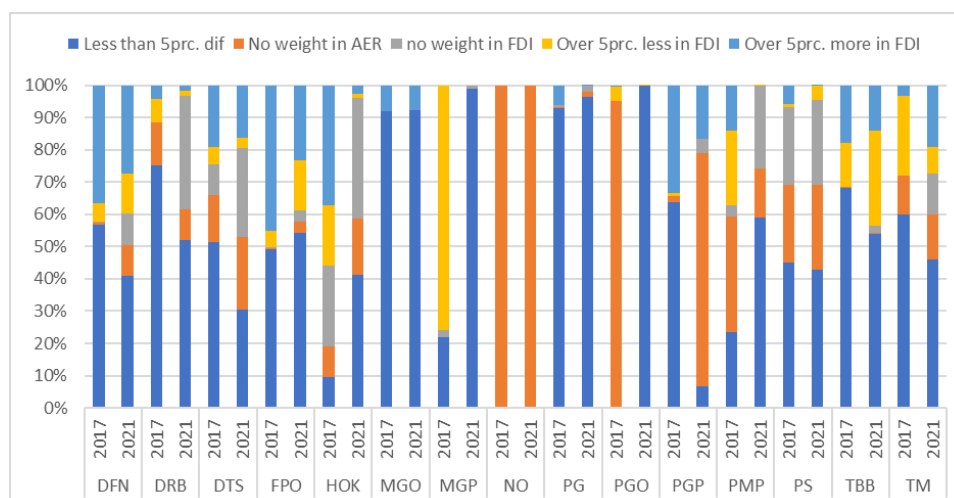


### Landings: Value of Landings

The same analysis as in the case of weight of landings has been implemented also for the value of landings. The figure 3.5.1.15 presents the results of the analysis regarding the differences in value of landings for the different fishing techniques for the period 2017-2021. According to the results, in 2017, about 40% of the value of landings stems from fishing segments with less than 5% difference between FDI and AER. This share has been slightly fluctuated during the period under investigation and end up in the same share in 2021. has a decreasing trend during the period 2017-2021, ending up at less than 40% in 2021. It should also be noted that, as in the case of the weight of landings, there is an increasing trend in the share of landings value that is not included in the FDI data call.

Again, a significant part of the difference may be explained by the different segment codification in some countries. For example, in the case of Spain and Denmark, it seems that this difference is merely explained by the different segmentation, as the value of landings for cases where there is no weight in AER is quite similar with the value of landings in cases where there is no weight in FDI (see Table 3.5.1.6).

**Figure 3.5.1.15** Differences in weight of landings by fishing techniques between FDI and AER per year.
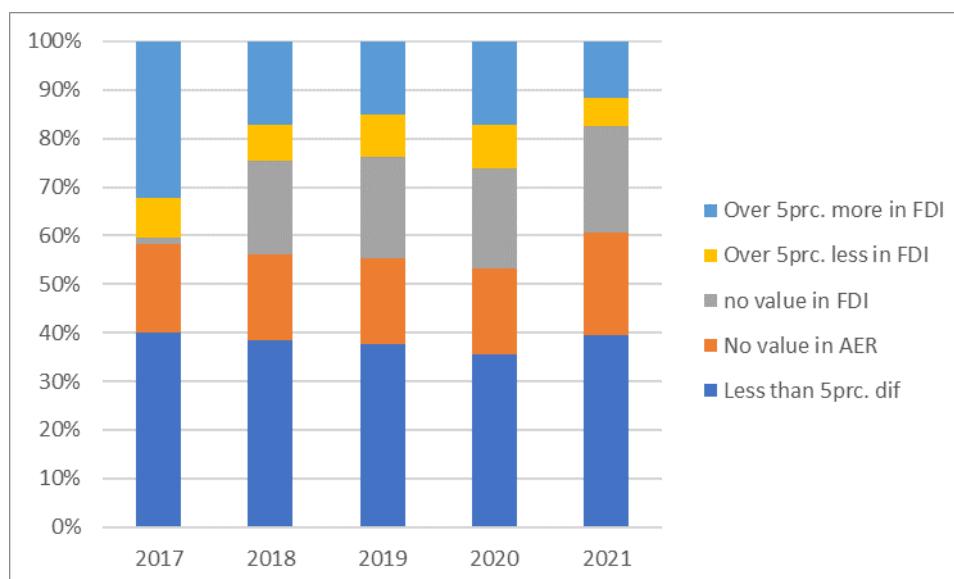


**Table 3.5.1.6** Sum of value of landings per country (period 2017-2021) categorised based on the differences between FDI and AER.

| count ry | Less than 5prc. dif | No value in AER | no value in FDI | Over 5prc. less in FDI | Over 5prc. more in FDI |
|---|---|---|---|---|---|
| BEL | 396,878,84 | 2,415,42 | | 4,189,123 | |
| BGR | 36,122,175 | | | | |
| CYP | 30,447,038 | 2,628,64 | 3,471,917 | 2,245,900 | 2,643,558 |
| DEU | 377,719,62 | 183,416,341 | | 67,286,480 | 753,277,503 |
| DNK | 917,649,823 | 313,414,966 | 564,794,016 | 195,918,264 | 743,035,495 |
| ESP | 6,206,309,58 | 7,947,136,74 | 7,877,739,11 | 775,109,776 | 2,080,934,042 |
| EST | 73,412,315 | 243,355,679 | | | |
| FIN | 137,561,42 | 1,935,83 | | 27,959,532 | |
| FRA | 2,568,387,22 | | | 538,794,248 | 2,848,763,580 |
| GRC | 516,839,48 | 14,384,084 | 552,153 | 822,340,869 | 142,403,222 |
| HRV | 301,469,88 | | | | |
| IRL | 212,386,31 | 1,923,10 | | 121,637,110 | 1,354,367,101 |
| ITA | 4,200,050,40 | | | | 21,670,565 |
| LTU | 362,183,99 | 547,269 | 531,169 | 5,018,068 | 4,857,609 |
| LVA | 59,303,734 | 118,737,129 | 1,538,994 | 15,252,207 | 16,855,439 |
| MLT | 60,445,383 | 1,039,833 | | | |
| NLD | 1,141,097,01 | 63,463,016 | 11,163,493 | 364,956,036 | 467,736,865 |
| POL | 122,326,579 | | | 20,914,459 | 76,831,450 |
| PRT | 915,102,68 | | 263,384,234 | 579,765,429 | 109,491,913 |
| ROU | 14,100,052 | | | | 4,898,549 |

| SVN | 1,596,926 | 18,729 | | 1,316,101 | 1,838,921 |
| SWE | 23,972,569 | 208,845,949 | | 247,708,232 | 61,561,382 |

Finally, Figure 3.5.1.16 provides the share of each difference category between FDI and AER by fishing techniques and per year for the value of landings. Based on this graph, the share of the segments with less than 5% difference between FDI and AER varies greatly among fishing techniques. Also, it seems that this share changes between the years 2017 and 2021, either increasing e.g., in the case of DFN, or decreasing e.g., in the case of TM.

**Figure 3.5.1.16** Comparability of landings data at fleets segment level between FDI and AER data calls, 2017 and 2021
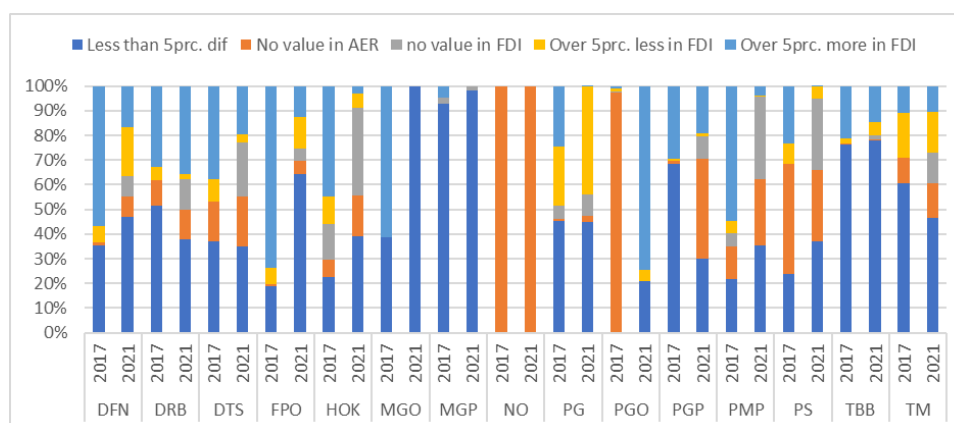


## c) Comparison at the level of gear type within the fleet segment

One of the tasks was also to compare sums of effort (days-at-sea) and landings (tonnes and values) between FDI and the dataset from the Fleet socio-economic data call by Gear type within fleet segment. In this case, it should be noted that the gear type data in the AER data set is based on a voluntary basis. This is the main reason for the lack of this data in the economic dataset, which makes such an analysis unfeasible.

Taking into account comparability issues of the FDI and fleet economic (AER) data calls presented above, The EWG considered that MS should dedicate more effort to improve national coordination during preparation of data for the FDI and AER data calls, especially in the field of definitions of inactive vessels, clustering procedures, allocation of vessels to the fleet segments and when providing landing and effort data by fleet segments and metiers.

Since more than 10 MS had issues on comparability of FDI and AER data, a coordinated approach at EU level may also be important, as it proved successful at resolving issues on transversal data in the past.

In coordination with the JRC, in 2015 and 2016 PGECON organized two Workshops on transversal variables (Zagreb, 2015 and Nicosia, 2016), which focused on methods to calculate days at sea and fishing days. This focused approach proved successful in harmonizing methodologies on transversal data and is referenced as relevant methodology in the FDI data call specifications.

Taking into account the above, the EWG suggests that RCGs consider such a focused approach and organizes in coordination with the JRC, and in line with the work carried out in ISSG on Metier Issues, a workshop aimed at exploring how MS allocate vessels, landing and effort to fleet segments and metiers for the FDI and AER data calls, and to harmonize different approaches, in accordance with DCF definitions on variables and data call specifications.

### 3.5.2 Follow up on DTMT issues reported in STECF EWG-21-12 report in relation to AER and FDI comparison

The final data was obtained only on Thursday, so no time and resources to access DTMT issues. The priority been given to the update of the analysis and data comparison.

### 3.5.3 Review the results of RCG ISSG survey related to comparison of the definitions within the data submitted to FDI and AER data calls

A questionnaire has been drawn up in response to questions raised at the last FDI methodological meeting. This questionnaire was reviewed after the FDI methodological meeting in May 2023, and discussed with the FDI chairs.

The questionnaire that includes 11 questions was sent to each National Correspondents on behalf of ISSG Metier and transversal variables chairs in June, the 22nd.

The EWG 23-10 was tasked to create an overview of the results based on the survey implemented. The survey results are presented per each MS in a table 3.5.3.1.

The EWG 23-10 qualified the answer as following:

| | |
|---|---|
| | consistency between AER and FDI |
| | Inconsistency between AER and FD |
| | Applicable to AER |
| | Applicable to FDI |
| | unclear answer |

- Consistency between AER and FDI

consistency between AER and FDI - If MS uses the same approach and/or methodology in replying to both data calls

- Inconsistency between AER and FDI

Inconsistency between AER and FD - If different person involved in data preparations to data calls

- Show that MS applies different methodologies in response to the data calls

| | |
|---|---|
| | Applicable to AER |
| | Applicable to FDI |

- Reply was provided by the MS in the survey, but the issue not directly relied to the survey question.

| | |
|---|---|
| | unclear answer |

Ireland has not been included in this survey results overview as only responded for the AER part.

**Question 1**
- *The questionnaire for AER and FDI methods/definitions are filled in separately*
- *The AER and FDI methods and definitions are exactly the same*

Only 7 countries from 21 use the same methods/definitions for AER and FDI calls.

**Question 2** - Please indicate if you reply for AER or FDI data call in the survey

- *AER (Annual Economic Report) data call*
- *FDI (Fisheries Dependent Information) data call*

- *Both AER and FDI data calls*

In 10 countries, the same person responds to both data calls.

**Question 3** - For fishing fleet reference, how do you define the fishing fleet population reference?

- *Vessels active during the year*
- *Vessels present in the Fleet Register during the year*
- *By date: vessels present in the Fleet Register on 31/12*
- *Other*

Estonia and Poland apply different approaches to determine fleet population for AER and FDI data calls.

There is a discrepancy between approaches by MS because 3 MSs use population from Fleet Register at 31/12 and does not consider active vessels during the year.

**Question 4** - Are inactive vessels included in AER/FDI capacity tables?

- *Inactive vessels are included*
- *Inactive vessels are not included*

4 countries (BEL, EST, FIN, SVN) mentioned different methodologies in AER/FDI capacity tables: they include inactive vessels in AER data call and do not include inactive vessels when responding to FDI data call.

**Question5** - Confirm that the number of vessels is based on individual vessel id

- *Yes*
- *No*

All MSs have similar approach from 2022, however, Denmark mentioned that until 2021, the number of vessels was based an accounting unit.

**Question 6** - Data completeness: is any part of the fleet excluded from data submission when providing capacity, landings and effort data? E.g., furthermost regions, small-scale fleet, long-distance fleet

- *Yes*
- *No*

4 countries excluded some data from the submission to the AER (BEL, EST, GRC, LVA):

- There are confidentiality issues for Belgium, Estonia and Latvia.
- Greece uses estimations for their collected data which cause difference in population between FDI and AER data (harmonization is in progress to avoid inconsistency between both data calls).

1 country excluded fleets in FDI data call (NLD):

- Netherlands did not provide SSF data for FDI data call.

3 countries excluded when providing data for both data calls (DNK, DEU, FRA):

- Germany excludes mussels' fisheries because they belong to aquaculture.
- France does not provide complementary data collection; however, these data could be used for data estimation.
- Denmark raised confidentiality issues for freshwater fisheries (in lakes).

**Question 7** - Species completeness in data provided: are all species provided in landings data submissions?

- *All species landed*
- *Species with biological information*
- *Main species landed*
- *Other*

All MSs provide all species landed when responding to FDI data call except Greece which does not include landings from following gears: LTL, LHP, LHM, GTN, GNC, DRH as there are no obligation to provide data since 2020.

**Question 8** - Fleet segmentation: are fishing activity data provided by clustered or unclustered fleet segment for effort and landings data

- *Clustered fleet segments*
- *Unclustered fleet segments*

6 MSs provide clustered fleet segments for both data calls.

6 MSs provide clustered fleet segments only to AER.

For the three questions below, MS had the option to provide open answers. EWG 23-10 decided to group these answers to facilitate the analysis.

**Question 9** - Can you briefly describe the method applied to assign vessels to principal supra region?

11 MSs provide data for "one Supra Region" for both data calls.

Germany, Denmark, Latvia and Netherlands use different methods to assign vessels to supra region between data calls.

- In Germany, vessels operating in "other region" are clustered for AER and does not show separated segments. For FDI, "catch" is used to assign vessels to supra region.
- In Denmark, for AER data call, vessels operating in "one supra region" is provided. For FDI, "fishing days" considered when assigning vessels to the supra region.
- In Latvia, for AER data call, data is provided for "one supra region" due to confidentiality of the vessels operating in Atlantic. For FDI data call, all segments are provided by "operating areas".
- For The Netherlands, in the AER data call, vessels are assigned to the supra region based on the "major days at sea". For FDI, they are assigned following the rule where the vessels spend most of their time fishing within a year.
- For Sweden, the response for AER is unclear. For FDI, supra region is assigned by "days at sea".

**Question 10** – Can you briefly describe the method applied to assign vessels to Geo Indicator?

For 13 MSs, geo indicator is not applicable for both data calls.

- In Spain, vessels are assigned to a geo indicator when the most frequently declared division refers to an area with geo indicator for both data calls.
- France uses "Fleet Register data". Geo indicator is assigned to the vessels on the basis of their district registration in the national Fleet Register on their last day of registration in the year.
- Lithuania and Latvia assigned geo indicator by "operating area" which separate Baltic and Atlantic vessels.
- For The Netherlands, in the AER data call, vessels are assigned to the geo indicator based on "the major days at sea". For FDI, they are assigned following the rule where the vessels spend most of their time fishing within a year.
- Poland does not report geo indicator.
- Portugal uses "Fleet Register" and "operating area" for both data calls.
- Sweden does not provide geo indicator for FDI. For AER, the survey reply is unclear.

**Question 11** - Can you briefly describe the method applied to assign vessels to fishing technique/EU DCF fleet segment?

12 MSs assign fishing technique bases on "number of fishing days per gear" for both calls.

- Denmark, Germany, Romania and Greece use "gear defined in the Fleet Register".

- Cyprus uses the "fishing license". If a vessel has more than one fishing license, it is assigned to the fleet segment based on landings/value of landings.
- Spain and Portugal use "catch per gear" to assign vessel to fishing technique.
- Finland uses the "number of trips per gear".

**General conclusion**

The survey is a preliminary overview to understand consistency between FDI and AER data calls by MSs and show the feasibility to link both data calls.

**Table 3.5.3.1** Survey overview by Member State (Ireland excluded)

| | |
|---|---|
| 🟩 | consistency between AER and FDI |
| 🟪 | Inconsistency between AER and FDI |
| 🟦 | Applicable to AER |
| 🟧 | Applicable to FDI |
| 🟥 | unclear answer |
| * | opened answers grouped by EWG 2310 |

