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Scientific, Technical and Economic Committee for Fisheries (STECF)
-
Fisheries Dependent Information FDI
(STECF-22-10)

Edited by Antonella Zanzi, Arina Motova-Surmava & Zeynep Hekim

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Joint
Research
Centre

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CONTENTS

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 2022 winter plenary meeting.

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) - Fisheries Dependent Information FDI (STECF-22-10)

Request to the STECF

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

STECF comments

EWG 22-10 met physically from 12-16 September 2022 at Ispra, Italy. The meeting was attended by 30 experts in total, including 5 STECF members and 3 JRC experts. The following STECF observations, comments and conclusions are based on the EWG 22-10 report and on the presentation of the EWG 22-10 outcomes given to PLEN 22-03 by the co-chairs.

STECF considers that the EWG 22-10 fully addressed all their Terms of Reference.

The **Terms of Reference for the EWG 22-10** were:

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

1.1 As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported online via the Data Transmission Monitoring Tool (DTMT) available at https://datacollection.jrc.ec.europa.eu/web/dcf/dtmt. Such issues should be reported in full within 2 weeks of the end of the EWG.

1.2 Review outputs of ad hoc contract 1 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.

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

Based upon the previous work and method established in STECF EWG 20-10 and STECF EWG 21-12, and the output of ad hoc contract 1:

2.1 STECF is asked to provide figures for landings and discards in 2021, 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 2023.

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 2023.

2.3 Where there is insufficient discard data for the above task, the STECF is asked to provide **estimated catches** (landings + discards[1]) for 2021. 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 results of ToR 2.1 and 2.2 of the EWG 21-10 and ToR 6.1 in EWG 21-12 and agree the format of the Table A and biological data (FDI Tables C, D, E and F) to be publicly disseminated in the future. Discuss the results of the ad-hoc contract 2 of the development for a script to support the dissemination of the data.

3.2 Agree on format of dissemination of refusal rate data

3.3 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, access feasibility to provide updated time series

4.1. If possible, to explore the possibilities for next years' datacall to request the whole time series with the new metier codes;

4.2 Inclusion of UK EEZ indicator for areas that have a borderline between EU and UK. The FDI data call requested this reporting with EEZ indicator for UK for 2021 in the 2022 data call. The UK EEZ indicator needs to be asked for the whole time series in next years' data call.

EWG 22-10 primarily checked the coverage and quality of data and information submitted under the 2022 FDI data call and responded to specific requests for information regarding discard estimates for specific groups of vessels that may be exempted from the landing obligation in 2022.

STECF observes that the EWG reported a continued improvement in data coverage and quality provided by Member States resulting in a minor number of problems identified by the automatic data checks carried out by the JRC before the meeting.

The following topics were discussed in detail during the PLEN 22-03:

STECF notes that unresolved issues that need to be further addressed by Member States were recorded in the Data Transmission Monitoring Tool (DTMT).

STECF observes that the methodology used in the ad hoc contract (# 2251) to provide data on landings and discards at a level of aggregation corresponding to the fleet, area and gear type as specified in each anticipated exemption contained in the individual discard plans for 2023, was appropriate and identical to the one used in previous years.

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

STECF observes that the script developed in the ad hoc contract (# 2252) to merge table A containing catch data and the biological tables was appropriate and should be disseminated widely despite requiring some further development.

STECF agrees with the EWG 22-10 conclusions that disseminating the script will help end users to merge table A with the biological tables. It will still maintain the underlying assumptions of the national raising procedures and avoid any false assumptions of length/age composition availability at a very fine resolution. This script is available in Annex 4 of the EWG 22-10 report and should be made publicly available as an electronic annex, noting that the script is still considered to be under development.

STECF observes that a comprehensive set of maps of spatial effort and landings were produced for all fishing regions and major gear types. They were included in Annex 5 of the EWG report and are available at the EU level for public access on the STECF website: https://stecf.jrc.ec.europa.eu/dd/fdi.

STECF agrees with the EWG 22-10 proposal to update the FDI data call to account for the new métier codes agreed by the RCGs, which is managed by the RCG ISSG on Métier and transversal variable issues. This should bring alignment between métier codes used by ICES and STECF. Based on a questionnaire that was conducted during the EWG 22-10, all Member States indicated that it is feasible to resubmit the historical data (2013 – 2021) according to the updated list of métier codes. STECF acknowledge that the outcomes of these new metiers, and the quality of the historical data would need to be assessed and potentially improved during an additional methodology meeting proposed for 2023.