| # | Question | Answer | BEL | BGR | CYP | DNK | DEU | EST | ESP | FIN | FRA | GRC | HRV | ITA | LTU | LVA | MLT | NLD | POL | POR | ROU | SVN | SWE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Definitions and Methodology for the AER and FDI data calls: | The questionnaire for AER and FDI methods/definitions are filled in separately | 🟪 | | | 🟪 | 🟪 | | 🟪 | | 🟪 | | 🟪 | | | 🟪 | | 🟪 | 🟪 | | | 🟪 | 🟪 |
| | | The AER and FDI methods and definitions are exactly the same | | 🟩 | 🟩 | | | 🟩 | | 🟩 | | 🟩 | | 🟩 | 🟩 | | 🟩 | | | 🟩 | 🟩 | | |
| 2 | Are different person replyed to the AER and FDI data calls | one person | | 🟩 | 🟩 | | 🟩 | 🟩 | | 🟩 | 🟩 | | 🟩 | 🟩 | | | | 🟩 | | 🟩 | 🟩 | | |
| | | different persons | 🟪 | | | 🟪 | | | 🟪 | | | 🟪 | | | 🟪 | 🟪 | 🟪 | | 🟪 | | | 🟪 | 🟪 |
| 3 | Definition for the fishing fleet population | Vessels active during the year | 🟩 | | | | | | | | | | | | | 🟩 | 🟦 | | | | | | 🟦 |
| | | Vessels present in the fleet register during the year | | 🟩 | 🟩 | 🟩 | | 🟧 | | 🟩 | | | 🟩 | | | | 🟧 | | | | | 🟩 | |
| | | By date: vessels present in the fleet register 31/12 | | | | | 🟩 | 🟦 | 🟩 | 🟦 | | 🟩 | | 🟩 | | 🟦 | | 🟩 | 🟩 | | | | |
| 4 | Inclusion of the inactive vessels in Capacity table | Yes | 🟦 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟦 | | 🟩 |
| | | No | 🟧 | | | | | 🟧 | | 🟧 | | | | | | | | | | 🟧 | | | |
| 5 | number of vessels based on individual vessel id | Yes | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 |
| | | No | | | | | | | | | | | | | | | | | | | | | |
| 6 | Data completeness: excluded information or missing data in the capacity, landings and effort tables | Yes | 🟦 | | | 🟩 | 🟩 | 🟦 | | 🟩 | 🟦 | | | | 🟦 | | 🟧 | | 🟩 | | | | |
| | | No | 🟧 | 🟩 | 🟩 | | | 🟧 | 🟩 | 🟩 | | 🟧 | 🟩 | 🟩 | | 🟧 | 🟩 | 🟦 | | 🟩 | 🟩 | | |
| 7 | Species completeness: excluded information or missing data for species provided in landings data tables | All species landed | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟩 | 🟦 | 🟩 | | | | | | | | | | | |
| | | Species with biological information | | | | | | | | | | | | | | | | | | | | | |
| | | Main species landed | | | | | | | | | | | | | | | | | | | | | |
| | | Other | | | | | | | | | | 🟧 | | | | | | | | | | | |
| 8 | Fleet segmentation: is data provided by clustered or unclustered fleet segment | Clustered fleet segments | 🟦 | | 🟩 | 🟩 | 🟩 | | | 🟩 | | 🟩 | | 🟩 | | | | | | | 🟩 | | 🟩 |
| | | Unclustered fleet segments | 🟧 | 🟩 | | 🟧 | 🟧 | 🟩 | 🟩 | | 🟩 | | 🟩 | | 🟩 | 🟧 | 🟩 | 🟧 | 🟩 | 🟧 | | 🟩 | |
| 9 | Description of method applied to assign vessels to principal supra region* | No applicable (one supra region) | 🟩 | 🟩 | 🟩 | | 🟦 | 🟦 | | 🟩 | | 🟩 | | 🟩 | 🟦 | | | | 🟩 | | 🟩 | | 🟥 |
| | | supra region and fishing days | | | | 🟧 | | | | | | | | | | | | 🟧 | | 🟩 | | | 🟧 |
| | | supra region and days at sea | | | | | | | | | | | | | | | | 🟦 | | | | | |
| | | Fleet Register data | | | | | | | | | 🟩 | | | | | | | | | | | | |
| | | supra region and catch | | | | | | 🟧 | | | | | | | | | | | | | | | |
| | | operating area | | | | | | | | | | | | | 🟩 | 🟧 | | | | | | | |
| | | supra region and fishing technique | | | | | | | 🟩 | | | | | | | | | | | | | | |
| 10 | Description of method applied to assign vessels to geo-indicator* | No applicable (NGI - No Geo Indicator; single geografical area) | 🟩 | 🟩 | 🟩 | | 🟩 | 🟩 | | 🟩 | | | | 🟩 | | | | | 🟩 | | 🟩 | 🟧 | |
| | | supra region and fishing days | | | | | | | | | | | | | | | | 🟧 | | | | | |
| | | supra region and days at sea | | | | | | | | | | | | | | | | 🟦 | | | | | 🟥 |
| | | Fleet Register data | | | | | | | | | 🟩 | | | | | | | | | | | | |
| | | Geo-indicator not provided | | | | | | | | | | | | | | | | | 🟩 | | | | |
| | | operation area | | | | | | | 🟩 | | | | | | 🟩 | | | 🟩 | | | | | |
| | | supra region and fishing technique | | | | | | | 🟩 | | | | | | | | | | | | | | |
| 11 | Description of method applied to assign vessels to fishing technique/EU DCF fleet segment* | number of fishing days per gear | 🟩 | 🟩 | | 🟩 | | | 🟩 | | 🟩 | | 🟩 | | 🟥 | | 🟩 | | | 🟥 | | 🟥 | |
| | | gear defined by Fleet Register | | | 🟩 | | | | | | | | | | | | | | | | | | |
| | | fishing licence (landings) | | | 🟩 | | | | | | | | | | | | | | | | | | |
| | | catches per gear | | | | | | 🟩 | | | | | | | | | | | | 🟩 | | | |
| | | number of trips per gear | | | | | | | | 🟩 | | | | | | | | | | | | | |

*3.5.4 Evaluate any suggestions for changes in data calls provided by the RCG ISSG. If there are any inputs from the ISSG, these should be considered*

**Introduction**

Under ToR 5.4, three different tasks have been completed by the EWG 23-10 following works done in 2023 by the RCG ISSG on "Metier and transversal variables issues", which deals since 2021 with issues and best practices linked to the definition and calculation of transversal variables.

Based on a request from RCG Econ chairs at the Liaison meeting 2022, a suggestion for tasks for the ISSG and the FDI were drafted. A meeting was arranged with RCG Econ chairs to coordinate the work in January 2023, and to avoid duplication of work, consequently the ambition of the work within the ISSG was modified. The work done within the ISSG is here followed up by the EWG 23-10 and could be further discussed in a potential RCG Econ workshop on methodology of transversal variables suggested before.

The mid-term goal is for Member State to submit the fishing activity data only in the FDI data call, where in the AER data call only socio-economic data will be submitted. For that, there must be a match between the two datasets which implies some work on harmonization of variables submission to AER and FDI data calls *(capacity, landings and effort)*.

**First task of the EWG 23-10**, was to review the work done by ISSG under the following task: *"Follow up on issues raised in STECF EWG-21-12 regarding the inconsistencies between AER and FDI data"*.

To answer this task, ISSG had done a complete overview of issues raised in the FDI 2021 report which is available in the ToR7 of the 2023 report of *"ISSG Métier and transversal variable issues"*[3]. Principal conclusions have been hereunder reviewed by EWG 23-10.

**Second task of the EWG 23-10**, was to review the work done by ISSG under the following task: *« Check and compare the codes and content in the data call templates for both data calls, in case of deviations make a suggestion for changes and unification in data calls structure ».*

For that, ISSG has compared the list of asked fishing activity variables and the reference framework list of codes of the two data calls highlighting eventual inconsistencies between their annexes and providing suggestions for change and unification of the data calls. EWG 23-10 summarized and highlighted the principal conclusions hereunder reviewing the analysis done. The suggestions will be communicated to JRC for next year data calls. Detail analysis could be found in the 2023 report of *"ISSG Métier and transversal variable issues"*[1].

Finally, ISSG has drafted a questionnaire to answer its following tasks: *"Discuss methodologies and make an inventory of methods used by MS to define the common variables used in the AER and FDI data calls"* and *"Discuss the definitions, clustering procedures and allocation of vessels to the fleet segment for FDI and Economic data calls"*. Considering the workload of the ISSG this year, it was not possible for ISSG to send out the questionnaire. Nevertheless, the draft questionnaire was presented to JRC which send it out to the NCs as an input for the STECF FDI meeting EWG 23-10 of September 2023. In a **third task, EWG 23-10** analysed the answers provided by the NCs to the questionnaire survey and draw some conclusions on this basis which are developed hereunder.

## Review the work done by ISSG under the following task: *"Follow up on issues raised in STECF EWG-21-12 regarding the inconsistencies between AER and FDI data"*

Overall, the work done under this task is very exhaustive and in-detail, raising important issues that have to be tackled prior to harmonization of the two data calls. Principal issues to tackle with are re-issued hereunder with review of the EWG 23-10. Details of the overview could be found in the 2023 report of the ISSG on *"Metier and transversal variables issues"*.

- **Timing in data exports to answer the data call**: *AER data legal deadline is 30 March 2023 and some data submitted are provisional. FDI data call legal deadline is 30 June 2023*

**Comment by EWG 23-10:** Final validated fishing activity estimates on the year T-1 are provided in the FDI data call in the end of June of year T when AER askes for preliminary fishing activity estimates for the year T-1 and final estimates for year T-2 in end of March of year T. It seems that final fishing activity estimates for the year T-2 could be derived by AER on the basis of estimates provided in FDI which is not the case for preliminary estimates asked by AER for year T-1. **It**

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[3] Available at *https://github.com/ices-g/RCGs/blob/master/Metiers/Reports/ISSG%20Metier%20and%20transversal%20variable%20issues%202023%20Report.pdf*

**seems that this issue could be only solved if preliminary fishing activity estimates continue to be asked by AER which is not ideal.**

- **Clustering of fleet segments used in AER data set**: *sensitive economic data are reported by clustered fleet segments only.*

<u>**Comment by EWG 23-10:**</u> Fishing activity estimates available in FDI database should not be clustered. They could be clustered for AER needs following the clustering reference table available in the AER data call explaining how fleet segments are clustered to provide the sensitive economic data. Issue could raise, only, if fishing activity estimates are estimated on the basis of the same sampling design used for economic data. In this case, no robust estimation of landings/effort data can be made for segments that have been clustered with other segments. **It should be assessed if it is the case in some Member States and if yes how these Member States could answer the FDI data call where non-clustered estimates are requested.**

- **Inactive vessels reported to AER and not to FDI.** *It has been specified two years ago in the FDI data call to include inactive vessels in table J.*

<u>**Comment by EWG 23-10:**</u> This **issue** has been **solved** with the specification added in FDI data call to include inactive vessels in table J.

- **Difference in counting number of vessels**: *is it a snapshot of from a single date (e.g., 31/12) or all vessels active during the year?*

<u>**Comment by EWG 23-10:**</u> The counting "number of vessels" should follow the regulation 2021/1167, point 5.2: "*economic data shall be collected on all active and inactive vessels listed in the Union Fishing Fleet register on 31 December of the reporting year, and on other vessels that have fished for at least one day during the reporting year*", which give precise information on the methodology which should be applied to count the number of vessels for AER. **EWG 23-10 suggests that, for harmonization, reference to this regulation should be made in the AER and FDI data calls in order to apply the same definitions in the two data calls.** This issue was also part of the questionnaire circulated in advance of the EWG 23-10 meeting and analysed in chapter 3.5.3.

- It was highlighted that MS should put effort in **improving national coordination** when preparing the AER and FDI data calls, especially for:
  - *Defining fleet segment clustering procedures. There are fleet segments that are not matched between the data calls (Figure 3.3.1.3. in STECF-2021-12). This can be due to clustering in one data call and not in the other, or different FISHING_TECH definitions across countries. The GEO_INDICATOR field should be used as part of the fleet segment check.*
  - *Allocation of vessels to fleet segments.*
  - *Landing and effort data. Some differences in total effort by country in the two data calls.*

<u>**Comment by EWG 23-10: EWG 23-10 reemphasized the need to improve national coordination when preparing the AER and FDI data calls**</u> with the aim that final fishing activity estimates would be only provided through the FDI data call and used by AER for their needs. This is indeed particularly the case for vessels allocation to segments which could be a difficult task especially for SSF. In such cases, national coordination will be of major importance to avoid any discrepancies. However, it should be noted that the discrepancies provided in Fig. 2 of the 2023 ISSG report (p. 29) seems to be decreased in the most recent data

calls. Regarding the fleet segment clustering procedures, EWG 23-10 re-emphasized that fishing activity data should be provided at disaggregated level in FDI data call and could be aggregated for AER needs by clustered fleet segment considering the reference table available in AER. Finally, EWG 23-10 raised an issue for fishing effort data regarding the "Fishing Days" metric which could be duplicated when calculated by gear for passive gears which could lead to issues when comparing AER and FDI fishing effort data as AER is provided at vessel level when FDI is provided by gear. Nevertheless, it should not be the case for the fishing effort metric "Days At Sea" which is the fishing effort metric asked in AER data call and should be calculated at the vessel level.

## Review the work done by ISSG under the following task: "*Check and compare the codes and content in the data call templates for both data calls, in case of deviations make a suggestion for changes and unification in data calls structure. Any suggestions for changes to data calls should be communicated to JRC and STECF EWG-FDI*"

An exhaustive work has been done under this task to identify any discrepancies in the two data calls. Detailed analysis is available in the 2023 ISSG report. The report provides an analysis that first summarizes the fishing activity data requested in the two data calls, checking if there are any missing information in one of the data calls, and then the definition of each fishing activity code requested for the two data calls are analysed to identify any differences in codes and definitions. EWG 23-10 summarized and highlighted the principal conclusions hereunder reviewing the analysis done:

- **Comparison of fishing activity data requested in AER and FDI data calls**

"*This first comparison of the two fishing activity data requests shows that all the fishing activity variables (capacity, fishing effort and landings) asked in the AER data call are available in FDI data call and should be possibly derived from them. Also, it should be possible to derive from the FDI data, the aggregation level asked in the AER data call, at least for the mandatory fields i.e.: by country, year, supra-region, fishing technique, vessel length range and geo indicator. Furthermore, the fishing activity variables for which data is asked in AER data call with the further subregion disaggregation level should be also possibly derived from FDI data where they are available at an even more disaggregated level. Only the sub-segmentation of vessels proposed in the new non-mandatory/optional fields "by "gear", "fishery" and "activity" indicators" in the AER data call are not available in the FDI data call (see hereunder).* "

**Comment by EWG 23-10:** **The usefulness and the usage of these new non-mandatory/optional fields asked in the AER data call should be assessed by AER.** In case these new non-mandatory/optional fields are fundamental for the AER needs, it should be valued by FDI if this information should be and could be added to the FDI data call.

- **Issue** regarding the **time series available in the two data calls:**
  - *AER data are available from 2008 until 2021 while FDI data are available since 2013 until 2021 (2022 will be made available in September 2023)*

**Comment by EWG 23-10:** EWG 23-10 discuss the extension of the time series available for FDI database for the following years. Although difficulties raised for some countries, FDI considered to extent the time series until 2011 *(first year provided in the old FDI data call)* in the following data calls. **The extension of the FDI database until 2008 will be nevertheless not attainable. AER should assess if a time series from 2013 (eventually 2011) to 2022 will be sufficient for their needs.**

- *AER data call asks for some provisional annual fishing activity variables, non-mandatory data on the year N-1 in February/March N when the data are not available in FDI database (should*

*be made available on September N). This issue related to data availability and timing in data exports to answer data calls should be studied especially the usefulness/needs to have preliminary/non-validated fishing activity data on year N-1*

**Comment by EWG 23-10:** see also above comment. The report raises an inconsistency in terms of year t-1, where the AER asks optionally, preliminary results on effort and landings. Checking the last published AER, there are many countries 16 out of 22 countries that provide preliminary landing data for year t-1 and 17 out of 22 countries that provide preliminary effort data. It should also be emphasized that, these data "*are not mandatory but requested where possible in order to estimate economic projections for 2023. These data, where provided, will be flagged as preliminary…*"[4]. Therefore, the EWG 23-10 recognizes that, even not mandatory, these data seem to be important for the purposes of the AER and thus, this inconsistency between the two data calls can be considered as important. **It seems that this issue could be only solved if preliminary fishing activity estimates continue to be requested by AER which is not ideal.**

- **Issue** regarding the **supra-region:**
  - *The definition of NAO differs between the data calls. Indeed, NAO FDI definition includes in addition the North of Azores, East Greenland and CECAF areas around Madera and the Canary Islands (FAO areas 34.1.1, 34.1.2, 34.2.0) which are not included in the definition retained for AER.*

**Comment by EWG 23-10:** **Definition of the NAO supra-region should be harmonized between the two data calls.** FDI definition seems to be more complete and could be eventually used. AER should assess that.

- **Issue** regarding the **fishing technique:**
  - *FDI includes explicitly in their annexes the code to be used for non-active/inactive vessels (INACTIVE), code not found in AER, but it is specified that AER requires also explicitly to report inactive vessels for fleet capacity variables.*

**Comment by EWG 23-10:** After check, it has been observed that same codification (INACTIVE) is used in AER data call consequently this **issue** could be considered as **solved**.

- *For the code "PG – Vessels using passive gears only for vessels <12m", there is a footnote available in AER not listed in the FDI annexes: "Vessels less than 12 meters using passive gears in the Mediterranean Sea and Black Sea may be disaggregated by gear type. Without disaggregation, the gear code is 'PG'" i.e., that the code "PG" should be avoided for Mediterranean and Black Sea vessels but could be used otherwise. This code remains confusing as it corresponds to an aggregation of other passive gears fishing technique which could be used only for some vessel length ranges. The description should be consistent with the EU-MAP (EU 2021/1167) table 8 footnotes on how to assign the fishing technique.*

**Comment by EWG 23-10:** See also above previous comment. EWG 23-10 considers that **improving national coordination** when preparing the AER and FDI data calls constitutes a good way to solve the issue as vessels allocation to segments could be a difficult task especially for SSF. Indeed, this allocation should be done in the same way to answer the two data calls.

- **Issue** regarding the **vessel length ranges:**
  - *FDI specified that the vessel length ranges are defined from the first length specified (included) to shorter than the second length specified e.g., "VL1012 – length over all of 10m. to shorter than 12m." or "VL40XX – length over all of 40m. or longer". This is not actually specified in the AER e.g., "VL1012 – vessels between 10 meters and 12 meters in length" and even more in contradiction with the AER specification for "VL40XX – Vessel greater than 40 meters in length". This should be specified and harmonized.*

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[4] See Data requirements for the 2023 fleet economic data call – Economic variables, available at: https://datacollection.jrc.ec.europa.eu/documents/d/dcf/eumap_data_requirements_2023_nosocial-1

**Comment by EWG 23-10:** EWG 23-10 assesses that AER follows fleet segmentation definition provided in Table 8 of the regulation 2021/1167 which is in line with the vessel length ranges definition specified in FDI data call. Therefore, it seems that there is **no issue** to raise here. **Nevertheless, for the "VL40XX" the AER specification should be correct into *length over all of 40m. or longer*" to avoid any discrepancies.**

- **Issue** regarding the **gear** information**:**
  o *FDI requested fishing activity data disaggregated by gear, target assemblage, mesh size ranges and métier DCF level6.*
  o *AER do not request fishing activity data disaggregated by gear/métier. Gear information has been used in AER to further disaggregate and/or identify specific parts of a DCF / EU-MAP fleet segment. FAD (Fish aggregation device) is included in this list to identify vessels / fleet segments using this technique.*
  o *This use of same notion for different purposes or concepts is very confusing. All the more so that gear codes to be used in AER to distinguish a group of vessels that predominately or exclusively use a specific gear type are very similar with the ones used in FDI to disaggregate fishing activity data by gear. E.g., On one side, AER data with GEAR information = "GTR" specified = data of vessels belonging to the DCF Fleet segment "DFN – Drift and/or fixed netters" using predominately "GTR – Trammel nets" gear. On other side, FDI data with GEAR information = "GTR" = fishing activity data issued by vessels practicing "GTR – trammel nets" fishing gear (i.e., could be from vessels allocated to the DCF Fleet segment "DFN – Drift and/or fixed netters" but also from vessels allocated in another DCF Fleet segment). The two concepts are totally different but used the same coding which is very confusing.*

**Comment by EWG 23-10:** EWG 23-10 assess that this issue should be more clearly specified to avoid any misunderstanding. The first step is the rule applied to allocate vessels to fishing techniques which are similar for AER and FDI based on a "dominant" use. Issue raised for "gear information" used by AER which applied same rule of "dominance" to eventual further disaggregate the initial fishing technique allocated into a predominance gear used e.g. to precise DFN fleet segment between vessels using predominantly GTR or GNS. This notion is completely different from the one used in FDI to disaggregate fishing activity data by gear. At least, it seems that this new non-mandatory information should be named differently in AER e.g. "Detailed Fishing technique". **Then, the use and needs for AER of this new information should be assessed by AER before eventual add in FDI data call if needed. For example, since today, there is no entries of "FAD" gear information in the AER data call. Same issue raised for the two new non-mandatory fields asked in AER data call not available in FDI data call: "Fishery and Activity level".**

## Conclusion

The conclusion is that in general, the two data calls AER and FDI contain the same fishing activity information, but in some cases, the codes and description of the codes could differ slightly. Major issues are related to 1) the gear codes that are used for two different concepts in the two data calls and 2) the two specific fields « fishery » and « activity level » which are asked in AER but not available in FDI.

EWG 23-10 support the RCG Econ' proposal to have a specific workshop to follow-up the work engaged and focus on these mismatches in order to discuss in detail all these issues. This workshop should gather together economists, biologists and data scientists. The aim will be to define clear agreed definition for all variables including methodology to apply, to harmonize codifications and reference table between the two data calls and ensure that all the AER needs could be feed by fishing activity estimates available in the FDI data call. In particular, it should tackle with the issue related to fleet definition and fleet segmentation.

### 3.6 Provide recommendations on possible future use of the 'Shiny app' on overall trends in discard patterns using the FDI data

The Shiny App is a very powerful and useful visualization tool, capable of facilitating the decision-making process. Nevertheless, the initial evaluation by the STECF EWG has pinpointed certain

issues that may impact the quality of its results. The primary concern centers on the utilization of classic FDI data at the outset of the time series. Additionally, it's important to acknowledge that the limited time available during the EWG prevented a comprehensive listing of all potential shortcomings of the Shiny App and the provision of feedback for enhancements. To guarantee the trustworthiness of the discard rate estimates, a more thorough examination of the methodology and data quality is necessary.

## Issues identified

*Data time series*

The time series used for the analysis comes from two different data sources and formats (old FDI: 2011 to 2014 and new FDI: 2015 to 2021). Even though, at the time of the first ad hoc contract, the harmonization was necessary to have a complete time series before and after the landing obligation, the new FDI data format now starts in 2013. The transition to the new FDI format is very important as many assumptions needed to be made to align the two datasets, which influenced the quality of the discard rate estimates and introduced uncertainty that can be avoided to some extent. Furthermore, the quality of the data set has improved following several data submissions, including the 2023 data call that requested the reporting of the new metier codes and the exclusive economic zone.

*Reliability of discard estimates*

Approved scientific discards estimates are provided at the aggregation level of the domain (*following specific strata definition in space, time and metier in respect with the sampling design*) and are available in tables C, D and K. Discard estimates used in the Shiny app are provided by the Member States in Table A, and they are a partition of the estimates reported in Tables C, D and K, into the finest level. These estimates are also of major importance to answer the ToRs of the EWG. Nevertheless, the conclusion of the STECF Expert Working Group 17-12 should be re-emphasized here *considering the limited meaningfulness behind any partitioned discard estimates which* may *not be statistically sound and biased because, for example, there is the need to assume equal discard rates among the disaggregated levels contained within the retained strata*. Consequently, any use of the partitioned discard estimates available in Table A should be considered according to the domain on which they have been initially calculated. If the aggregation level used does not partition too much from the original domain, then no issue will have to be raised regarding the discard rates presented. Otherwise, they should be considered with carefully attention. A coverage rate of the domains available behind the aggregated discards rates calculated, should be evaluated to assess their quality and validity.

## Annual update by the STECF EWG (Workflow)

It is difficult to determine if the STECF EWG can take over the task to annually update the data that are used in the Shiny app, due to time limitations and insufficient understanding of the data processing and methodology.

It is therefore suggested to hold a 3-day online workshop to review the methodology applied, evaluate the possibility of an annual update by the STECF EWG and provide suggestions on data preparation, aggregation and visualisation for a potential ad hoc contract. Furthermore, it is necessary to assess if it is feasible to integrate the annual update in the current STECF EWG ToRs without disrupting the current workflow.

**Figure 3.6.1.1:** EWG proposed workflow to operationalize app and provide a decision support tool.
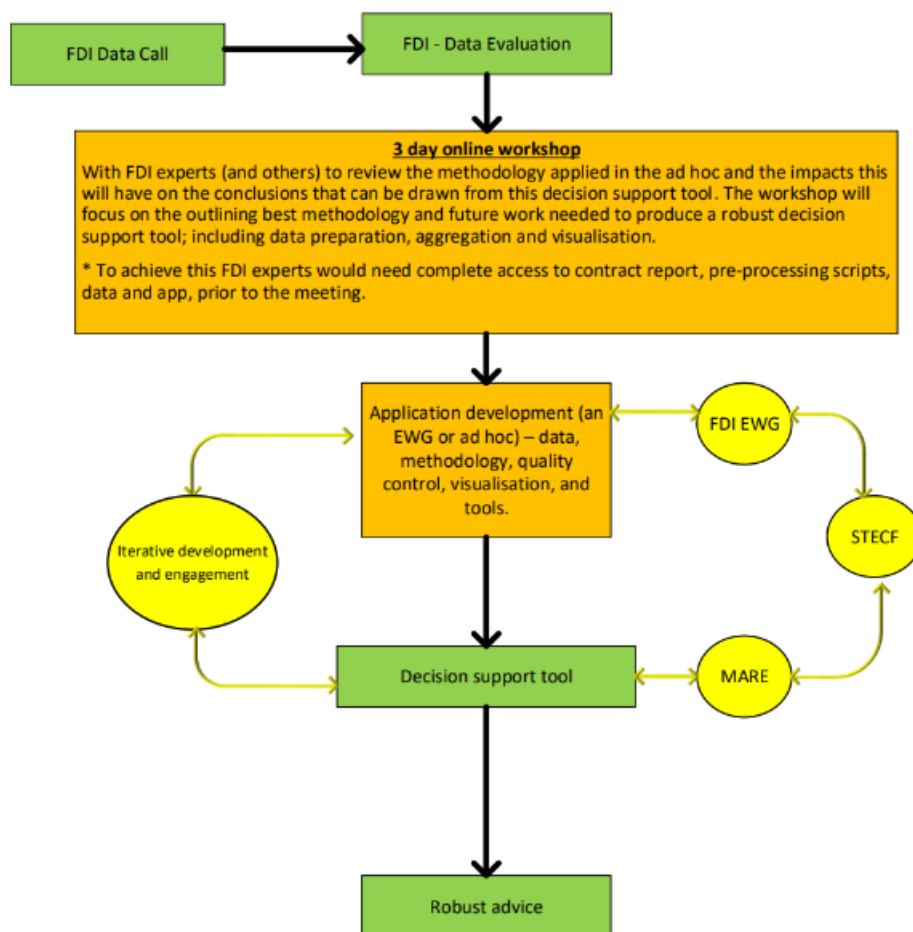


## Public dissemination

The Shiny App is currently developed for private DGMARE use as it includes confidential data provided by MS. A potential dissemination of the output will require the development of a different Shiny App (or any other tool) that ensures the Members' confidentiality rules are followed. This will also introduce a new level of complexity, as the public disseminated datasets omit the confidential records if the aggregation level is not sufficient to ensure confidentiality.

### 4 SUGGESTIONS FOR CHANGES IN FUTURE DATA CALLS

Based on the considerations reported in paragraph 3.4.2, the EWG recommended the following changes for future data calls.

Regarding the feasibility to further extend the time series, it was concluded that it would not be feasible to request the data further back than 2013, as for some Member States data are not available on the level of aggregation required by the FDI data call. The EWG agreed that MS could be encouraged to submit the data before 2013 on a voluntary basis.

The EWG 23-10 recommended also removing the reporting of Biologically Sensitive Area (BSA sub-region) in the FDI data call.

It was also suggested that for the tables H and I containing the spatial information, it should not be possible to submit the sub-region variable with the code 'NK'.

It was also suggested that the data call text can be improved with more direct references to the EU MAP legislation text.

The Functional Units are under revision in ICES and should be checked before the next FDI data call to update Appendix 9.

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[1] - 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: http://stecf.jrc.ec.europa.eu/adm-declarations

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## ANNEX 1. MEMBER STATES SECTIONS ON METHODOLOGY, DATA AVAILABILITY, COVERAGE, PROBLEMS ENCOUNTERED AND OTHER COMMENTS

Countries are listed in the official protocol order: alphabetical order in Member States' own languages.

### 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.
EEZ_INDICATOR was determined based on the midpoint of the rectangle information from the logbooks (shapefile used: https://www.marineregions.org).

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.

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 A1.1.1 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.
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.

The quality indicators related to the quality of the age/length allocation process (NO_AGE_MEASUREMENTS, AGE_MEASUREMENTS_PROP, NO_LENGTH_MEASUREMENTS) and related to the overall coverage and sample size of the estimate in relation the domain (TOTAL_TRIPS, TOTAL_SAMPLED_TRIPS) were provided in tables C-F. The indicators related to the quality of the estimated discard tonnage (DISCARD_CV, DISCARD_CI_UPPER and DISCARD_CI_LOWER) were not provided as its difficult to estimate without better defined guidelines.

**Table A1.1.1**: Thresholds for providing biological data

| Data | Variable | Sampled | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | and | 65 | | | | | | |
| | discard quantity | 2 | | | and | >=70 kg landings sampled weight or total weight | | | | |
| | | 2 | | | | | and | >= 20 kg discards sampled weight or total weight | | |
| | | 2 | and | 65 | | | | | | |
| 2018-2019 | discards length distribution | 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 |
| | | 2 | and | 65 | | | | | | |
| | landings length distribution | 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 |
| | | 2 | and | 65 | | | | | | |
| | discard quantity | 2 | | | and | >=70 kg landings sampled weight or total weight | | | | |
| | | 2 | | | | | and | >= 20 kg discards sampled weight or total weight | | |
| | | 2 | and | 65 | and | >=30 discard length measurements | | | | |
| 2020-2022 | discards length distribution | 2 | | | and | >=70 kg landings sampled weight | and | >=30 length measurements | | |
| | | 2 | | | and | >= 20 kg discards sampled weight | and | discard ratio < 0.2 | | |
| | | 2 | | | and | >= 20 kg discards sampled weight | | | and | >= 30 length measurements |
| | | 2 | and | 65 | | | | | | |
| | landings length distribution | 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. Before 2021, the actual landed weight and value are split according to the logbook information on hours fished in the respective rectangles. From 2021 onwards and the switch to a new database system, the actual landed weight was split according to the logbook information on catches. The value was calculated by multiplying the resulting landings with the average sale price.

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. 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 were 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 fishing days recorded for a certain fishing area.

Table K:
The quality indicators related to the overall coverage and sample size of the estimate in relation the domain (TOTAL_TRIPS, TOTAL_SAMPLED_TRIPS) were provided. The indicators related to the quality of the estimated discard tonnage (DISCARD_CV, DISCARD_CI_UPPER and DISCARD_CI_LOWER) were not provided as its difficult to estimate without better defined guidelines.

**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 2013-2022 derived from official logbook databases for all vessels ≥10 meters. The data covers all areas in which the Belgian fleets are active and all species that are landed. Information on misreporting has been taken into account for sol.27.7d and sol.27.7h-k in certain years. 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 2013-2022 for all relevant areas where the Belgian fleets are operational.

The Belgian government responsible for aggregating data from the Belgian commercial fishing fleet (logbook, sales and effort data) moved to a new database system from 2021 onwards. This new database system is operational, but currently lacks thorough data quality checks. Considering there is no overlap with the old database system we are unable to quantify the extend of this change regarding the data quality. Missing information was complemented as much as possible: an average price was calculated to allocate to missing prices; ship owners were contacted to fix mistakes in metier allocation; missing rectangle information was complemented based on VMS data (for the effort) and based on the highest fishing hours per rectangle from the same trip (for the landings) (we take into account the catch of the same species by rectangle if possible). Over the following time we aim to further improve the quality of the data together with our colleagues from the Belgian government.

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. Some differences can be explained by the misreporting of sole in area 7d, 7h and 7j that were taken into account in the FDI data set but not in the EUROSTAT data set. Furthermore for the period 2019-2021, no below minimum reference size landings or industrial bycatch was included in the FDI data set. The 2022 EUROSTAT data were not yet published.

Number of vessels
The number of vessels in table J of the FDI data set is comparable with number of vessels reported in the EUROSTAT data set. For the FDI 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.

**Problems encountered**
The Belgian at sea sampling programme was not hampered by the COVID-19 pandemic in 2020.

**Other comments if relevant**
No other comments.

**A1.2 BULGARIA**

*Methodology*

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

The sampling strategy in Bulgaria is census and data is available for each vessel, so no estimation procedures were used. According to the Bulgarian legislation (Fisheries and aquaculture act), all fishermen in Bulgaria are obliged to use fishing logbook and there is no difference between small scale fleet and the large scale fleet.

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 board of the vessel. If the skipper does not answer his phone, it is not marked as a refusal.

**Data availability**

All transversal variables, which are used for the preparation of capacity, landings and effort tables are 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, which are fishing under Bulgarian flag in the Black Sea during the reference period. There are no gaps in the data collection or data submission. The list of species, which are reported in all tables concerning the landings represents all species which are caught by the Bulgarian fleet.

*General comments*

Bulgaria is using a census sampling strategy and 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.

*Comparison with Eurostat data*

The number of vessels from the FDI data call is slightly higher than the Eurostat data because the data for Eurostat is from 31$^{st}$ of December, while the data for FDI is for the vessels from the whole year (for example if a vessel was active during the year it is included in the number of vessels, even if it is out of the fishing register at 31$^{st}$ of December due to a permanent cessation or other change in the status).

*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 concerning the preparation of the data call was related to the data processing. 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. The data sets used for the preparation of 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 changes in the databases took more time than expected.

*Problems related to data submission*

There were no problems related to data submission and the main reason for this was the possibility to use the data validation tool, which facilitated the reporting process.

***Other comments if relevant***

COVID-19 did not affect the collection or reporting of data in Bulgaria.

The data provided for the discards is from the official data sources and from the scientific observations onboard of fishing vessels.

The de-minimis is not applicable for Bulgaria. The only survivability exemption is defined in the Commission Delegated Regulation (EU) 2022/2287 of 12 August 2022 amending Delegated Regulation (EU) 2021/2065 establishing a discard plan for turbot fisheries in the Black Sea as regards the extension of the high survivability exemption to the landing obligation for turbot in the Black Sea.

**A1.3 DENMARK**

**Methodology**

Denmark has a database for transversal data, where sales notes data are merged with logbook data by trip and species, and information from the fleet register and métier codes are added. Landings weight and value of landings are based on sales notes, while information on gear and ICES rectangle are from logbooks. For the FDI data call in 2023, the full time series from 2013 to 2022 were uploaded for tables A, G, H, I and J with the new agreed métier codes. 2021 and 2022 data were uploaded for the tables containing biological data C, D, E, F and K. For industrial fisheries targeting e.g. sprat, sandeel and Norway pout, until April 2020, the main species have been reported in the logbooks but there might also be a small amount of other species in the landings. Samples have been taken to find the species composition of the landing by area, ICES rectangle, month and target species. This was done by the Danish Fisheries Agency, and the species composition was applied to official landings and reported in the FDI data call. After April 2020, the species composition from industrial landings has to be declared in sales notes.

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. Similarly, a procedure has been developed to estimate the ICES rectangle for the vessels not reporting logbooks, where the main ICES rectangle is found by harbour, gear type and vessel length group. If there are no similar fisheries where the rectangle is reported from a harbour, the ICES rectangle closest to the harbour is used.

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.

For the 2023 data call, it was requested that from 2021 and onwards, the vessel length classes VL0008 and VL0812 should be used in the fleet segmentation for the Baltic Sea. Denmark has not reported using these vessel length categories, but used the categories VL0010 and VL1012 to be consistent with what was reported for the AER 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. In table A, the unwanted catches are partitioned by total landings of all species within the same year, quarter, vessel length group, métier, discards domain and sub region. If there are no samples of unwanted catches within that aggregation, the code "NK" is inserted. The quality indicators CV, CI upper and lower has not been provided, work is ongoing in relation to the RDBES.

There can be lines with discards but no landings, this is often species that have a very low commercial value. 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 zero landings value if they are not sold.

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.

In the FDI data call 2023, it was requested in the EEZ indicator field to specify if the fishery is within UK EEZ for the full time series. A hierarchical approach is used to assign the EEZ.

1. From ICES rectangle where completely inside an EEZ. This is for correspondence with the ICES rectangle reported.
2. Based on VMS data, after applying a speed filter.
3. Based on haul positions reported in logbooks
4. Economic zone reported in sales notes.

**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:

- Bornholm, 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)
- Beam trawler, North Sea brown shrimp (TBB: IV)

Effort allocation (observer trips) between the vessel lists is 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 chance 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 15 of March 2020 Denmark closed down in response to the covid pandemic. As a consequence the observer at sea program was closed down from mid-March to late June and again from late November and the rest of the year. In 2021, the observer program was closed down January to March 2021 and again from November to December. In some of the periods in 2020 and 2021 where the observer programme was in function, the random selection of vessels was put on a break and each observer got a restricted vessel list with a number of vessels where we normally had a positive fisherman response, and refusal rates are therefore not obtainable in 2020 and 2021.For 2022, the refusal rates are reported again.

## 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 needs to be finalized before the ICES data call and stock assessments, during the spring. The fishing technique definitions are received by vessel from Statistics Denmark who defines them for the AER data call.

## Coverage

All landings and effort data from the Danish fleet during the period 2013-2022 have been submitted.

## Comparison with Eurostat data

The number of vessels reported in FDI is larger than what is reported in the Eurostat data. In Eurostat the data refer to the situation of the Danish fleet on 31 December of the reference year. In FDI data, all the vessels that have been present during a year (active or inactive) are counted.

## Data checks

The data have been checked using the FDI data checking tools provided by JRC. In some cases, there are minor inconsistencies in the numbers between tables, but this is normally due to rounding issues.

In some cases, the weight of landings by species is larger than zero, but the value of landings equals zero. Zero values are often connected to bycatches, and often in fishery for industrial use. Here it cannot be used in the main fishmeal production (e.g. 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. It can lower the price if the entire landing if the bycatch rate is too high. Therefore, the buyer does the vessel a favour by taking the by-catch at a price=0.  0-values also occur in connection to foreign buyers where the sales-note lack a price. The Danish authorities try to obtain it from the buyer, but the rate of success is fluctuating. The cases with zero value of landings, but a landed weight can also be caused by BMS landings (landings below minimum reference size) that is not sold.

The total weight of all landings changes by year, and is related to both changes in landings from the industrial fishery, and to a general decline of the fisheries in the Baltic Sea since 2020. These changes correspond with the total weight of landings reported at the Danish Fisheries Agency website. In 2016 and 2021 the sandeel quota was low, which is reflected in the total weight of landings.

## Confidentiality

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 (all values are confidential), otherwise the confidential field is marked with N.

## Problems encountered

*Covid-impacts on the biological sampling*

The scientific sampling of landings and discards of the commercial fishery was canceled in the time period March 13 to 1.6 2020. Hereafter, DTU Aqua resumed the observer activity. When the observer activity was resumed it was not with the random selection method (as was the former setup) but with a list where every observer had a separate list of vessels to contact to avoid too many different contacts. Also the control activity was canceled in a time period from the March 13 to April 28. Further, the Fishery control agency has been used for other work in connection to Covid and has therefore been at a lower level than planned. Again in late November Denmark closed down and the scientific observer programs at sea was canceled the rest of the year.

In 2021 due to the covid-19 situation the Danish at sea observer program and partly the harbour sampling program was closed down in longer periods. The first close down was from January to March 2021 and the second from November to December. This had an effect on the quality as well as on the amounts of samples.

**Other comments if relevant**

No other comments.


**A1.4 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. The corresponding procedure follows the concepts of the Report of the 2nd Workshop on Transversal Variables. Nicosia, Cyprus. Castro Ribeiro, C. et al., 22-26 February 2016. Germany provides information for all vessels with all necessary information reported in logbooks. Vessels <10m in the North Sea and vessels < 8m in the Baltic do not have an obligation to fill in logbooks. However, for these vessels so called "Monatsmeldungen" (monthly announcements) were used to provide information on catch and effort where possible.

Discards were estimated based on observer data and not from logbook information. 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 then subtracted. 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, positive discard values do not always mean that discards occurred 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. Cases where there are discards only in the sampling and zero landings in logbooks, only discards reported in logbooks were taken into account. Germany is working on a methodology that best suits these specific cases also utilizing non-DCF data sources from ongoing research projects or fishery-independent surveys to derive useful and realistic discard estimates. Any discard estimate with 100% discard rate is extremely uncertain and great care is needed to avoid unrealistic and misleading numbers.

Germany started to highlight information on the value of landings as confidential due to only very few companies left in most metiers. Also, all information from areas where only very few German vessels fish (i.e. CECAF, South pacific, NAFO) were marked as confidential. There are further issues related to the data on effort and landings where certain lines hold information for less than 3 vessels. However, the current level of aggregation in the dissemination tool (i.e. not by country for spatial data) seems to be appropriate. Germany reserves the right to adapt the cases marked as confidential in case the aggregation levels change in the dissemination tool.

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. More precisely,

if $L_{s,m}(i)$ is a landing weight of species $s$ in the line $i$ from the domain $m$ in the table A, then the corresponding discard weight, $D_{s,m}(i)$, is determined as $D_{s,m}(i) = L_{s,m}(i) \cdot \frac{r}{1-r}$, where a partition ratio $r = \frac{D_{s,m}}{D_{s,m}+L_{s,m}}$, and $D_{s,m} = \sum_{i \in m} D_{s,m}(i)$, $L_{s,m} = \sum_{i \in m} L_{s,m}(i)$. For the case of zero landing $L_{s,m}(i) = 0$, the landing of all species in the domain.

Because of this, it is necessary to have in mind that discard rates, age and length distributions are assumed to be the same inside a sampling domain although differences may exist 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 for the FDI analyses. E.g., when a sampled length frequency was only available for quarter three, maybe it needs to be assumed that it is representative for the whole year. This can introduce 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.