STECF notes the advantage of having the UK EEZ indicator provided in the FDI dataset, avoids potential additional data calls to Member States, (i.e., Non-Quota Species data call). EWG 22-10 concluded that it would be feasible for Member States to provide this information for the full time series (2013 - 2021). However, STECF notes that not all Member States use the same approach to identify fisheries within the UK EEZ. Although this methodology is detailed within the national chapters of the EWG 22-10 report, STECF acknowledges that the outcomes of these methodologies, and the comparability of the historical data would need to be assessed and potentially improved during the additional proposed methodology meeting.

STECF supports the proposal to hold a methodology meeting every second year, as requested by the EWG. These methodology meetings form an essential pillar to the functioning of the EWG as they facilitate the development of methods used to answer the data call and check the quality of the data. The experience of having such a meeting in 2021 ensured that such dedicated methodology meetings have clear positive effects on the quality of the data (and subsequent advice), and significantly reduce the time required for data checking during the advice meeting. These methodology meetings also provide a space in which historical data can be explored and investigated for stability and consistency across years. This feature of the meeting will become increasingly important as FDI will request more historical years in future data calls (pre-2013).

Since the 2020 FDI data call, no biological data were requested from the Mediterranean and Black Seas. STECF believes that a re-introduction of those data would make the FDI database more valuable in the future. STECF observes that JRC proposed to do a preliminary screening of the scripts already developed by the STREAM (PLEN 21-03) and RDBFIS projects and to report outcomes of this exercise to STECF. STECF agrees that the existing scripts already developed by the STREAM and RDBFIS projects will be screened by JRC to identify if they can be used to transfer the biological data from the Mediterranean and Black Seas dataset to the format used by the FDI database. Based on the outcomes of this preliminary screening, it will be possible to understand if the scripts are mature enough to be used or if there is still the need for an ad hoc contract to address unresolved issues and further development.

STECF conclusions

STECF concludes that the EWG 22-10 appropriately addressed all ToRs defined.

STECF supports the updates to the FDI data call proposed by EWG 22-10 and supports the proposal to request 2022 data and a resubmission of data from 2013-2021 with proposed EEZ indicator and improvements to métier definitions.

STECF concludes that it would be valuable to have 2 meetings in 2023 as in 2021 to follow up on methodological development needed (i.e. EEZ partitioning methodology, review quality indicators submitted, metiers, etc.) and to review progress on comparability between FDI and AER data calls.

STECF concludes that the script to merge the catch data and the biological tables should be published this year along with clear guidance and the development continued in 2023 by the FDI EWG.

STECF concludes that completeness of the FDI database would be significantly improved by incorporating the Mediterranean and Black Sea biological data. Therefore, if the need to have more work done on the already available scripts will be confirmed by the preliminary screening carried out by JRC, STECF reiterates the recommendation of PLEN 21-03 to use an ad hoc contract to translate the Mediterranean and Black Sea data to the FDI format in order to speed up the progress.

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

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REPORT TO THE STECF

EXPERT WORKING GROUP ON Fisheries Dependent Information FDI (EWG-22-10)

Ispra, Italy, 12-16 September 2022

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

1 INTRODUCTION

The STECF EWG 22-10 met during 12 – 16 September 2022 at Ispra, Italy. The meeting was opened at 9:30 on 12 September and was adjourned at 16.00 on 16 September 2022. Working conditions provided were considered good.

1.1 Terms of Reference for EWG-22-10

DG MARE focal person: Evelien Ranshuysen (D3), TBD (C5), Christoph Priebe (C1)7

JRC focal person: Zeynep Hekim

Chairs: Arina Motova and Antonella Zanzi

Background information
EWG 22-10 Evaluation of Fisheries Dependent Information for European Fleets to review the data transmitted by Member States under the 2022 FDI data call to judge:

a) If data submitted is complete in terms of areas fished, types of fleet segment and gear operated and species identified;
b) 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 reported online via the Data Transmission Monitoring Tool (DTMT) available at: https://datacollection.jrc.ec.europa.eu/web/dcf/dtmt.
Such issues should be reported in full within 2 weeks of the end of the EWG.
1.2 Review outputs of ad hoc contract 1 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.

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

Based upon the previous work and method established in STECF EWG 20-10 and STECF EWG 21-12, and the output of ad hoc contract 1:

2.1 STECF is asked to provide figures for landings and discards in 2021, 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 2023.
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 2023.