For the years from 2017, the UK economic zone is explicitly indicated in logbooks. For the previous years, we distribute catch proportionally for rectangles bordering UK and non-UK waters (a table containing the spatial factors for proportion per rectangle is available). The same concerns rectangles corresponding to landing locations for vessels without logbook information.

**Table B**

In Germany the sampling program is in between an ad-hoc and a statistically sound sampling program. Vessels or in many cases companies are contacted randomly within a given sampling frame (as example, see table A1.4.1 for 2022 uploaded this year).

**Table A1.4.1**: Sampling frame

| Year | Sampling frame |
|------|----------------|
| 2022 | OTB_DEF (27.1, 27.2) |
| 2022 | OTB_DEF (27.4.a, 27.4.b, 27.4.c) |
| 2022 | OTB_DEF (27.14.b, 21.1.c) |
| 2022 | TBB_DEF (27.4.b, 27.4.c) |
| 2022 | TBB_CRU (27.4.b) |
| 2022 | OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a) |
| 2022 | Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24) |
| 2022 | Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24) |
| 2022 | Western Baltic herring active (27.3.c.22, 27.3.d.24) |
| 2022 | Western Baltic herring passive (27.3.c.22, 27.3.d.24) |
| 2022 | Baltic sprat |

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). The column "industry declined" includes cases where industry declined because of valid and invalid reasons.

## Data availability

All requested data were finalized and available by the data call deadline. They were checked by the JRC routines as well. Where necessary and possible inconsistencies were corrected before the operational deadline. The current data can be regarded as final given current knowledge.

## Coverage

For the requested years 2013- 2022 all data were provided for all tables before the deadline. For some metiers (e.g., trips with mussels as target species) or vessels without logbooks catches were reported but no effort. In a few cases with minor importance slightly different allowed codes were used as different people work on different tables (i.e. landing vs. effort and spatial landings and spatial effort). On a courser aggregation level, however, effort and landings match.

## Comparison with Eurostat data.

Minor difference (<<10% for EU waters) occurred between FDI data and Eurostat for 2013, 2014, 2016, 2019, 2020. Only very minor differences (<<1% for EU waters) occurred between FDI data and Eurostat for 2015. More differences in landings weight can be seen for 2017, 20018 and 2021. As the German administration introduced its new database during 2017-2018, logbooks were corrected and updated during the next years. Therefore, the FDI data are likely more representative than the Eurostat data. For the year 2022 no difference was indicated.

## 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 codes the corresponding field are defined according to the rules applied in the metier definition script developed by RCG ISSG on metier and transversal variables. Note that we didn't implement the script directly this time. The reason is that after check of output produced by the script, we concluded that the script in the current state can be sensitive to input data and therefore produce sometimes doubtful metiers (e.g., gear type and/or mesh size range don't match to real ones). We intend to modify the script slightly for German cases, to avoid any inaccurate metier assigning in future. Instead, an adjusted to the new metier codes SQL-script was implemented for the FDI data call. This script is usually used by the colleague responsible for the AER data call.

The column "industry declined" currently includes cases where industry declined because of valid and invalid reasons. The column could be separated into industry declined and other reasons to make table B more meaningful.

For the FDI data call 2023, we used a date of the catch from logbook to determine a quarter, and for vessels without logbook information a landing date. Still, as we have already mentioned, a clear guidance on what date to use for FDI would be beneficial to ensure full consistency. Some discrepancies might be caused by uncertainties in original data, e.g. if logbook contains some entries with incorrect allocation of ICES rectangles.

The largest discrepancies between tables A and G (landings but no effort) are created by the lines containing gear type DRB/target assemblage MOL (that is mussels aquaculture and makes no sense for effort) and BSA regions (that will not be extra included in the effort table G). Zero value Totvalland=0 in 2020-2022 was identified mostly by shagreen ray (RJF) and Aesop shrimp (AES).

The spatial check revealed wrong RECTANGLE_TYPE for the NAFO regions for 2013 (05*1 and 0.5*0.5 instead of 1*1).

**Impact of Covid on DCF sampling programme in 2020/2021**

Germany was able to sample its most important fisheries also during the Covid Pandemic in 2020 and 2021 although sometimes at a lower frequency. Sampling of less important fisheries (e.g., TR2 fisheries) had to be skipped completely. Some trips were also sampled via self- sampling (e.g., some BT2 trips). Before the Pandemic all data were generated by scientific observers on board.

**A1.5 ESTONIA**

**Methodology**

*Data collected and derogations*

Official Information on landings/catches and effort by species, areas, gear types and mesh size were 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 EU-MAP 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 (mostly in NAFO and NEAFC areas).

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 nets and trap nets) and of other species, incl. freshwater fish taken with trap-nets 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) or damaged by seals fish from gillnet and trap net/pound net fishery. No discarding takes place in mixed herring and sprat fishery with trawls. The official discard information from logbooks is 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. In the Baltic Sea, biological harbour sampling takes place on monthly and sub-division basis in 10 (max 17) landing points. All fleet (20-25 active vessels) are sampled. No minimum threshold is applied in sampling of coastal small - scale fishery.

Biological information from collected samples presented in the tables E and F is calculated according to catch figures expressed by vessel length class, metier and domain defined in table A.

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

The quality indicators of discard estimates suggested by the STECF EWG 23-05, CV, CI upper and CI lower have not been applied in the present data set. The Member State plans to provide this information during the next FDI data call.

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

**Data availability**

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

**Coverage and General comments**

Provided data covers all activities of the Estonian commercial fishing fleet operating in the Baltic Sea (ICES Sub-divisions 28.1, 28.2, 29 and 32, and in the Northern Atlantic. Information on recreational fishery in Baltic Sea was not provided.

No refusals in obtaining biological samples and other relevant information from the selected fishing vessels were reported in 2013-2022.

*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). The same applies for the information on landings from the North-western Atlantic (vessels over 40 m).

Discrepancies between Spatial effort vs Effort- may be caused by the fact that in some cases the vessel is fishing in several statistical rectangles during the same trip, causing thus differences in effort values between the tables of different level of resolution: in case of Spatial effort the number of fishing days is calculated by statistical rectangles visited during the fishing trip, while in case of nominal effort the fishing days are summed by Sub-region. This cause higher figures in case of Spatial effort.

Discrepancies between Spatial Landings vs. Landings: The difference is mostly less than 1 kg and stem from rounding.

Discrepancies between Spatial Landings vs. Spatial effort: This problem concerns the coastal small-scale fishery of 2013-2018 when the respective info on effort was not available.

Differences in Length and Weight units in tables D, F and F: are probably caused by the misinterpretation of the guidelines where both cm/mm and kg/g are accepted as units. For different species different length and weight units are often applied.

In order to present the **spatial distribution of landings and effort data** the coordinates of the centre of the rectangle registered in the logbooks were applied (RECTANGLE_TYPE: '05*1').

On overall, most of the information requested in the FDI Data Call was available and presented with exception of the effort information for the small (under 10m) boats in coastal fisheries of 2013-2018.

*Comparison with Eurostat data.*

Landings data provided for the FDI database for 2013-2022 were very close to the information reported to Eurostat (differences were less than 1%).

The observed minor differences in vessel numbers may be explained with the counting of inactive vessels in Eurostat dataset.

*Data confidentiality.*

All information provided by the Member State as a response to 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 like gillnets and fyke nets in small scale coastal fisheries. In case of the small boats only information of Sub-region level is available. The scarcity of respective information prevents presenting the reliable effort estimates by the statistical rectangles.

Additionally, Member State encounters difficulties in obtaining of the value estimates from the long - distant fleet, that lands outside of Estonia.

*COVID issues in 2020-2022*

Estonia did not experience any serious issues in performing fish sampling at sea or harbours according to NWP or in access to the requested fisheries economical information due to the COVID pandemic in 2020-2022.

## Other comments if relevant

No other comments.

**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 2021 Ireland provided refusal rates for two separate sampling programs; demersal (DEM) and pelagic (PEL). These refusal rates were calculated using the guidelines 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 (statistically 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.bk). 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 t rips they have previously made. No clustering or sub-sampling is used. Refusal rates for the pelagic fleet could only be calculated for the pelagic fleet as this was the first year of a 4s scheme.

**Coverage**

**General comments:**

Data was provided for all years requested (2013-2022) for all tables. 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 complete 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. These are correct. RCG metier labelling script developed by an RCG subgroup (https://github.com/ices-eg/RCGs/tree/master/Metiers)

- **Eurostat data comparison:** Due to national confidentiality laws, landings data are no longer available through Eurostat for 2018-2021 and are likely to not be made available going forward. This historical data (<2018) shows 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.

- **Discard estimates:** Discard estimates in Table A are currently higher in table A then in the biological tables C and D, as the methodology currently used "tops up" the estimates in table A to bring them in line with ICES estimates. It is planned to make improvements to this methodology over the coming year.

- **Effort data:** There are landings reported in Table A which do not have a corresponding effort in TABLE G. The majority of these missing effort records are related to the small scale fleet (<12 meters) for which there is currently no method to estimate from sales notes data, which contain no gear or fishing time information. Table A, I and H contain mesh size Gear mesh size codes were incorrectly used, with passive gear range codes being applied to active gears.

- **Economic value data:** In some cases, there is no value information for non-TAC species, or landed unwanted catch. This is considered normal practice and cannot be improved.
-
- **Biological data:** The 2022 data was submitted using two data sources. The first source used raised data submitted to ICES, which was collected in a new database, and formatted for FDI purposes before being submitted.  This new process provided a tool to increase the number of age, length and discard estimates submitted to FDI and ensured alignment with sampling plans and estimated processes. This database has enabled Ireland to increase the number of assessed species and samples included in our response to the FDI data call. For stocks which are not assessed, at sea samples, where possible, were raised to provide age, length and discard estimates. These estimates have less certainty around them and have in some case resulted in higher SOP's

- F**ishing Technique:** During the working group it was found that Ireland was not accounting for "Inactive" vessels within the FISHING_TECH definition. Therefore, there were a larger number of vessels reported in Table J then in the Annual economic report. There is currently no method available to provide this information as the Institute which provides data for FDI only have access to active vessels.

- **EEZ indicator:** Where VMS data was available it was used to determine the proportion of VMS effort in EU27 and UK waters – this was then used to allocate landings to the relevant EEZ.  VMS effort is based on the time interval between pings and vessel speed thresholds. Where VMS data was not available landings were allocated to EEZ based on fixed ratios for each statistical rectangle. Consistent VMS data is only available from 2012 onwards. If EEZ information is required for earlier years then it could be explored

to split the data by EEZ using the fixed ratios for shared ICES rectangles. But the validity of the methodology and quality of the results would need to be tested.

- **Quality indicators:** Quality indicators reported in the biological tables (CV and CI) were estimated where possible this year. These indicators are not considered robust at this time as they are estimated in a way that may not be scientifically meaningful. Ireland will continue to work with the RDBES governance group in developing methods to estimate indicators in a robust manner.

## Problems encountered

Challenges were encountered:

- **Age and length data:** The legal deadline was missed by Ireland for the biological tables (C, D, E, F) due to database changes. In 2023 the Marine Institue implemented a new database to better respond to the FDI data call, and the quality control of this database was not complete in time for the legal deadline. The 2022 data was submitted using was submitted using this new database, which consisted of raised data submitted to ICES. This new process provided a tool to increase the number of age, length and discard estimates submitted to FDI, and ensured alignment with sampling plans and estimated processes. This database has enabled Ireland to increase the number of assessed species and samples included in our response to the FDI data call. In 2024 this data base will be used to resubmit biological data for the whole time series, therefore increasing sampling numbers and coverage for the whole dataset.
- **Historical sampling issues:** A number of challenges were met in data collection in relation to Covid19, which required a number of adaptations to the sampling plan. The Marine Institute (MI) at sea sampling aboard commercial vessels was suspended in the interest of the health and safety of both samplers and the fishing crews. The temporary suspension has remained since and therefore the MI have not had samplers at sea on commercial trips >18hours since the pandemic started. The MI were able to reinstate at sea sampling on inshore vessels where overnight accommodation is not a requirement and sampling occurs outside on deck, by following Covid health and safety advice during the period when the lockdown restrictions were eased in the summer, resulting in a number trips.

To mitigate for the loss of at sea sampler coverage the Marine Institute (MI) has worked with the industry and developed an At Sea Self Sampling Programme where the skippers/crews collect data and samples from a subset of the hauls, bring the material ashore where MI staff measure and work up under Covid guidelines. Each vessel is contacted individually by the Fisheries Liaison TL following 4s sampling guidelines selection in advance of a possible trip. On agreeing to participate the skipper is t rained via remote training and supplied with a sampling pack pre sailing. Participating skippers record data on haul start & stop positions, date and time, estimate the Bulk catch, record observations on bird, mammal, reptile interaction record by kg /species what catch is wanted and take one random box of Unwanted catch for measurement ashore by MI staff. Despite the adaptation of the sampling plan, discard estimation was possible is the majority of stocks.

## A1.7 GREECE

### Methodology

A National Centralized Database (NCD) has been established in Greece for storing the data collected in the framework of the Data Collection Framework (DCF). Declarative Vessel Monitoring System (VMS) and Electronic Reporting System (ERS) confidential data are provided by the Ministry of Shipping and Island Policy and the Ministry of Rural Development and Food respectively. The professional fishing fleet that is obligated to be equipped with a control positioning system and keep ERS data sets contributes to the data collection. VMS data are used to estimate spatial explicit

fishing effort for vessels with total length >=12 m (all trawlers and purse seiners are included), the boatseines (that operated according to Commission Implementing Regulation (EU) 2017/929) and the vessels having a specific fishing license (large pelagic fishing, small scale fishing vessels (SSF) operating in international waters). The spatial fishing effort is estimated by a predefine cell size 2x2 Km and is aggregated by GFCM statistical rectangle 0.5*0.5 degree resolution (based on the methodology proposed by Kavadas et al. 2014 and Maina et al., 2016). Spatially explicit landings estimations are also available for vessels >=12m and special fishing license vessels. These estimations are based on ERS data provided by the Ministry of Rural Development and Food and are aggregated by GFCM statistical rectangle. Both effort and landings for the small-scale fishing vessels with length <12 m (representing 96% of the Greek fishing fleet) are estimated through an Effort-Landings assessment survey based on a spatially and technically stratified random sampling scheme. The data are collected at the port on monthly basis from a representative number of vessels. The estimation of total landings and effort per month, fishing gear and GSA follow the methodologies described in Kavadas et al. (2021) and the fleet inactivity is taken into account. Specific R routines have been constructed to support the analysis, raising and estimation of effort from SSF vessels by major area (the country has been divided in 12 major areas according to the Greek DCF sampling scheme) and GSA. As far as the fleet capacity is concerned, the relevant information derives from the National Fleet Registry (NFR) and it is provided by the Ministry of Rural Development and Food. Finally, discards data are collected through the biological data sampling scheme (detailed description in Touloumis et al. 2021), and more specifically from the onboard sampling trips. Sales data are included in the database collected monthly by questionnaires in the port from SSF vessels. For the rest of the fishing fleet, sales data are stored in the NCB as they are reported in the ERS. All the data used, as well as the analyses and data transformations conducted for the preparation of the FDI templates, are scrutinised and tested for their quality by using dedicated R scripts. The length and age distributions were processed to support Med&BS, FDI and GFCM/DCRF 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 incorporated in Table A. Discards Ratio and Discards are estimated based on the at-sea sampling data. Landings below minimum conservation reference size are not reported sufficiently in the ERS. This information is collected from the at-sea observer's and the estimated discard ratio is used to support specific calculations requested by the official data calls, on the implementation of landing obligation and for scientific purposes.

### Data availability

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

### Coverage

After almost 5-year gap in the implementation of DCF (2009-2013), in the last quarter of 2013 the actions of the program started to be implemented. Effort by rectangle for trawlers, purse seiners and SSF vessels with LOA>=12m from VMS as well as limited information from SSF are provided. For 2014, the DCF was executed from April to December. Spatial landings are not available because the ERS had not been established. Effort by rectangle for trawlers, purse seiners and SSF vessels with LOA>=12m are available from VMS. Due to abnormal execution of DCF in 2015 (was executed the last quarter), only effort data related to the operation of trawlers, purse seiners and SSF vessels with LOA>=12 m can be used for analysis purposes. The ERS started operating the last quarter of the year. FDI data for the year 2016 is provided for the period March to December, except landings and effort information for trawlers, purse seiners and SSF with LOA>=12m are provided for all months. Due to abnormal execution of the DCF in 2017 (partial spatial and temporal coverage), landings, discards and value data are missing in Table A. Only spatial landings for trawlers, purse seiners and SSF with LOA>=12m are provided in Table H. Under this condition, no comparisons between FDI and AER can be supported. Related to years 2018-2022, complete data sets are provided. VMS, logbooks, sales notes, and fleet register data 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. For years 2016-2022 and for the case where effort not covered by landings, should be noted that the effort is estimated by 2x2Km cell size and then is aggregated to ERS (GFCM) rectangle. There are cases where the fishermen indicate wrong rectangle (usually a neighbour rectangle) resulting in these discrepancies. In general, such cases are not numerous and the estimated landing and effort values are very small. Spatial effort from SSF (VESSEL_LENGTH: VL0006 & VL0612) are estimated for years 2018-2022

according to methodology proposed by Kavadas et al. (2015) and Maina et al. (2023 under publication). Concerning differences in the number of vessels between FDI and AER should be noted that the number of vessels provided in the FDI (Table J) comes from the National Fleet Register. In AER, the inactive vessels are estimated and are deducted from the professional fishing fleet. This leads to some discrepancies between FDI and AER, while fleet data harmonization between the two data calls is foreseen.

*Confidentiality*

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

*General comments*

The Covid-19 pandemic did not have a serious impact on the coverage of Greek sampling at sea.

*Comparison with Eurostat data*

In term of the fishing fleet, no significant differences exist between EUROSTAT and FDI data call except 2021 where the number of fishing vessels in EUROSTAT data set is 16% higher. In terms of landings, no comparison can be performed for years 2013, 2015 and 2017, due to the partial implementation of the DCF. It will be noted that in the landings reported by EUROSTAT, shellfish quantities are included. In 2019, 2020 and 2021, the EUROSTAT landings data are 15%, 13% and 16% respectively higher than the FDI data.

### Problems encountered

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

### Other comments if relevant

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

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### A1.8 SPAIN

Spain provides data for all the fisheries of the Spanish vessels around the world:
- ICES area: Northeast Atlantic (FAO 27.6-27.9)
- Mediterranean Sea: FAO 37
- CECAF area: Atlantic Eastern Central (FAO 34)

- Tuna fisheries: Atlantic Ocean, Pacific Ocean and Indian Ocean
- Long distance fisheries:

    • Northwest Atlantic (FAO 21)

    • Eastern Arctic (FAO 27.1, 27.2)

    • Northeast Atlantic (27.5, 27.6, 27.12, 27.14)

    • Southwest Atlantic (ATSW-Malvinas), and areas management by next Regional Fisheries Management Organization: SEAFO, SPRFMO, SIOFA, CCAMLR. Spain provides fishing data (landing, effort, etc.) of the fisheries in these areas, but not biological data (métiers, discards, length and age distribution). As an exception, biological data are given for the trawl fleet targeting crustaceans (OTB_CRU_>=40_0_0) and demersal species (OTB_DEF_>=70_0_0) that operates in the FAO 47.1 area.

## Methodology

Spain uses mainly two data sources to collect the fisheries information required by STECF to respond the FDI Data Call:

- Information from Spanish Administration: fleet register, licenses, results of inspections, logbooks, sale notes and data of geographic positioning (Vessel Monitoring System (VMS).

- Scientific information collected on the basis of the National Programme for Data Collection, under the Data Collection Framework.

Biological data (discards, length and age distributions) are obtained from scientific information. Transversal data (landings, effort, capacity, economic value, etc) are obtained from official statements (sales notes, logbooks, VMS, etc).

## Métier definition

As landings and effort are requested at a métier level, Spain developed a procedure to categorize logbook and sale note records into métiers (level 6 which included gear type, target assemblage and mesh size and other selective devices). This procedure is split into different methodologies concerning the characteristics of each fishery:

- To the fishing data from ICES area, two successive concatenated methods are applied. In the first place, the metiers of direct assignment based on administrative criteria (census, license ...) and / or geographic. Next, the métiers that require the application of multivariate analysis on the capture profiles of their trips. For this, Clustering Large Application (CLARA) is used.