2.3 Where there is insufficient discard data for the above task, the STECF is asked to provide **estimated catches** (landings + discards[2]) for 2021. 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 results of ToR 2.1 and 2.2 of the EWG 21-10 and ToR 6.1 in EWG 21-12 and agree the format of the Table A and biological data (FDI Tables C, D, E and F) to be publicly disseminated in the future. Discuss the results of the ad-hoc contract 2 of the development for a script to support the dissemination of the data.

3.2 Agree on format of dissemination of refusal rate data

3.3 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 provide updated time series

4.1. If possible, to explore the possibilities for next years' data call to request the whole time series with the new metier codes;

4.2 Inclusion of UK EEZ indicator for areas that have a borderline between EU and UK. The FDI data call requested this reporting with EEZ indicator for UK for 2021 in the 2022 data call. The UK EEZ indicator needs to be asked for the whole time series in next years' data call.

2 DATA PROVISION AND CHECKS

2.1 DCF FDI data call 2022

The DCF Fisheries Dependent Information (FDI) data call 2022 opened on 1st June 2022 with the legal deadline on 30th June 2022 and the operational deadline on 29th August 2022.

The 2022 FDI data call was consistent with the comments and suggestions from the EWG 21-12 (see the STECF report of the EWG 21-12, chapter 4). In particular, the following changes proposed during the EWG 21-12 were implemented in the 2022 data call:

- To improve the matching process between tables A with C,D,E and F the domain definition was refined to include NEP_SUB_REGION when reporting *Nephrops*.
- To add information on the coverage rate of discard estimates, additional columns were recommended to be added to TABLES C, D, and K:
    - **TOTAL_TRIPS**: The total number of trips that relate to domain; a number should only be given only if it relates to this domain, otherwise use 'NK'.
    - **DISCARD_CV**: the coefficient of variation of the estimate based on the sample available for the strata considered (i.e., DOMAIN_DISCARDS) and the sampling

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

design. This is calculated for the weight of discards, and is reported as a rate <1. Mandatory. NK if not known.

- **DISCARD_CI_UPPER**: the upper confidence limit of the estimate based on the strata sampled (i.e., DOMAIN_DISCARDS), 95% confidence interval (i.e., the confidence interval that allows us to be 95% confident that the real value is contained into; is between the upper and the lower confidence limit), supplied in weight. Mandatory. NK if not known.
- **DISCARD_CI_LOWER**: the lower confidence limit of the estimate based on the strata sampled (i.e., DOMAIN_DISCARDS), 95% confidence interval (i.e., the confidence interval that allows us to be 95% confident that the real value is contained into; is between the upper and the lower confidence limit), supplied in weight. Mandatory. NK if not known.

- One column was renamed:
  - **NO_SAMPLES:** The number of trips that relate to discards; a number should be given only if it relates to this domain, otherwise use 'NK', was renamed to **TOTAL_SAMPLED_TRIPS:** The total number of sampled trips that relate to domain; a number should only be given only if it relates to this domain, otherwise use 'NK'.
- Member States did not submit data to Table B for two reasons; they do not have a probabilistic sampling scheme; or they do not want to share their data. The EWG suggest that the first sentence of this table should be changed to:
  - Member States should only submit data to this table if their sampling design can be considered a probability-based vessel selection design. In the absence of a probability-based vessel selection design please submit 'NK'.
- Appendix 3 was updated to clarify the definition of fishing technique (FISHING_TECH), in particular how they should be allocated to individual vessels.

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 from EU Member States (EU27) for 2 years only, 2021 and 2013 for all the tables except table H and table I that contain spatial information. For Mediterranean and Black Sea regions (GFCM GSAs), spatial data were requested for 2021 only; for these countries, data for year 2013 were welcomed if available, but the submission was not compulsory.

Data confidentiality declaration

To protect confidential data used during the EWG 22-10, the experts signed the following declaration at the beginning of the meeting.

In order to answer the term of reference of the EWG 22-10, the Fisheries Dependent Information (FDI) data provided by Member States in the context of the DCF FDI 2022 data call will be used. The FDI data call requests data at a detailed level; for this reason, it is possible for Member States to mark data as confidential.
I hereby declare that I was informed by the STECF secretariat and the chairs of the EWG 22-10 that the dataset used during the EWG contains some confidential data and that access to and use of the dataset is only permitted in the EWG context. Consequently, all DCF FDI datasets shall be removed 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 22-10 report.
Signing the present declaration, I acknowledge that I was informed on the above.

2.2 Data checks on uploads and data evaluations before EWG 22-10

Timeliness and coverage

All Member States submitted data for all the requested tables by the legal deadline of the data call except one Member State which submitted the biological tables after the legal deadline (see Figure 2.2.1).

Country	TABLE_A	TABLE_B	TABLE_C	TABLE_D	TABLE_E	TABLE_F	TABLE_G	TABLE_H	TABLE_I	TABLE_J	TABLE_K
Belgium	28/06/2022	21/06/2022	28/06/2022	29/06/2022	29/06/2022	29/06/2022	14/06/2022	21/06/2022	14/06/2022	16/06/2022	29/06/2022
Bulgaria	24/06/2022	24/06/2022					24/06/2022	24/06/2022	24/06/2022	24/06/2022	
Cyprus	29/06/2022	27/06/2022					29/06/2022	29/06/2022	29/06/2022	23/06/2022	
Germany	30/06/2022	28/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022	
Denmark	29/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	30/06/2022
Spain	28/06/2022	29/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	27/06/2022	27/06/2022	28/06/2022	28/06/2022	
Estonia	30/06/2022		30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	
Finland	01/06/2022	01/06/2022	08/06/2022	08/06/2022	14/06/2022	14/06/2022	02/06/2022	08/06/2022	08/06/2022	02/06/2022	
France	28/06/2022	29/07/2022	29/07/2022	29/07/2022	29/07/2022	29/07/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	
Greece	30/06/2022	29/06/2022					29/06/2022	29/06/2022	29/06/2022	29/06/2022	
Croatia	30/06/2022	30/06/2022					30/06/2022	30/06/2022	30/06/2022	30/06/2022	
Ireland	16/06/2022	22/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022	
Italy	29/06/2022	29/06/2022					29/06/2022	29/06/2022	29/06/2022	29/06/2022	
Lithuania	22/06/2022	22/06/2022	24/06/2022	24/06/2022	22/06/2022	22/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022	
Latvia	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022	
Malta	28/06/2022	28/06/2022					28/06/2022	30/06/2022	30/06/2022	28/06/2022	
Netherlands	29/06/2022	28/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	28/06/2022	28/06/2022	30/06/2022	30/06/2022
Poland	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022
Portugal	27/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	30/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022	
Romania	08/06/2022	08/06/2022					08/06/2022	08/06/2022	08/06/2022	08/06/2022	
Slovenia	15/06/2022	15/06/2022					15/06/2022	17/06/2022	17/06/2022	17/06/2022	
Sweden	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	

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).

As shown in Figure 2.2.2, some Member States re-uploaded data before the operational deadline. Some Member States re-uploaded data also during the EWG; however, compared to previous years, the number of re-uploads during the EWG was lower, allowing experts more time to work on the ToR's assigned to the EWG.