- In the case of Mediterranean Sea fisheries, rules and thresholds of allocations based on profile of capture are applied.

- In related to CECAF area, Tuna fisheries and long distance fisheries, the logbooks and sale note records are introduced into a métier taking into account: fleet, area, seasonality and target species. For long distance fisheries it is necessary to specify that the allocation is made for each haul, not trip. This is because, as they are, very long trips, they can change gear.

The data sources used for assigning métiers for large scale fisheries are logbook and sales notes and for small scale fisheries only sale notes are used. The metrics used for assigning target species assemblage group is weight.

## Discards

Discard information comes by default from scientific observers on board programme by métier. This programme provides discard ratios by stratum (combination of area, quarter, métier and species). Discard ratios (discards/landings) are multiplied by their corresponding landing weights of each row of Table A in order to obtain each row discard weight.

The raising variable in discard estimation is effort (number of trips). However, the partitioning of discards is calculated proportionally to the landings of the same species. The possibility of using effort as a partition variable continues to be explored, but it could not be applied this year.

This year, for the first time, discards with landings 0 were distributed, using the landings of all the species landed in the domain as a partition variable. This new approach was applied throughout the historical series (2013-2022).

In relation to the quality indicators of the discard estimates, only TOTAL_SAMPLES_TRIPS for all years and TOTAL_TRIPS for 2021-2022 have been covered. However, the quality of this data is not desired and needs to be reviewed. The CV has not been calculated because the best method for this is being studied. Previously, Spain calculated the CV according to what was established in Workshop on Discard Sampling Methodology and Raising. Danish Institute for Fisheries Research, Charlottenlund, Denmark. 2 – 4 September, 2003. However, due to the non-normal distribution of discards, and in accordance with the provisions of EWG 23-05, the possibility of using non-parametric techniques, such as bootstrap methodology, introduced by Efron, Tibshirani & Tibshirani (1994), is explored.

The species for which the estimate of discards in the ICES area is provided are those for which this estimate is sufficiently robust, which are also reported to Intercatch.

**Length and age distribution**

Landing length distribution and landing age data are obtained from biological sampling which are developed in:

- Fish auctions from all along the Spanish coast.

- Biological sampling of marine organisms from commercial activity which are carried out in different laboratories of the marine research centres.

- Scientific observers on board programme

Discard length distribution and samples to obtain the discard age distributions come from the scientific observer programme.

Length and age distribution are raised by weight to each stratum:

- length by area, métier, quarter and specie

- age by stock, quarter and specie

The number of individuals measured by each length/age class is multiplied by the weight of the catch (landings or discards) of each stratum and divided by the weight of the sample.

**Domain definition**

The link between Table A and Tables C, D and Tables E, F, is the domain discard and domain landing, respectively.

In previous years, Spain used the definition of domain following the example of the data call Annex. Firstly, the domains were allocated in Table A and later the biological data was adapted to these domains to complete Tables C, D and Tables E, F. Therefore, the domain landing and domain discard did not match with the sampling unit, and for this reason, some artefacts were produced like for example:

- wrong identification of duplicates in the data base,

- the split of one métier data into several groups,

- the aggregation of data of different métiers in the same group.

It caused problems in regard to coincidences of landing weights between Table A and Tables E and F, and the incorrect processing of the mean weight data.

To avoid these inconsistencies, in 2021 a review of the domain assignment was made. Firstly, the domains will be allocated in Tables C, D and E, F, adapting the domain definition to match stratum used to calculate the length distribution, taking into account the rules established in the data call annex (see appendix 8). The variables defining domain are: Year/quarter, area according to sampling unit and métier.

In the case of age distribution, since the stratum used to calculate them is relative to the stock and not to the métier and area, it is necessary to adapt the age data. If the stock includes several areas, and therefore several domains, the same age distribution will be used for each domain in this area.

The exposed domain definition was applied to the entire historical series (2013-2022) and will be applied from now on.

**Refusal rate**

Refusal rates of Table B come from the two at-sea sampling programmes developed in the Subareas ICES 8 and 9; one of them samples the non-Basque fleet, which is managed by the Instituto Español de Oceanografía (IEO), and the other samples the Basque fleet, which is managed by AZTI. Refusal rates collection has been implemented from 2016 in non-Basque fleet and 2015 in Basque fleet, therefore no data prior to these years, respectively, are available.

**At-sea sampling programmes (non-Basque fleet)**

The target population consists of fishing trips from trawlers and gill netters operating in the Atlantic Spanish fishing grounds, as well as the purse seiners of the Gulf of Cadiz. By operability, the sampling population has been stratified in 4 strata according to the official lists of licensed vessels:

- EO_P1_S_CN_GNS: set gillnets ("volanta" and "rasco") in Cantabrian-Northwest.
- IEO_P1_S_CN_TB: Bottom otter and pair trawl in Cantabrian-Northwest.
- IEO_P1_S_GC_OTB: Bottom otter trawl in Gulf of Cádiz.
- IEO_P1_S_GC_PS: Purse seine in Gulf of Cádiz

In relation to the procedure for selecting sampling units, the vessel represents the Primary Sampling Unit (PSU), which is randomly selected from official lists of boats with fishing license. The PSU selection is done by Simple Random Sampling With Replacement (SRSWR).

The entire target population is included in the sampling frame. The sampling of gillnets is focused on those targeting hake and white anglerfish. Meanwhile, all vessels of the purse seine and trawl métiers are susceptible to be sampled.

Considering the vessel-trip combination as PSU, the Secondary Sampling Unit (SSU) is the fishing operation (haul). All of them are sampled in the métiers of the national fishing ground with daily trips.

All catch categories available on board, as well as the incidental catches of sensitive species are considered in the sampling scheme.

The call protocol for the vessel-trip selection of the SRSWR at-sea sampling scheme includes the recording of responses, which have been classified into the following 6 categories:

1. Affirmative: sampled trip.

2. Hard refusal: skipper declines collaboration.

3. Soft refusal: temporary unavailability of the vessel/trip (repair, temporary lack of space, seasonally dedicated to other fishing activity...).

4. Observer refusal (security reasons, etc.).

5. No answer: unable to contact.

6. No contact details.

More information about the ESP_IEO_P1_AtSea_documentation
http://www.ieo.es/documents/10640/7680600/P1-ICES-Sampling+Documents.rar/bbba5636-b922-4fd3-ae94-64890eecacd0

**At-sea sampling programmes (Basque fleet)**

The target population of this programme is trawler based in the Basque Country and it is divided in three strata:

- Bottom Otter Trawlers (OTB)
- Pair Bottom Trawlers in area 8abd (PTB_8abd)
- Pair Bottom Trawlers in area 8c (PTB_8c)

In relation to the procedure for selecting sampling units, the vessel*week represents the Primary Sampling Unit (PSU), which is selected using a matrix made of vessels and weeks. By quarter, each PSU (vessel*week) is coded with a number, and the PSU to be sampled are selected randomly from the list, in accordance with the planned sampling effort. If a vessel refuses to be sampled, the next vessel (same week) is selected. Refusals are recorded in an excel file with a short explanation of the issue.

The Secondary Sample Unit (SSU) is the trip. In the strata OTB and PTB_8abd, there is usually one trip per week. In the stratum PTB_8c, there are usually several trips in the week and the sampled trip is randomly selected.

In relation to the sampling of fishing operations a systematic sampling of hauls is made. More or less, four hauls out of 5 are sampled. Some hauls at early morning are not sampled.

All catch categories available on board, as well as the incidental catches of sensitive species are considered in the sampling scheme.

More information about the on-board sampling protocol can be found

https://www.azti.es/en/servicios/fisheries-sampling-programme/

**Spatial data**

The spatial data notation used by Spain to provide the spatial data of landings and effort (Table H and I) is the rectangle.

The source of spatial information for the large scale fleet is a combination of logbook and VMS. When there is no congruent statement in the logbook, VMS is used to check this (in cases where vessels have VMS).

In the case of small scale information, it was included in the FDI data and the source is official declarative forms or approximation. The method used for the approximation is based on the port of landings and port of sale.

**Coverage and methods used to estimate landings and effort data for vessels <10m**

The main source of fishing activity data of small scale fleet is the sales notes, except for exceptions due to specific regulations that oblige vessels less than 10 meters to cover the logbook.

Metier/gear/mesh size are estimated on the basis of sales notes landings species composition and declared gear or fleet register gear.

Fishing effort is calculated according to Nicosia 2016 (see next section).

As improvements, since 2018 sales notes information is collected by TRAZAPES, a tool that has information quality control systems. These systems allow verifying, prior to its acceptance and incorporation in the databases, the consistency of the information submitted. Thus, the information and quality obligations are met, greatly improving the quality of the data, although sometimes discrepancies are still found.

It should be highlighted this tool is under constant development, establishing new rules to guarantee the adequacy of the information.

**Calculation of the effort and use of the FecR package**

FecR package is not use. Instead an algorithm was developed to calculate the effort according to Nicosia 2016.

The basic principles are:

- Days at sea: 24 h period
- Fishing days: calendar days on which fishing activity takes place.
- Trip:
    - Vessel with logbook. A trip is the basic unit to calculate effort. Trips are registered in logbooks by fishermen.
    - Vessel without logbook. Sales notes are the reference. 24-hour period is not used, as there are no "Departure date"/"Return date" registers. 1 sales note = 1 trip = 1 day at sea = 1 fishing day.
- Gear:
    - Active gears are considered to be used sequentially.
    - Passive gears are considered to have been deployed in parallel which requires separate effort calculation. Each gear = 1 effort day.
- Allocation effort regarding gears and areas. Each combination of gear-area in each fishing day (GAFD) within a trip is taken into account as a conversion factor (= (1 / total Fishing days) / nº GAFD) for the allocation of effort.
- Effort calculation should never be duplicated. In this case, it is taken into account: gear, mesh size and area.

**UK EEZ indicator**

For FDI 2023 UK EEZ indicator is assigned according to the country declared in logbook for all years (2013-2022), that is, corresponding to United Kingdom.

**Deep criterion**
The criterion used for assigning the fishing trips as deep trip is the one proposed by the FDI, when the catch of deep species exceeds 100kg.

**Data availability**

Tables for the 2013-2022 time series were loaded before the deadline. However, the Tables A, G, H, I and J of 2013-2017, the Tables A, C, D, E, F and J of 2018-2021 and all tables of 2022, were upload again during the EWG 23-10.

**Coverage**

The data provided covers all areas in which the Spanish fleets are active and conform to the requested aggregation.

This year, the historical series was updated to incorporate the new métiers codes agreed upon in the *ISSG on métiers and transversal issues* of RCG of NANSEA. To correctly report the biological-fishery data of the Spanish tuna fisheries, the FDI was requested to incorporate a new field in which the métier would be introduced at level 7, including the target species of the fishery. The required modifications were made without any major inconvenience.

The data in Tables C and D could not be provided as they were not considered statistically robust.

Moreover, the UK as the new EEZ-indicator and the unification of deep criterion were carried out for all years.

**Comparison with Eurostat data**

In general, the number of vessels and the total landings reported in the FDI are comparable with the EUROSTAT data.

Regarding the number of vessels, the difference ranges between 0.5% and 1.5%, being the data reported in FDI slightly higher between 2013 to 2017, and lower between 2018-2022.

Regarding total landings, the greatest discrepancies are located in the years 2013 and 2014, with a difference of 6% and 7%, respectively. For the other years, the percentage is less than 3%. Total landings are slightly higher in the FDI, except in 2013 and 2014. The data are better than last year.

**Confidentiality**

The recommended methodology in FDI annex was used: data that relates to less than 3 vessels are considered confidential.

Table A, H if less than 3 vessels in aggregation level then A else N. Table G, I if less than 3 vessels in aggregation level then Y else N.

**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 data submission**

The Tables H and I are better than last year, since the errors have been corrected, except the points in land which is necessary to check again.

The problems related to the SOP found in Tables E and C last year and the differences between Table A and H and Table G and I, respectively, have been fixed.

**Other comments if relevant**

The COVID19 pandemic affected Spain intensely during 2020. All human activities, including marine research, were affected. In relation to fishing activity and marine research, the situation in 2020 was as follows:
- The Spanish Government considered fishing an essential activity. Except for the first months of spring, fishing activity took place with relative normality in EU waters.
- Sampling of the fishing activity at fishing ports and by observers on board suffered important restrictions, but this was not so much because of the pandemic but because of the coincidence in time with an administrative problem of the companies that carry out the sampling. In August the Ministry of Agriculture, Fisheries and Food provided assistance to carry on an important part of the on-board programme during the third and fourth quarter of the year while IEO administrative issues were solved. The sampling at market only could be carried out for 1 month in the whole year. In January 2021 the administrative issues were solved and all sampling programs were resumed and they are working correctly. No major problems expected in 2021 except those related with pandemic restrictions.
- The work in the science labs during the spring (the hardest time of the pandemic) was carried out by teleworking (or had to be postponed). Afterwards, teleworking was combined with physical presence in the labs.

## A1.9 FRANCE

**Methodology**

In accordance with the French DCMAP working plan 2022-2023, the French data submission for this data call is based on the following sources of information:

**French fleet register** (vessel characteristic (length overall, kilowatt, gross tonnage, age of the vessel), geographical indicator, total number of vessels)

**Annual fishing activity calendars survey**[1] (active/inactive vessels, typological classification of vessels by fleet/fishing technique, fishing area, métier, supra-region)

**Logbooks** *(over 10m'vessels)* and **monthly declarative forms** *(coastal logbooks, 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)

**Sales note data** (total weight and value of landings by species)

**Geolocalisation data** *(inc. VMS data)* (fishing effort estimates (number of trips, days at sea, fishing days and hours at sea), precise fishing area)

**Complementary on-site sampling of trips**[2] *(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)

**At-sea** *(vessel' fishing trip sampling)* **and on-shore** *(port-sampling)* **scientific observer sampling data** (discards estimates, length and age distributions by species of landings and discards)

The definition of the reference fleet population follows 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.

**Complementary on-site sampling of trips** *(catch assessment survey)* are collected for the **French fishing fleet less than 12 meters length operating in the following regions: French Guiana (Geo Indicator: GF), Guadeloupe (GP), Martinique (MQ), La Réunion (RE), Mayotte (YT) and Mediterranean continental area until 2018** where the coverage and precision of the available declarative control regulation data is evaluated as insufficient/incomplete to meet the end-users data needs *(e.g. DCF requirements)* and are judged insufficient and unreliable to estimate fishing activity data. Reference fishing activity' estimates for these fleets *(total estimates of weight and value of landings by species and fishing effort (number of trips, days at sea, fishing days), fishing area and metier)* are then calculated on this basis.

**For the French fishing fleets less than 12 meters length operating in the supra-region Mediterranean** *(for Corsica and since 2019 for Mediterranean continental area)* for which the coverage and precision of their available declarative control regulation declarative data is evaluated as insufficient/incomplete to meet the end-users data needs *(e.g. DCF requirements)* but are judged sufficient and reliable to estimate their fishing activity data ; a **re-evaluation methodology on the basis of the annual fishing activity calendars survey** is applied to calculate their reference fishing activity' estimates *(details about the re-evaluation methodology applied is described in the 9th IFOMC proceedings p°105-108, https://ifomcvigo.com/wp-content/uploads/2018/08/proceedings-9th-ifomc.pdf)*

Some **specificities** applied for two particular fishing fleets: **"Mediterranean Bluefin Tuna Purse Seiners"** and **"Tropical Tuna Purse Seiners and Longliner"** but sources of information are very similar, differences being related to the database holding the information and the way to process the data.

**Finally and for all the other French fleets**, the definition of all the fishing trips with their associated features *(dates, fishing area, métier, gear and mesh size, total weight and value of landings by species)* is based on a **cross-validation tool: SACROIS**[3] **of the different available declarative data**.

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

**The applied process allows to estimate value of almost every landing, only few species/fleets do not have value assigned** *(regarding the result of the "Wghtlandg vs Vallandg" data check)*. **The two principal fleets without value assigned are the "French Tropical Tuna Purse Seiners and Longliner" and the "Guiana Shrimp Trawlers".** Apart from these two fleets, **the principal specie without value assigned correspond to the landings reported**

**under the OTH** *(Other species)* **codification** *(i.e the few landings not allocated to a specific specie)*. Very few other landings are also not informed about their value associated but it remains minor species/landings (<0.04% of the total landings).

**EEZ indicator** *(especially the more precise EEZ indicator, which includes UK waters, asked this year)* has been derived from SACROIS data which integrate this information based on assumptions and cross-validation process of different data sources.

For geolocalized vessels *(inc. VMS' vessels and the few under-12m geolocalized vessels)*, EEZ is derived directly from their geolocalized data.

For non-geolocalized vessels, SACROIS algorithm allocate an EEZ by fishing trip for each landing based on the following information and assumptions:

1) Monthly fishing declarative forms or logbooks filled out by the fishers eventually refine/precise through the annual fishing activity calendars where "precise" fishing areas could be informed *(as national statistical sub-rectangles and/or the range of operation (in or out the 12-mile coastal band))*
2) Pro-rata calculation application when the most precise spatial information available cover more than one EEZ.

**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 $2^{nd}$ transversal variables workshop was implemented on French data *(development of an adapted R script)* in order to calculate the estimates and answer the data call.

Regarding the results of the *data check comparison between Table A (landings) vs Table G (fishing effort)*, it has been noticed that "Totseadays" are not documented for the fleet "Mediterranean Bluefin Tuna Purse seiners" as this fishing effort metric is of very limited meaningful for this very specific fleet. Nevertheless "Fishing days" have been provided for it and could be used for the analysis. Apart from that, all the other data provided in tables A (landings) have been informed with fishing effort estimates (Table G) apart the only exception of one line for "Tropical Tuna Purse Seiners" fleet which represents ~0.25 ton in 2019.

**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 declarative forms)* and the vessel' activity calendar survey *(e.g. ICES rectangles or sub-rectangles for FAO 27)*. 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. **The issue remaining, last year, for the fleet "Mediterranean Bluefin Tuna Purse Seiners" has been fixed for the 2023 data call completing spatial information available for this fleet.** As this fleet is under ICCAT management, spatial information for it has been provided at 1.0*1.0 degree resolution.

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

At this stage, Discards' **quality indicators** *(DISCARD_CV, DISCARD_CI_UPPER and DISCARD_CI_LOWER)* have not been provided in Tables C & D.

**Discards estimates and length/age distribution estimates for discards and landings** have been provided following the domain definition asked in the data call and giving the possibility to link the tables C-D-E-F with table A. **Discards estimates** are also provided in table A broken up at the level of disaggregation requested according to the following methodology: *1)* aggregation of the discards estimates available in table C by "domain discards/year", *2)* sum of landings provided in table A by "domain discards/year" and species and calculation of the landings percentage for each concatenated row and *3)* partitioning of the discards estimates by row proportionately to the landings using the values calculated in *1&2 (total discards * landings percentage)*. Discards estimates disaggregated have been as well provided for the Mediterranean fisheries *(for which*

*biological data estimates are not requested in FDI data call)* in table A following the same methodology.

Estimates available in tables C-D-E-F are issued from the scientific estimates calculated following specific strata definition in space, time and metier in respect with the sampling design. Consequently, only approved biological data estimates are provided in this table. 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 definitions are annually specific for each stock assessed *(based on expert' analysis)* following for example ICES WG practice in term of labelling[4]. According to this complex process, applied annually specifically by stock, a domain *(ensuing 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 have been submitted in the tables C-D-E-F following the strata they retained to extrapolate the sample *(e.g. submitted ICES strata).* Based on that, a domain reference table has been developed in order to map the strata domain to FDI disaggregation level. Therefore, it is **now 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 about fishing activity available in table A.**

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 above. Nevertheless, it is reemphasized here that approved scientific discards estimates could be only found in tables C-D.**

**Table B *(refusal rate)*** has been provided this year only for the year 2022 taking advantages of the new variables added end of 2021 to the sampling reporting to better answer Table B needs. A specific data extraction and processing of the information available in the website dedicated to presenting and monitoring the sampling plan has been done. The results of the French on-board random sampling program *(i.e. ObsMER French statistical on-board sampling program)* are presented for the different strata retained in the national DCF workplan under the same codification *(see national DCF workplan available on the JRC website[5]).* For the different variables asked, the information provided are the following:

- REFUSAL_RATE: Number of vessels/fishermen contacted refusing on-board sampling/ (Total number of attempted contacts – number of unreachable vessels/fishermen)
- COVERAGE_RATE: Number of unique vessels sampled / Number of vessels in the stratum
- NONRESPONSE_RATE: Number of vessels/fishermen contacted not successful *(no fishing trip sampled after the contact)*/ Total number of attempted contacts
- VESSELS_FLEET: Number of total vessels in the stratum *(be aware that a vessel could be in different stratum, double counting)*
- TRIPS_FLEET: Number of total fishing trips recorded in the stratum
- TRIPS_SAMPLED_ONBOARD: Number of total fishing trips sampled in the stratum
- UNIQUE_VESSELS_SAMPLED: Number of unique vessels sampled in the stratum
- UNIQUE_VESSELS_CONTACTED: Number of unique vessels/fishermen contacted
- NOT_AVAILABLE: Number of unique vessels in the stratum with no possibility to go on-board *(administrative refusal)*
- NO_CONTACT_DETAILS: Information not available at this level of precision, information included in the next variable
- NO_ANSWER: Number of vessels with no contact information available or that have not answer to the contact

- OBSERVER DECLINED: Information not available
- INDUSTRY DECLINED: Number of vessels/fishermen contacted refusing on-board sampling
- TOT SELECTIONS: Total number of fishermen/vessels with contact information available.

Until now, very few data have been highlighted as being **confidential**. It concerned only long-distance fisheries (Tropical tuna purse seiners) and Mediterranean Bluefin tuna purse seiners as there are very specific and relate to very few vessels. However, there are many issues related to these data where certain lines *(especially the lines for the spatial information which are highly disaggregated)* hold information for less than 3 vessels which have to be legitimately marked as confidential but at this stage are not. 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**

French data have been uploaded before the legal deadline of the data call also considering the different checks done during the upload process. Some minor complements *(for Tropical Purse Seiners)* of the Table D have been done before the operational deadline. Finally, considering the data checks carried out during the EWG FDI, some minor adjustments in tables C-D-E-F *(nep_sub_region issue)* and table J *(avg_loa issue)* have been made and these tables have been re-upload during the first two days of the EWG. The current data can be regarded as final given current knowledge. However, data could be improved/completed before next data call and in this case they will be re-upload for the next year data call.

**Coverage**

French data available in the FDI database for 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022 cover all the French fleets including overseas fisheries, long distance fisheries and small-scale fleets.

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 *(~1% 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.

**Problems encountered**

*Covid-impacts on the biological sampling*

The scientific sampling of landings and discards of the commercial fishery has been impacted by the Covid-19 sanitary crisis. Sampling program was cancelled in the time period 15th March to 15th May 2020. Some alternative ways to collect nevertheless some data have been tested/implemented *(self-sampling, purchases of fishes …)* to minimize the gap but with more or less success. Finally, on-shore and on-board sampling data available for 2020 have been affected by this situation and some biological estimates could not be calculated for 2020. That's the reason why there is less

estimates available in 2020. Furthermore, for some estimates combination of strata has to be done to balance this lack of data. Finally, it is the best scientific biological data estimates regarding this lack of data that have been provided in the tables CDEF in response to the FDI data call.

**Other comments if relevant**

No other comments.

[1] **Annual fishing activity calendar survey covers the whole of the reference population** in all the supra-regions where French vessels operated *(French fishing fleet register' vessels (FPC) including overseas fisheries, small-scale coastal fleets also vessels not cover by available control regulation declarative data)*. The survey is conducted by fishing observers *(observers' network of the Ifremer Fisheries Information System)* yearly in France on the basis of preliminary documentation provided by available control regulation declarative data *(fleet register, logbooks, monthly declarative forms, sales note data, geolocalisation data)* and take place every year in the first month of the year on the previous year. It is particularly instructive for the small-scale coastal fisheries, where catches and effort data are often incomplete.

It aims at characterizing each year the inactivity or activity of all the vessels each month of the year and, in the latter case, the metiers practiced *(metier is defined as the use of a gear to target one or several species)* and the main fishing areas with the corresponding range of operation *(distance to the coast of the fishing operation)*. In addition, fishing activity calendar identified each month the main port of exploitation, the number of fishermen on board and the number of days at sea and fishing days. The aim of collecting data about the activity of each vessel is to have a minimum but exhaustive information on the vessels, to have a complete picture of the whole fleet in terms of gears used and fishing activity, at least at a monthly scale.

Such surveys provide information on the part of fishing activity not included in available declarative data *(completeness check)* and also the basis, if necessary, to re-evaluate available fishing activity data estimates *(in case of incomplete data)*. They constitute also an input each year for the typological classifications of vessels by fleet and a description of their metiers which in return makes also possible the definition of sampling plans to structure the routine data collection actions. They are also used to allocate metiers to each fishing trip and constitute the exhaustive basis for doing estimation based on the complementary on-site sampling data. Finally, some passive gears characteristics information is also collected during the survey with a minimum of 5% of the French fleet surveyed.

Detailed information about the survey could be found in the following document: *ICES CM 2008/K:12 "From fleet census to sampling schemes: an original collection of data on fishing activity for the assessment of the French fisheries." - Patrick BERTHOU, Olivier GUYADER, Emilie LEBLOND, Sébastien DEMANECHE, Fabienne DAURES, Claude MERRIEN, Patrick LESPAGNOL -* [https://www.ices.dk/sites/pub/CM%20Doccuments/CM-2008/K/K1208.pdf](https://www.ices.dk/sites/pub/CM%20Doccuments/CM-2008/K/K1208.pdf).

[2] The fishing trips landings observation programme is based on a sampling plan adapted to each monitored region and based on the frame survey *(Annual fishing activity calendar survey)* useful to optimise the strategy of the spatio-temporal on-site sampling plan. It aims also to cover at best and regarding the aimed estimates accuracies, the variability of catches and fishing effort between "metiers", "fishing areas" or "seasonality" by optimising the expendable sampling effort. In order to optimise the accuracy of the ObsDEB estimates, a random stratified *(vessels are stratified into fleets)* telephone survey is also conducted in parallel *(when it is appropriate, i.e. in Martinique and Guadeloupe)* aimed at estimating the fishing activity calendar at a finer scale. This allows a better allocation of sampling effort and a better allocation of fishing vessels in the strata. In Guadeloupe, exhaustive fuel consumption per vessel is also used to consolidate total fishing effort estimation.

The sampling of fishing trips is conducted by fishing observers *(observers' network of the Ifremer Fisheries Information System in the Outermost regions)* throughout the year following the sampling scheme. For each fishing trip sampled directly on-site *(when the fishers come back to the harbour)*, the observer reconstructs with the fishers the course of the trip *(fishing effort, gear used and fishing ground location, landings by species and associated costs)*, and the number of fishing trips per gear/metier for the past week *(weekly activity calendar to estimate fishing effort i.e. number of fishing trips operating during the year by metier)*. The monitoring of the statistical protocol applied guarantees the statistical representativeness of the samples of fishing trips obtained and allow the statistical theory of sampling to be applied to the calculation of effort and landings estimators and their associated accuracies. The sampling rate aim to cover 5% *(in order to guarantee the calculation of confidence interval estimates with an acceptable sampling error)* of all the fishing trips of the fleets monitored with the exception of the fleets operating in French Guiana *(regarding their specificities)* where the protocol is slightly different and globally almost 50% of the fishing trips are surveyed. The raising method is based on the statistical theory and a post-stratification of the fishing trips and weekly calendar sampled by group of metiers. Percentile bootstrap methodology is used to calculate the associated estimates

accuracies. McCarthy and Snowden method is applied to define the size of the bootstrap samples in order to take into account the "finite population correction".

Detailed information about the survey could be found in the following document: *Demanèche, S., Berthou, P., Blanchard, F., Cornou, A.S., Daures, F., Deporte, N., Guyader, O., Lespagnol, P., Reynal, L. 2013. Methodological issues to estimate catches and fishing effort of small-scale fisheries by sampling fishing trips on-site. Proceedings of the 7th International Fisheries Observer & Monitoring Conference, 8-12 April 2013, Viña del Mar, Chile (p°60–62). https://www.ifomc.aq/information/proceedings/past_proceedings*

[3] **SACROIS** (*https://archimer.ifremer.fr/doc/00774/88631/*) is a cross-validation tool for the fisheries statistics, aiming at providing the best possible fishing statistics data by cross-checking available data from the different declarative control regulation 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 and coastal logbooks, sales notes data, geolocalisation data and the scientific census of annual fishing activity calendars, in order to build the most accurate and complete dataset compiling French fleet' fishing trips with their associated features *(dates, fishing area, metier, gear and mesh size, total weight and value of landings by species)*. 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. 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. SACROIS include also the allocation of a single metier to a fishing trip *(see detailed methodology explained in 'Anonymous, DCF metier workshop report, 2018', Annex5 p°75 – 87* RCG (2018) DCF Métier Workshop, Lyngby, Denmark, 22-26 January 2018. A DCF ad-hoc workshop. Sub-group of the RCGs – North Sea and Eastern Arctic and North Atlantic. 87pp. https://github.com/ices-eg/RCGs/tree/master/Metiers/Reports *)*.

[4] 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.

[5] https://dcf.ec.europa.eu/wps-and-ars/work-plans_en

## A1.10 CROATIA

## Methodology

### *Data collected and derogations*

No derogations are used for data on fishing activities (catch, landings, discard, effort) and capacity. Data for all fleet segments on transversal variables are derived from national database (FIS), maintained by the Croatian Ministry of Agriculture, Directorate of Fisheries (MA-DoF), which contains the primary data according to the Commission Implementing Regulation (EU) 2017/218 on the Union fishing fleet register, Commission Implementing Regulation (EU) No 404/2011 and national legislation on catch reporting for vessels  up to 10 metres' length overall.

Biological data is collected under the Croatian National Programme according to the sampling strategy following the métier approach agreed at the level of Mediterranean and Black Sea Member States.

### *Estimation procedures*

Data on landing, discard and effort data is collected on a census basis from the entire fishing fleet, therefore there are no estimation procedures for reporting on landing, discard and effort data. For vessels below 10m length overall using passive gears a monthly fishing report is applied according to national legislation in which case fisherman report data for each fishing trip. Data for landing value is estimated using average prices from sales notes - for all species landing value is estimating based on average prices derived from sales notes multiplied by weight from landing declarations.

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. However, biological data on species level for those species is estimated on the basis of commercial sampling data and detailed analysis of landing during scientific monitoring of métiers, 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.

Spatial data on landing and effort is estimated on the basis of data on Croatian fishing zones reported in logbooks and fishing reports, including in fishing operations carried out in the EEZ. For this purpose, specific mapping procedures are developed within the FIS database to extract data according to GFCM statistical rectangles. Croatian sea is divided into 11 fishing zones and 37 fishing subzones which represent management units - data reported by Croatian fishing subzones in the logbooks/fishing reports is partitioned to the GFCM statistical rectangles on the basis of percentage of catch in each Croatian fishing subzone (Fig. A1.10.1).

Concerning spatial data, in previous years STECF recognized that Croatia provided records appearing as centroid of square M26E7, located on land (at 0.5*0.5 degree resolution related to GFCM squares according to GFCM statistical grid). This is not a case of misspecified geo-coordinates, but a special case according to the Croatian Marine Fisheries Act which defines the Delta of River Neretva as marine area, while this square is not recognized by GFCM and Annex 1 (Appendix 14) of the FDI data call. In agreement during the STECF working group, Croatia did not correct this data since it is in line with the national legal framework.
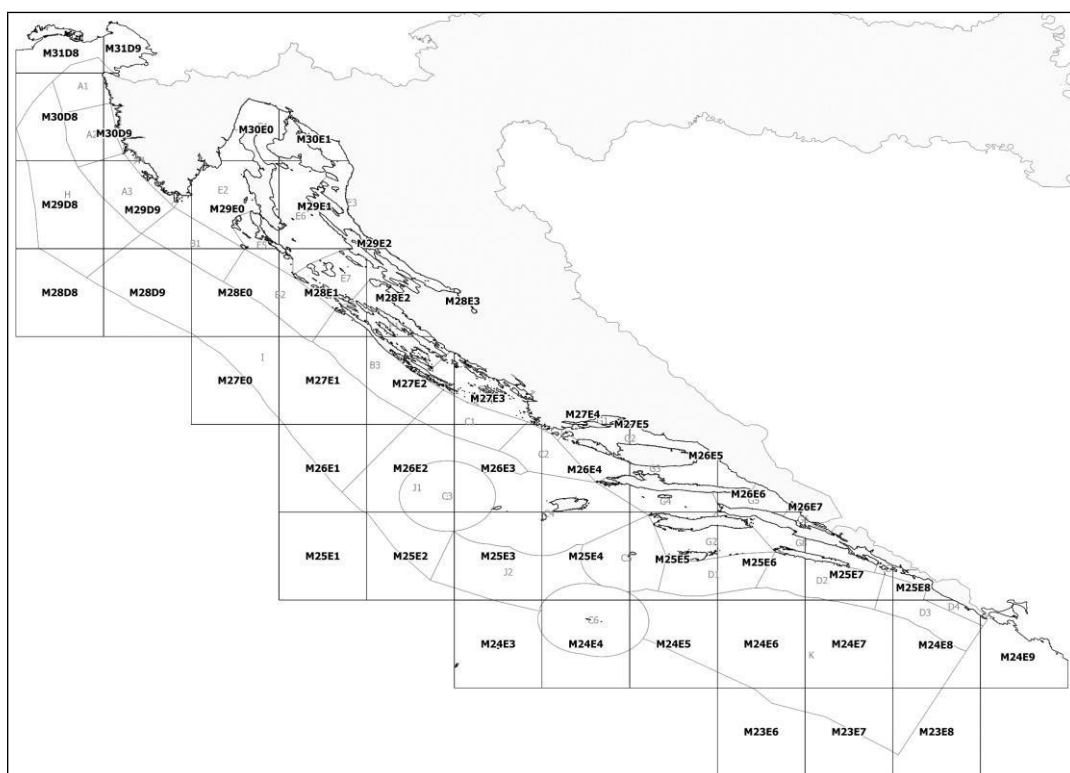


**Figure A1.10.1**: Map of Croatian fishing zones overlaid by GFCM statistical grid.

*Discard calculation*

Entire fleet is covered by catch reporting therefore discard data provided in response to the FDI data call is according to the Control Regulation from logbooks/fishing reports. Croatia has a census-based data collection on catch reporting (the entire fishing fleet is obligated to report all data).

*Calculation of effort*

All effort calculation procedures are implemented in FIS database 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 fishing 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, métier levels 6 and 7; temporal and geographic stratification).

*Quality indicators (e.g., refusal rate)*

Currently refusal rate is not recorded.

### *Data availability*

All the data was finalised and available by the data call legal deadline. Data was provided for 2013-2021 and preliminary data for 2022. As a Mediterranean MS, Croatia was not obliged to provide spatial data for 2013.

### Coverage

The data provided in the data call covered all Croatian fishing vessels during the reference period for all the landed species. There are no gaps in the data collection or data submission.

*General comments*

In regards to landing and effort data according to vessel length 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 regional agreement of the Mediterranean and Black Sea Member States (LM 2018 Recommendation 9). This agreement refers to merging of length classes and states that biological sampling 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 Recommendation, Croatia is sampling according to métiers regardless of length classes. According to this agreement and data call specifications in 2023, data for the Med&BS data call in 2023 was provided on the level of métiers (including scientific discard estimates), and for FDI on the level of fleet segments.

<u>Comparison between total weight landings and total value landings:</u> In the case of Bluefin tuna caught in purse seine fisheries, data is reported on the catch and effort, and the reported landing value is zero. Namely, all PS-BFT catch is transferred to cages for farming purposes, therefore there is no landing value. All income related to PS-BFT catch is realized by the BFT farms (BFT catching vessels are owned by the farms).

<u>Comparison between landings and discards:</u> 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). Some very small inconsistencies were marked in the data quality check mostly due to rounding and procedures for partitioning spatial data.

<u>Comparison with Eurostat data:</u> There are no significant differences between data reported according to FDI and Eurostat data. Number of vessels reported 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 the 31st of December. The biggest difference if in the number of vessels reported for Eurostat for 2013 and 2014 which included non-commercial small-scale artisanal fishing fleet which are not included in the DCF population of vessels.

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 issues. Confidentiality cells for the purpose of FDI reporting are marked N (low risk of identifying specific vessels).

### *Problems encountered*

*Problems related to data collection*

No major issues.

*Problems related to data submission*

No major issues.

### Other comments if relevant

Capacity and fishing activity data needs to be interpreted with caution considering the entry of the previously non-commercial small-scale fleet (around 3.500 vessels) into to commercial fleet which were transferred in 2015 and gradually activated during the lengthy administrative process of issuing licences.

## A1.11 ITALY

**Methodology**

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

• Fishing fleet register. For vessels less than 10 m, the fishing technique actually used by each vessel is checked in field surveys through the data collectors network used in sample surveys. For vessels > 10 m, the prevalent fishing technique is obtained by the information reported in logbooks.

• 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 vessels > 10 m.

• 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 the fleet => 15 meters. 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 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, i.e.:

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

- fishing day: any calendar day at sea in which a fishing activity 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.

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. 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.

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 Italian 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.

**Data availability**

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

**Coverage**

The Italian tables cover all the time series 2013-2022 and all the métiers.

The quality checks displayed inconsistencies among the data provided in table H and table I (data with total landings in table H without corresponding fishing days in table I, for several records and the whole period 2017-2021).

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.**

Small differences in the two datasets are present but they are very low for all the years in the time series. The differences are explained by the fact that EUROSTAT tables include the catches of BlueFineTuna by fixed traps that are not reported in the FDI dataset.

**Confidentiality**

No confidentiality issue.

**Problems encountered**

No problems encountered in data preparation and submission.


**A1.12 CYPRUS**


*Methodology*


The data are collected under the Cyprus National Data Collection Program. Cyprus meets the DCF obligations by the collection, management and use of fisheries data as follows:

a) Data collected under Control Regulation
b) Sampling schemes (on board and at landing sites)
c) Research Surveys at sea
d) Interviews
e) DFMR database


*Complementary Data Collection*


Complementary data collection is required for vessels with length 0-6m and 6-12m for the following reasons:

- The use of logbooks, which provide information on effort variables, is not required for fishing vessels less than 10 metres length.

- For fishing vessels <10m, sales notes and sales receipts are considered as a proxy for fishing days, days-at-sea, fishing trips and fishing operations; however, these effort variables cannot be assigned to métiers. Furthermore, sales notes and sales receipts cannot be related with certain effort variables (e.g. length of nets, number of hooks, soaking time).

- Although all fishing vessels in Cyprus are required to record their landings irrespectively of quantities caught (through logbooks, sales notes and sales receipts), in the absence of logbooks the landings of vessels<10m cannot be assigned to métiers.

Complementary data on effort and landings by métier are collected through a probability sample survey.

*Landings weight data*

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.

*Discards*

The ratio estimator of discards (R) for a given species in a given stratum is estimated on the sampling data and can be estimated by dividing the discarded amount (D) of the species in the stratum (e.g. fleet segment, fleet segment-quarter) by the amount of all retained commercial species (landed fraction, L) in the stratum S.

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

*Average price*

For estimating average prices, data on prices are 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 do not highlight any incorrect data and/or inconsistencies among the data provided in the different tables requested by the data call for the year 2021.

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 for the year 2021 besides the number of the vessels. The number of vessels in Table J of the FDI data set is lower than the number of vessels reported in EUROSTAT data set. The reason for this difference though is that the number of vessels in FDI represents only the active vessels whereas in EUROSTAT it represents the active and inactive vessels. This applies for the years 2016-2022. Difference in the number of the vessels exist in 2013 and minor differences in 2015. The reason is that some of the vessels of small-scale fishery were scrapped in 2013 and 2015 through structural aid within the framework of the EFF 2007-2013 and EMFF 2014-2020 accordingly and they ceased their fishing activities during these years. It seems that these vessels were not incorporated by the Eurostat data because they were removed from the Fleet Vessel Register. But these scrapped vessels were incorporated in the FDI data according to the DCF framework since they were active at least for one day during those years.

As for the landings data, differences between the FDI data set and the one in EUROSTAT exist for previous years than 2021 and specifically for 2013, 2014, 2015, 2016 and 2017. For the years 2015, 2016 and 2017 the difference between the two data sets is small but this is not the case for the years 2013-2014. From the year 2018 and onwards the data sets of FDI and EUROSTAT are the same.

## *Problems encountered*

No problems encountered in the preparation of the files.

The sampling in 2022 was not impacted by the COVID-19 pandemic as it happened in 2021, where there was no onboard sampling on trawlers.

## *Other comments if relevant*

No other comments.

## 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). The 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 the small - scale fleet effort was calculated as one day at sea and is equal to one fishing day, because information in coastal logbooks is provided on daily basis.

Information about discards is based on estimates from fishery observers. This category includes the part of the catch, which is thrown overboard into the sea.

While working at sea on board of ship or small-scale fishery boat, observer collects the information from each fishery act by species and catch categories (Landings, BMS and Discards).

All discarded fish are measured and weighted by species unless the discard is very large. For such cases the weight for subsample is taken. All sub-samples are weighted. Sorting of fish into catch categories is carried out 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 the following 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:

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

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

Quality indicators for discard estimates were not calculated. No thresholds were applied.

Due to the critical state of cod stocks in the Eastern part of the Baltic Sea, the specialized cod fishing was not permitted in 2022. Cod could be kept in the catch only if it is an unavoidable by-catch in other fish fisheries (Baltic Herring, Sprat, Flounder).

In third quarter of 2022 one fishing trip with demersal trawl was made targeting flounder. Total catch was negligible (2 tons of flounder and 140 kilos of cod as a by-catch). Observer did not participate into this fishing trip. For 2022 information on discards of flounder were collected in second and third quarter from small-scale coastal fishery in subarea 27.3.d.28.1 only.

R script (*fecR* package) have been used for effort calculation in case of offshore fishery.

In period of 2013-2022 no refusals to take observers on board were recorded.

The entire time series of landings and effort tables were successfully re-uploaded with new metier codes recommended by RCGs.

The EEZ indicator was determined based on fishing area provided in logbooks according to the Appendix 9 of Annex 1 of FDI data call.

**Data availability**

Latvian data were provided on time and in accordance with required format. Average prices per species for 2022 were used from 2021. The final data for the average prices for 2022 could be available by the end of November 2023.

**Coverage**

Provided data covers all Latvian commercial fishing fleet, which operates in Baltic Sea, CECAF and NEAFC areas except data for 2013 and 2014 for vessels operating in 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 was calculated and provided in format consistent with format used for economic data call.

Comparison with Eurostat data show small difference in landings values for freshwater species for 2015 and 2016 as information about recreational fishery was not provided under FDI data call. As information about landings of distant fleet is not provided under FDI data call for 2013-2014 the big difference in landings is observed. Starting from 2017 there is no information about Latvian landings is available in Eurostat dataset. Number of total vessels presented in Eurostat represents all Latvian fleet which is registered in Fleet Register while number of total vessels extracted from FDI dataset represents only active vessels.

**Problems encountered**

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

**Other comments if relevant**

Latvia annually submits data on herring in subdivisions 27.3.d.28.2 and 27.3.d.28.1 according to the FDI data call and formally combines biological data on two separate herring populations - the population in the Gulf of Riga and the population in the open Baltic. This approach is not only biologically incorrect, but also cannot be used for herring stock assessment and it is unacceptable for the fisheries management. Any analyses using submitted data for herring should be carefully reviewed before making any conclusions.

**A1.14 LITHUANIA**

**Methodology**

**Data collected**

For all fleet segments by regions the transversal variables are 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 and adopted the Work Plan.

**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 (methodology described in WKSCMFD report). The ratio of discards is 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 provides the key details on the species, presentation, location of landings, weight and value of fish being landed. To approach reliable and accurate information on fishing activities 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 daily activity and collected data in the declarative form is up until 2018 inclusive, 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 reporting of UK EEZ, the checked and validated logbooks records were derived. In case of inconsistency in area and position records in logbooks the cross-checks with delocalized data were applied. The "start of the activities coordinates" were prioritized as indication of EU EEZ.

For all fleet segments value is estimating based on average 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 shall be 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 the effort. This means that there can be lines with discards but no landings.

No thresholds for submitting biological data were applied.

R script following principles agreed on the 2nd Workshop on Transversal Variables was used for calculations of days at sea and fishing days.

In Table B the supplied information on sampling design, but it is not considered as a probability-based vessel selection design. The refusal rates were indicated as 'NK'. All data quality indicators in Table C, D, I and F were calculated and provided. No Table K has been supplied. Discards in Table A with no corresponding biological information are reported.

### Refusal rates

Sampling programme are contributed only on the Baltic Sea region. Sampling programme for the CECAF and SPRFMO regions is carried out according to multilateral agreement. Since 2018 Poland has coordinated the programme for CECAF and since 2017 for SPRFMO. Selection of PSU was not fully probability based in the Baltic Sea region, 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 on the refusal rates was provided in table B.

### Data availability

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

### Coverage

2013-2022 period submitted data covers all areas and species. Resubmission of 2013-2021 was with updates with new métier codes that correspond to the data call code list which were approved by the RCGs. Submitted data conforms to the requested in the data call aggregation, by quarter, area, gear, metier 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. The final updated data of table A, B and G were uploaded during EWG meeting. In respect of data check reports, other tables of the above-mentioned period data were resubmitted due to observed inconsistency of coding or to update data sets. 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 mainly 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. Allocation of confidential indicator was set up using condition of less than 3 vessels' rule. 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 of the Lithuanian fleet.

### 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 and in 2020 the sampling

plan was incomplete. No biological data on discards in the Baltic Sea region was planned and provided for 2021 and 2022. 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 have not been improved due to limited number of vessels which are landing in Lithuania and suspend of demersal fisheries in eastern part of the Baltic Sea. In some cases, allocation of metier to small-scaled fleet with no catches was highlighted as issue. There was developed R script for applying metier. However, there is still a need to improve methodology of metier allocation for small scale fisheries. No problems with data submission were encountered.

## Other comments if relevant

Quota and catch options for cod in the Baltic Sea were historically low in 2020,2021 and 2022, so the possibility to obtain trips and samples information from the fishery was also reduced. Due to COVID-19-related restrictions, the fishery was shut down for a short period in 2020 and made low affect in 2021. When the fishing took place, observers very rear could enter the vessels. The Lithuanian fleet which operates in the Baltic Sea region, usually obtains small catches on board where the catch size can be adjusted more easily. Therefore, no difficulty of sales and fishing activities continued during the pandemic. Biological sampling was mostly affected by quota restriction than the restrictions for COVID- 19. Based on a multilateral agreement between DEU-LTU-LVA-NLD-POL from 2018 and a multilateral agreement between DEU-LTU-NLD-POL from 2017, Poland has been coordinating the joint sampling program for biological data collection on the board of EU fishing vessels engaged in the fishery for small pelagic fish in the CECAF area (Central-East Atlantic) and in the SPRFMO area (South-East Pacific) respectively. No sampling was conducted in either region in 2020 and 2021 due to COVID-19 (closed borders, restrictions in people movement, safety issues etc.). The long period of data requested in the STECF FDI 2023 data call might impact the quality of métier allocation as check is complicated.

### A1.15 MALTA – NO INFORMATION PROVIDED

### A1.16 NETHERLANDS

#### *Methodology*

The Dutch FDI data are compiled from multiple data sources. The logbooks (preliminary and official catches), sales notes and VMS data are collected by the Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland, RVO) and are provided to Wageningen Marine Research (WMR). WMR is responsible for the collection and provision of biological data for discards and landings under the Data Collection Framework (DCF). The fleet register from the EU Fleet Register database is also used to provide the inactive vessels in the capacity table (table J).

#### Sampling description

Dutch pelagic fisheries are owned by 3 fishing companies. The on-board observer sampling scheme for discards, incidental bycatch and the self-sampling scheme for the landings run in close cooperation with these companies.
Pelagic and passive gear (small scale) fisheries are monitored for discards with an observer program of which the sampling coverage is limited. For the on-board monitoring of passive gear/small scale fisheries, attempts to set 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.
Discard biological data for the demersal fleet are collected via an on-board sampling program. using a reference fleet. 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.
The on-shore sampling program focuses on the biological data collection of demersal species from major Dutch auctions that represent 80% of the total landed weight.

**Discard estimation and partitioning**

The samples collected from the at-sea and market sampling schemes have been raised for the ICES data calls and are subsequently transformed to the FDI data call format. Discards are routinely estimated based on the pelagic and demersal at-sea sampling schemes respectively. 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 depending on the factor used for raising to the population (effort). When discards were not observed but sampled, a zero value is added in table A as a distinct observation of a corresponding fleet. In the case when there is no sampling coverage, a "NK" (not known) is used.

The discard quality indicators were not provided at this data call. Further guidance is needed on the estimation of the coefficient of variation and the corresponding confidence intervals for the FDI domains.

**Effort calculation**

Effort, days at sea and fishing days, are calculated based on the period between leaving and entering the port (using arrival date to the port and not the catch date). For days at sea the time spent fishing is calculated as hours at sea and is rounded up to whole days. Number of fishing days are the number of unique days spend at sea within a fishing trip. For active fishing gears each day fishing counts as a unique day whereas for passive gears the number of gears is used to calculate the number of fishing days. For example, for a vessel that uses 3 different gillnets the same day the fishing days are calculated as 3 distinct fishing days.

**Exclusive economic zone**

The EEZ is assigned to table A using the VMS data, when it is possible to determine the fishing activity in the latter. First, the VMS data get assigned a fishing activity and then the EEZ shapefile is superimposed to the logbooks to determine which fall under which EEZ. When it's not possible to use the VMS data, the surface area of each rectangle is used instead.

*Data availability*

The Netherlands provided all the tables requested by the FDI data call from 2013 to 2022 for both quota and non-quota species in all FAO areas the Dutch fleet is operating. No problems were encountered during the re-submission of the time series with the new métier codes.

*Coverage*

The Netherlands provided fleet specific landing and effort data for the years 2013 to 2022. 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 program.

*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).

*Covid related problems regarding the data collection in 2020:*

- Pelagic at-sea samplingFew trips did not take place in Q4 of 2020. The overall effect on the discard estimates is considered to be low. - Demersal at-sea sampling

Due to the limited space of the demersal vessels, it was not possible to adhere to the distance rules relating to Covid. Therefore, it was not possible for the observer to conduct the sampling for most of the scheduled trips. - Demersal self-sampling
The sampling took place as planned. There is no effect on the discard estimates.

- Market sampling
There was limited access to the markets during Q1. However, the respective fleets were also affected so the effect on landings estimates is considered to be low.
*Covid related problems regarding the data collection in 2021:*
There were no Covid related issues with the data collection in 2021.
- Demersal at-sea sampling
Due to the limited space of the demersal vessels, it was not possible to adhere to the distance rules relating to Covid. Therefore, it was not possible for the observer to conduct the sampling for most of the scheduled trips.
There were no other Covid related issues with the data collection in 2021.
*Problems related to data call*
No major problems were encountered related to the data call.

### Other comments if relevant

No other comments.

### A1.17 POLAND

### Methodology

Official fisheries data of the Polish fleet from the period 2013-2022 were collected from the database administrated by the Ministry of Agriculture and Rural Development.

Polish fishery is located mainly in the Baltic Sea, therefore sampling effort is concentrated in this area, except one sampled trip per year in the Eastern Arctic conducted until 2019. 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 applied sampling plan. 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 the DCF Transversal Workshops. The fecR package was not used directly because the national 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.

The activity of the small scale fleet is reported in monthly catch reports for <10m vessels, and in paper logbooks for 10-12m vessels. 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 the 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 either '0.5*1' or '0.5*0.5' resolution depending on the fishing area and data availability. For FAO area 27, information on ICES rectangle was used if available to identify the coordinates of the '0.5*1' rectangle. If information on ICES rectangle in FAO area 27 was not available, then '0.5*0.5' c-squares were determined from VMS data. In the case of distant waters, VMS data were used to identify coordinates of the fishing location, which were then converted to c-squares with a resolution of '0.5*0.5'. The EEZ indicator was determined based on the information from logbooks checked with the provided fishing area.

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 is prepared using clustered fleet segments.

The entire time series of data were successfully re-uploaded with new metier codes recommended by RCGs.

Several approaches were tested to calculate quality indicators of discard estimates. As a trial, a simple calculation of CV was applied based on the weighted standard deviation and weighted mean. The method was presented and discussed at EWG 23-05 FDI. Following the suggestions from the group, a more robust method based on bootstrap is being tested and is planned to be used for 2024 FDI data submission.

**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.

In one of the records in the Capacity table the average length of vessels is not consistent with a fleet segment. It results from the clustering of fleet segments.

**Comparison with Eurostat data.**

The comparison with Eurostat data did not show any significant differences in most of the years. There is a noticeable difference in 2013 data. The difference concerns data from CECAF areas. Part of this data were not available in the extraction from the official fisheries administration database. The issue will be further investigated. Another year where the difference in landings is visible is 2021. The reason for this might be related to the availability and completeness of the data at the time when it was uploaded to both databases.

**Publication of confidential data**

In the period 2013-2022 Poland had 3-5 vessels fishing outside the Baltic Sea. These vessels operate in different areas. Due to the national statistical law and taking into account the level of data aggregation, 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 – 2022. 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.

Due to covid-19, observer trips at sea were suspended on 18.03.2020. At sea sampling partially resumed on 03.08.2020 but only on vessels less than 12 meters in length. On shore sampling continued without any breaks but a reduction of number of samples was observed. For demersal stocks: cod.27.22-24, cod.27.24-32, fle.27.2425, ple.27.24-32 and tur.27.22-32 it was not possible to assess the impact of covid-19 pandemic on sampling because of Baltic cod fishery closure starting from 2020. Additionally, pelagic and demersal fisheries in the Baltic were closed from June until August 2020(July in subdivision 24). Sampling data on unwanted part of the catch (discards, bms) was less representative or missing in 2020, 2021 and partially in 2022 because of the suspension of at sea sampling, which is the major data source on this part of the catch. In case

of pelagic stocks: spr.27.22-32, her.27.20-24 and her.27.25-2932 the impact of covid-19 on sampling was considered to be medium. At-sea sampling fully resumed in May 2022.

**Problems related to data submission**

No problems with data submission were encountered.

**Other comments if relevant**

No other comments.

### A1.18 PORTUGAL

**Methodology**

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

Transversal data are obtained from logbooks and sales notes considering the Control Regulation and the National Work Plan. When available for the same vessel from 2013 to 2020, these data are combined to get more accurate information from both sources. Daily routines from established business rules are performed to detect and correct errors pushed from the data sources to the statistical database. New processes are being developed to improve error identification and rectification and thus get more accurate data. Relating to 2021 and 2022 data, for métier consistency reasons, only one source was used for each vessel: logbook or sales notes depending on if the vessel reports on logbook or not.

As Landings and Effort are requested at métier level, Portugal developed a procedure that classifies each trip with a métier. The process to allocate the métier follows different methodologies depending on the data source: sales notes and licenses or logbooks.

For vessels without a 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 considering the fishing licenses of the vessel, is allocated to a specific métier. Inthe Madeira outermost region, the métier assignment is also supported by questionnaires carried out at the port.

For vessels with logbook, there is a procedure based on SQL scripts that uses the information recorded in the Electronic Recording and Reporting System (ERS) reports or in the paper logbook, such as gear, catches and spatial data for each haul in each Fishing Activity Report (FAR). Each trip is classified in terms of date, area, gear, target assemblage, catch composition (species), catch weight and catch sale value. The current version of ERS does not yet have the definition of TRIP connecting all the reports, which is a constraint for data analysis. Consequently, both sources hadto be used on a few trips, which caused some inconsistency between effort and landings and spatial and non-spatial landings. Nonetheless, using the most significant amount of available information was considered the best solution. As referred previously, from 2021, only one source was used for each vessel: logbook or sales notes depending on whether the vessel reportson the logbook. A new version is expected to be implemented in parallel with a new data modelon which a data warehouse will be based, allowing an improvement in data quality.

Concerning the spatial information requested, whenever possible, the coordinates reported on theFAR at the haul level were used for vessels with electronic logbooks. On a few trips, it was not feasible to process the fishing activity coordinates, arising inconsistencies between spatial and non-spatial information. In the case of vessels with a paper logbook, the spatial information is the c-square corresponding to the coordinates of the reported statistical rectangle. In the case of

vessels without logbooks (small-scale fisheries - SSF), the coordinatesof the landing harbour were considered to address the fishing activity to a c-square.

*Value of landings*

When the data source is the logbook, the value of landings is calculated as the product of the weight of landingsby the average price determined for each vessel, species and fishing area. For SSF, the weight andvalue of landings are the ones recorded in Sales Notes. All vessels are obliged to sell fresh fish at the auction market.

*Discards estimation*

Discard values on tables C, D and K are estimated based on biological onboard sampling and were provided only for bottom otter trawl fisheries in 27.9.A.

The discard estimates from the trawl fisheries, reported to ICES for stock assessment purposes, are also the values reported to FDI. In 2013-2019 they were calculated from the data collected from the national observers sampling program (PNAB/DCF), on-board demersal fish (OTB_DEF_>0_0_0) and crustacean (OTB_CRU_>0_0_0) 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 in discards (i.e., with a large number of zeros in the data set) cannot be reliably estimated at fleet level (Fernandes et al., 2020). The frequency of occurrence in discards of most of the species reported to ICES was 0% or below 30% and, for these species, we assume that discards are 0 or negligible. They are reported in table K, which also includes species with no age/length information to reported in tables C and D.

In 2020 and 2021, the commercial sampling in ICES 27.9.a was affected by the COVID-19 pandemic: onboard sampling in Portuguese waters of ICES 27.9.a was suspended in March 2020 and was only resumed in Q4 of 2021, by scientific observers from an external company hired for the purpose. The low sampling coverage in those years hindered the use of the data for discards estimation purposes. In 2022 there were also limitations in the onboard sampling effort due to difficulty in the implementation of a new public procurement process for subcontracting the services of an external company, and difficulty in the implementation by the hired company.

As a result, it was not possible to use the standard discard raising procedure at fleet level to estimate discards for the period 2020-2022. Two different procedures were then used to obtain these estimates, one for the frequently discarded species (more than 30% occurrence in the sampled hauls) where estimates were obtained using the average discards per unit effort (DPUE) (Ton/fishing hours) by quarter, from the period 2017-2019; this average DPUE was then multiplied by the effort (fishing hours) by year. An average length distribution by quarter was also obtained using the 2017-2019 periods and used to obtain the length and age distributions for those years. In the case of species with irregular pattern on frequency of occurrence in discards in the sampling period 2004-2019, standardized discards per unit effort (DPUE) were obtained for that period, and the average value obtained from 2017-2019 DPUE estimates was multiplied by the total fishing effort of the fleet in each of the years (2020-2022), to obtain the annual estimates of discards. Species with no or low frequency of occurrence in discards(below 30%) are reported as zero in table K. This table also includes the discards of species for which no length/age distributions were reported in tables C and D.

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 completion 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.

The landing weights by species included in Tables C and D for the métiers coded as OTB_CRU_>=0_0_0 and OTB_DEF_>=0_0_0, were the result of aggregation of landings of more than one trawl métier reported in Table A, according to Table A1.18.1. Discard estimates are reported for those combined métiers, according to the National Workplan.

**Table A1.18.1:** Métiers aggregated in Table A and used to produce the domains of the data reported in Tables C, D, E, F and K.

| Métiers from Table A - CATCH | Métiers in domains of Tables C - F and K (biological data) |
|---|---|
| OTB_CRU_55-64_0_0 | OTB_CRU_>0_0_0 |
| OTB_CRU_70-119_0_0 | |
| OTB_MCD_>_0_0_0 (NEP,DPS,DWS) | |
| OTB_DEF_>0_0_0 | OTB_DEF_>0_0_0 |
| OTB_DEF_65-69_0_0 | |
| OTB_DEF_>=120_0_0 | |
| OTB_MCF_0_0_0 | |
| OTB_MCD_0_0_0 (except NEP,DPS,DWS) | |
| All métiers with gear 'GNS' | GNS_GTR |
| All métiers with gear 'GTR' | |
| All métiers with gear 'GTN' | |
| All métiers with gear 'FPO' | FPO_MOL_0_0_0 |
| All métiers with gear 'PS' | PS_SPF_0_0_0 |
| All métiers with gear 'TBB' | TBB_MCD_0_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_>0_0_0 and OTB_CRU_>0_0_0), proportionally distributed according to the species landings at métier level 6/quarter/vessel length. This is not the best procedure because OTB discard estimates were calculated using effort as auxiliary variable and, for this purpose, we are assuming that landings and discards are correlated, which may not be true. Discards reported in Table K are also included in Table A.

*Landings and Discards Age and Length data*

Length frequency is collected for all species present at the landing process occurring in ports with at market sampling coverage – concurrent sampling. The same approach is conducted regarding at-sea sampling, where all species present in all catch fractions of a sample (landings and discards), at haul level, are sampled. Then, depending on the species selected for sampling at laboratory, the frequency of collecting other biological variables such as weight, age, sex and maturity varies in line with National Workplan.

Age data (Tables C and E) was 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 for discards.

Length data (Tables D and F) is 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 of the species/years for 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 only started to be recorded regularly since 2017.

*Refusal rates*

For onboard sampling in 27.9.A, there are five sampling schemes in the national work plans of 2013-2022: 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 2023 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.

For onboard sampling in 27.9.A, refusal rates only started to be recorded systematically in 2017 and therefore were not submitted to FDI for years before 2017. In 2020-2022 the number of trips was extremely low due to the constraints already referred to in the 'Discards estimation' section and, therefore, refusal rates were 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 inthe logbook, the estimated effort could not be correct. For SSF, it is assumed that one Sales Notecorresponds to one trip and one fishing day.

**Data availability**

Portugal has submitted all transversal tables before the deadline. The biological tables were only submitted when the upload tool was reopened (17th July) due to time constraints in preparing the data.

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 nor 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.

**Coverage**

In addition to the vessels licensed by the mainland, the Portuguese fleet also includes the fleets of the autonomous regions (Azores and Madeira), being the data requested in the FDI data call produced independently by each of the regions.

The Azores outermost region is still struggling with access to the database and lack of human resources, which compromised the response to the data call. In consequence, no data was submitted for this fleet. Regarding the Madeira outermost region, it was only possible to report data from 2013 and 2014 (in order to solve issues registered on the DTMT) and 2022. This data is expected to be provided in the 2024 data call.

Since it was not possible for the autonomous regions to obtain all the data requested, and taking into account that when the entire time series was submitted, all the historic data from Portugal was deleted, the majority of the information on the fishing activity of this fleet is now missing from the FDI database. Concretely, with regard to the outermost regions, there is only information for Madeira for the years 2013, 2014 and 2022, and there is no information for the Azores outermost region.

**Data checks**

Portugal has verified all the FDI checks available on the JRC website and analysed the quality checks to evaluate potential incorrect data and/or inconsistencies between the data provided.

Some transversal tables were resubmitted during the EWG2 3.10 however, the following issues still persists in the data:

- Effort in days at sea was not provided for the Portuguese mainland fleet.

- Inconsistencies between effort and landings from the Madeira VL2440HOK fleet in 2022 and VL0010MGP fleet in 2013.

- Small differences on weight of landings between spatial (table H) and non-spatial (table A) data were reported, which are related to the lack of geographical information on a small number of fishing activities.

- Differences in effort (fishing days) between spatial (table I) and non-spatial (table G) information were detected and are associated with larger vessels and/or active gears that operate on more than one c-square at the same date.

- In some cases, landings by species were reported with the monetary value of zero landings. These situations are often related to by-catches, fish whose sale is not authorized (confiscations, minimum prices, hygiene and health conditions), or processed fish.

- The data submitted to FDI data call are mostly consistent with the Eurostat data, although FDI database does not have the Azores outermost region data and Madeira outermost region from 2016 to 2021.

The biological data checks identified some inconsistencies in the SOP results used to cross-check landing values in Table A with the ones reported in Tables E and F. The problem was identified, corrected and reuploaded during the FDI meeting. The data checks also detected the cases where the total weight of discards from certain species is higher than the landings. This is not an error, it occurs for species with no or low commercial value, with a ban on landing below the minimum size, and species whose quota has ended.

Due to the overlap of the data correction phase with the holiday period, which prevented the timely amendment of the data submitted, some data had to be corrected during the meeting.

**Confidentiality**

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

confidential.

*Problems encountered*

The large amount of data at a high level of disaggregation makes this data extremely difficult and time-consuming. Also, the fact that the outermost regions cannot submit the data autonomously makes it difficult to operate the data call at national level.

Portugal has submitted 2013 to 2022 transversal, spatial and biological data from the mainland. Madeira OMR had provided 2013, 2014 and 2022 transversal, spatial and biological data. The Azores OMR did not provide any data. This led to all the data from the Azores, and 206 to 2021 from Madeira OMR being deleted from the FDI database. It was not possible to resubmit the historical data that had been uploaded in the previous data calls since the structure of the tables was not the same as in the 2023 data call.

The high disaggregation of data raises issues relating to data confidentiality once the institutions that collect and process the data are covered by statistical confidentiality to safeguard the privacyof citizens, so that direct or indirect identification of the natural and legal persons concerned isnot allowed according to the National Law. Whenever there is an aggregation of data that could identify an individual or legal person, it is not published without the express consent of theperson. The rule we apply is that each data aggregation must have at least 3 records.

For effort calculation, logbook information is used to determine 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.

Due either to errors in the reporting of fishing operations by ship owners or to the assumption of the c-square of the landing port coordinate as the fishing activity localization, points on land are often reported. It would be useful if the DCF checks could list the points on land reported in the data call to correct that data.

The fact that National Correspondent's credentials are required to access the Validation tool prevents the different data providers from validating their data, leading to an additional burden inthe national data submitter.

**Other comments if relevant**

The proximity of the deadline of the data call to the holiday period makes it difficult to correct thedata after data submission.

**Impact of Covid on DCF sampling programme**

In 2020 and 2021, the commercial sampling in ICES 27.9.a was affected by the COVID-19 pandemic: onboard sampling in Portuguese waters of ICES 27.9.a was suspended in March 2020, and was only resumed in Q4 of 2021 by scientific observers from an external company hired for the purpose. The low sampling coverage in those years hindered the use of the data for discards estimation purposes.

**A1.19 ROMANIA – NO INFORMATION PROVIDED**

**A1.20 SLOVENIA**

**Methodology**

The methodology used for the data collection for FDI data call combines information from three main resources:
- Loog books,
- Sales notes,
- National surveys.

**Fishing activity data** (Capacity, effort and landings data) are collected for all vessels active at any point in time of the year.

**Capacity data** are collected for all registered vessels of reference year. Fishing capacity data are part of the Fleet Vessel Register Module of the Slovenian information system InfoRib. The Fleet Register data is integrated with other sources of data in order to obtain data at the level of fleet segments and at the level of métiers.

**Effort data** is collected for all vessels active at any point in time of the reference year. The data is collected from the logbooks. All Slovenian vessels, also those under the 10 meters, are obligated to submit the logbooks.

The target populations for the **landing data** are all vessels from the Slovenian Fleet (also those under 10 meters LOA). The data is collected from the logbooks and sales notes. The data on the quantity of landings is collected from the logbooks, while the price of the fish is collected from the sales notes. On the basis of both kinds of data the value of all landings in Euros per species is calculated and namely for the metiers as well as for fleet segments.

**Partition of data** is based on on-board sampling programme conducted under the DCF. Discards are available just for those métiers that have been sampled. 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".

**Spatial data** on landings and effort are submitted using 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. Effort data by rectangle are obtained from the logbooks information. The data by rectangle is derived from logbooks for all of the fleet. The catch was allocated based on the landing port.

## Quality control of data

Quality control (QC) in data management involves applying methods and processes to assess whether data meet defined quality goals and criteria. Data are evaluated against specific quality objectives, and rapid data scanning methods are used to identify records that meet or fail to meet these criteria. QC primarily focuses on two types of primary data: fishery-related data, including biological stock and metier-related data, and research survey-related data. The aggregated data, derived from meticulously checked primary data, is considered accurate. The QC process includes assessing qualitative and quantitative indicators and other quality checks, with SQL scripts facilitating efficient data analysis and validation. Notably, quality indicators themselves are not stored in a database but are employed within the QC process to ensure data quality.

## Qualitative Indicators

- **Availability:** Data must progress through a defined workflow from "data input" to "production" to ensure completeness and reliability.
- **Accessibility:** Data becomes accessible only after passing quality checks, ensuring it's reliable for analysis.
- **Missing Values:** Database constraints and rules prevent missing values, maintaining data completeness.
- **Duplicated Records:** Constraints and validation checks prevent duplicate records at the database level, while thorough checks are needed during data aggregation.
- **Coding:** Internal codes are translated for different reports or systems to enhance data communication and interoperability.
- **Accuracy of Spatial Data:** Visual verification and datum transformation ensure accurate spatial data.
- **Data Anomalies:** Regular updates to relationship models correct data anomalies, improving data precision.

## Quantitative Indicators

- **Standard Deviation:** Measures data variability and identifies potential outliers, aiding data consistency assessment.
- **Coefficient of Variation (CV):** Compares variability of different data attributes, helpful for data quality comparison.
- **Sample Size:** Larger sample sizes provide more reliable data quality assessments, reducing sampling bias.
- **Sampling Rate:** Higher sampling rates lead to more representative samples and better insights into data quality.
- **Response Rate:** Higher response rates indicate better data quality in survey data, reducing non-response bias.
- **Coverage Rate:** A higher coverage rate implies a more comprehensive representation of the target population in the database, improving data quality and generalizability.

## Data availability

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

**Coverage**

Slovenia continued to use a census sampling strategy, so the provided data covers the whole Slovenian fleet, which operates only in the Adriatic Sea. There are no gaps in the data collection or data submission.

**Comparison with Eurostat data**

Data regarding landing volume provided to STECF FDI were similar to Eurostat data. On the other hand, capacity data (number of total vessels) differ because FDI data contains only active vessels data while Eurostat data include also inactive vessels.

**Problems encountered**

No problems encountered in the preparation of the files.

**Other comments if relevant**

No other comments.

**Impact of Covid on DCF sampling programme in 2022**

No impact on surveys or results

**A1.21 FINLAND**

**Methodology**

**Transversal data** (Logbooks, monthly coastal journals and sales notes)

Landings and discards catches were retrieved from logbook database KAKE maintained by national control agency. Fishers using a vessel less than 10 meters in length declare their monthly catches by a coastal fishing journal. Transversal data 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.

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. Discarding catches back to the sea is prohibited in Finland. Trawl fisheries consist of pelagic species and all catches are landed for industry purposes or human consumption. Discards, for example fish damaged by seals occur mostly in coastal fisheries and 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.

Statistical calculations for effort are done using SAS. 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 the number of gears varies. This variation is considered in fishing gear days (trap net, gillnet and trawl days), for example five days of fishing with ten nets totals fifty net days.

Landing values are based on prices derived from sales notes available from the control agency database. Average prices calculated from sales notes per each subdivision are multiplied by weight.

Finland has no long-distance fisheries. All catches are caught in the Baltic Sea the EEZ indicator indicating NA.

**Biological data**

Biological data under the EU multiannual program is collected following three sampling methods.

1) Onshore samples targeting pelagic species are collected onshore from selected vessels or fishers. The selection of pelagic trawlers and pelagic fyke-nets fishers is done randomly since Q4/2018. The selection of these vessels is done as unequal probability random sampling with replacement based on previous year catches. Refusals to obtain a sample from selected vessels are reported in table B. In case of refusals after contacting a vessel for logistical or practical reasons by observer or industry the sampling has been postponed to the next possible trip. Only actual rejected samples occur in table B as refusals.

2) Onshore samples targeting freshwater species gillnet and fyke-net fishery are selected on judgement sampling to reach a certain quota. Refusals are not reported on these samples.

3) Anadromous species sampling program is carried out as self-sampling among selected fishers. Anadromous species data is target species individual data from which length and age are provided. The number and weight of anadromous fish caught are reported by fishers to logbooks.

There is no regular onboard sampling program. Quality indicators have not been provided since discard catches are not estimated based on sampling programs.

Workflows merging biological data to catch domains are implemented using R.

**Data availability**

Natural Resources Institute Finland (Luke) carrying out fisheries data collection program in Finland has direct access to transversal data from control agency database. All logbook data are stored to logbook database by the end of each year. Coastal fishing journals reported on paper take few months after each year to be stored. Sampling database containing all biological data is developed maintained in Luke. Sampling data is available after each sample is taken. Age determination information is available online after each sample is examined.  All data was available well before FDI data call for assessment purposes.

**Coverage**

Data from Finnish fleet from the period 2013-2022 including all species are uploaded to FDI database within data call deadline. Landings and discards data include all species reported to logbook database. Length and age distribution data was provided for all fish species sampled under the EU multiannual program in Finland.

Minor discrepancies between effort and landings numbers occur when the respective info on effort has not been available.

If a vessel has fished in several rectangles on the same day, the fishing day has been allocated to the rectangle from which the most catch was taken. Therefore, the data contains some spatial catch data per rectangle without fishing days. For the same reason, the fishing days per rectangle and the fishing days per ices-subdivision differ slightly.

**Comparison with Eurostat data**

FDI data call data is the data concerning Finnish marine commercial fishery matching national official statistics numbers. Eurostat catch data includes both commercial and recreational catches by species and subdivisions. Catches are higher in Eurostat data.

Vessel numbers reported to FDI are active vessels each year i.e. the vessel that has reported effort or catches during a year. Vessel numbers in Eurostat are all registered vessels. For that reason, vessel numbers are higher in Eurostat data.

**Comparison with AER data**

In AER data fleet segments are clustered in order to provide sensitive economic data. Same clustering is used in FDI tables. This causes minor mismatches reporting average lengths in table J and total number of vessels in table G in case these values deviate from the clustered vessel range boundaries or numbers.

**Publication of confidential data**

Data call tables include confidential information, which is marked by 'Y' in confidential column. These data contain information from less than three individual vessels.

**Problems encountered**

The covid-19 pandemic had no or minor impact on the sampling in 2020-2021. Refusals are reported on Table B. Fleet segment clustering done in AER has also been provided for FDI transversal data sets which can result mismatches in average vessel length values and number of vessels.

**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. Vessels were randomly selected for sampling with unequal probability, based on the fishing activity in the previous year, within each sampling frame. The selection was carried out without replacement. The sampling frames were based on fishery, area and quarter and are reflected in the "Domain discards" in the FDI data.

The discard estimation (raising) was carried out according to the national sampling schemes. 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.

EEZ indicator was derived from positions in logbooks/coastal journals, per fishing operation. EEZ borderlines were derived from https://www.marineregions.org.

Effort was calculated using the fecR package.

Métiers were defined by a script developed by the "RCG ISSG Métier and transversal variable issues".

Quarter and year were defined by the landing date of the trip.

Refusal rates in Table B 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. 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 years earlier than 2016. 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. In 2021, the covid-19 pandemic resulted in ad-hoc sampling in the on-board sampling programme, and hence no refusal rate could be provided for this year.

**Data availability**

Data was provided by the data call deadline.

**Coverage**

Landings data was provided for all species 2013-2022.

Discard estimates were provided for all species caught in fisheries sampled under the Swedish on-board sampling programme 2013-2022, but due to the covid-19 pandemic the discard sampling coverage in 2020 and 2021 was poor (see "Problems encountered").

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 2013-2022.

Refusal rate was provided for the main sampling frames for 2016-2020 and 2022, while other parameters in Table B were provided for 2013-2022.

### General comments

The covid-19 pandemic had a severe impact on the Swedish discard sampling coverage (see "Problems encountered").

In the current FDI data call BMS landings are requested as part of the "Landings" fraction. 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).

The number of vessels submitted to FDI is slightly higher that the number of vessels in Eurostat data, for all years. This is likely due to the fact that Eurostat only considers the number of vessels at the end of the year, while the FDI data includes vessels found in the fleet at any time of the year.

### *Publication of confidential data*

For the submission of FDI data in 2023 no data was considered confidential in the Swedish data set.

### Problems encountered

### Problems related to data collection

The covid-19 pandemic had a large impact on the Swedish on-board discard sampling in 2020 and 2021 and the Swedish discard sampling coverage was severely affected. No on-board observer trips were carried out in quarter two, three and four for most sampling programmes in 2020, or in quarter one and two in 2021. Sampling programmes relying on self sampling were still carried out during the year, but for most fisheries no discard estimates could be provided for a large part of 2020 and 2021.

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. For years before 2015 the documentation of refusals was not sufficient for calculating refusal rates. In 2021 difficulties due to the covid-19 pandemic lead to ad-hoc sampling in the on-board sampling programme. Hence no meaningful refusal rate could be provided for 2021.

### Other comments if relevant

In 2023, the whole time series for Tables A, G, H and I (2013-2022) was resubmitted in order to:

1) Provide EEZ indicator for the whole time series
2) Provide métiers derived in accordance with the work of the "RCG Intersessional Subgroup for Métier and transversal variable issues".

**ANNEX 2**

**Table A2.1**: Summary of changes in the methods used by Member States to respond to the FDI data call

| Country | Partition biological data | Metier definition | Spatial allocation of landings | Effort calculation | | | | Quality indicators - CV/CI |
|---|---|---|---|---|---|---|---|---|
| | method | new metier list (introduced in 2023) | except UK EEZ indicator (introduced in 2022) | method | fecR package used | Maintenance fecR package requested | Nicosia principles applied | introduced in 2022 |
| Belgium | no change | no issues | no change | no change | yes | yes | yes | not calculated |
| Bulgaria | no change | no issues | no change | no change | no | | yes | not calculated |
| Denmark | no change | no issues | | no change | no | yes | yes | not calculated |
| Estonia | no change | no issues | no change | no change | no | no | yes | not calculated |
| Ireland | no change | no issues | no change | no change | yes | yes | yes | calculated |
| Greece | no change | no issues | no change | no change | no | | | |
| Spain | no change | no issues | no change | no change | no | | yes | calculated for ICES areas but not submitted |
| France | no change | no list for OFR small-scale fleets | no change | no change | no | | yes | |
| Croatia | no change | no issues | no change | no change | no | no | yes | not calculated |
| Italy | no change | no issues | no change | no change | no | no | yes | not calculated |
| Cyprus | no change | no issues | no change | no change | no | | | not calculated |
| Latvia | no change | no issues | no change | no change | yes | yes | yes | not calculated |
| Lithuania | no change | no issues | no change | no change | yes | yes | yes | calculated and submitted |
| Netherlands | no change | no issues | no change | no change | yes | | yes | Issue with providing the CV and CIs on the FDI domain level |
| Poland | no change | no issues | | no change | no | yes | yes | Several approaches to calculate quality indicators has been tested. Bootstrap |

| Country | Partition biological data | Metier definition | Spatial allocation of landings | Effort calculation | | | | Quality indicators - CV/CI |
|---|---|---|---|---|---|---|---|---|
| | method | new metier list (introduced in 2023) | except UK EEZ indicator (introduced in 2022) | method | fecR package used | Maintenance fecR package requested | Nicosia principles applied | introduced in 2022 |
| | | | | | | | | method will be tested before 2024 data call submission. |
| Portugal | no change | no issues | no change | no change | no | yes | partly | calculated but not submitted |
| Slovenia | no change | no issues | no change | no change | no | | yes | not calculated |
| Finland | no change | no issues | no change | no change | no | yes | yes | not calculated |
| Estonia | no change | no issues | no change | no change | no | yes | yes | not calculated |

## 4  LIST OF ELECTRONIC ANNEXES

Electronic annexes are published on the meeting's web site on:
https://stecf.jrc.ec.europa.eu/web/stecf/ewg2310

List of electronic annexes documents:

EWG-23-10 – Annex 3 – Exemptions coding tables

EWG-23-10 – Annex 4 – Exemptions data extract

EWG-23-10 – Annex 5 - Maps of effort and landings


## 5  LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on:
https://stecf.jrc.ec.europa.eu/web/stecf/ewg2310

List of background documents:

EWG-23-10 – Doc 1 - Declarations of invited and JRC experts (see also section … of this report – List of participants)

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