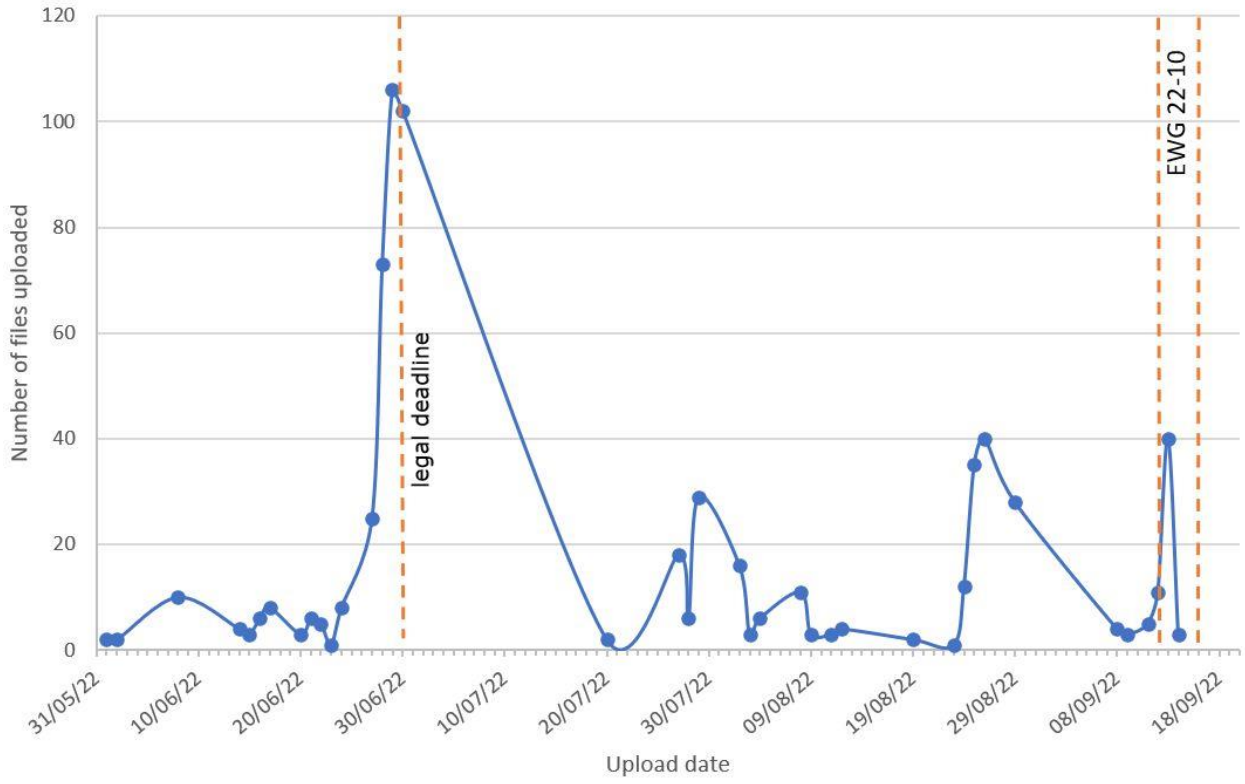


Figure 2.2.2: Uploading progress: the graph shows the number of datasets (i.e., files Excel) uploaded over the time during the FDI data call and the EWG 22-10.

The coverage of discards data in table A is generally low for all the years present in the FDI dataset. For all the 9 years, on a total of 4,441,942 rows, there are 540,380 (12%) entries with discards greater than 0; 312,611 (7%) entries with discards equal to 0; and 3,588,951 (81%) entries with discards not known (NK code).

Considering the landings for 2021: from a total of 3,679,647 tonnes landed, for 327,556 tonnes (9%) of landings the corresponding discards was reported greater than 0; discards was reported equal to 0 for 526,658 tonnes (14%) of landings; and discards is not known or sampled for 2,825,433 tonnes (77%) 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.

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	520,399	12.60	531,541	12.87	3,078,360	74.53	4,130,300
2014	719,898	13.65	493,085	9.35	4,059,694	76.99	5,272,677
2015	645,543	12.33	629,210	12.02	3,961,098	75.65	5,235,852
2016	650,316	12.62	663,847	12.89	3,837,001	74.49	5,151,165
2017	596,657	10.89	734,031	13.39	4,149,523	75.72	5,480,211
2018	593,868	11.06	806,198	15.02	3,968,284	73.92	5,368,350
2019	519,970	10.81	734,929	15.28	3,556,332	73.92	4,811,231
2020	343,393	7.46	539,045	11.70	3,722,841	80.84	4,605,279
2021*	327,556	8.90	526,658	14.31	2,825,433	76.79	3,679,647

* 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, France, Greece, Ireland, Italy, Romania and Spain). 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 2021 (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	17,928	17,374	554	3.09	2021
BGR	8,919	8,919	0	0	2021
CYP	1,381	1,381	0	0	2021
DEU	175,477	172,709	2,768	1.58	2021
DNK	46,9314	46,7609	1,705	0.36	2021
ESP	806,731	789,452	17,279	2.14	2021
EST	69,554	55,501	14,053	20.20	2021
FIN	97,262	97,262	0	0	2021

Country code	Landings from table A (tonnes)	Landings from table H (tonnes)	Difference between the tables (tonnes)	Difference %	Year
FRA	515,432	385,722	129,710	25.17	2021
GRC	48,201	33,596	14,605	30.30	2021
HRV	61,951	61,954	-3	0	2021
IRL	248,953	201,969	46,984	18.87	2021
ITA	145,475	438,110	-292,635	-201.16	2021
LTU	96,774	96,774	0	0	2021
LVA	97,896	97,896	0	0	2021
MLT	2,493	2,493	0	0	2021
NLD	301,052	300,446	606	0.20	2021
POL	187,735	187,735	0	0	2021
PRT	171,635	152,929	18,706	10.90	2021
ROU	3,127	2,096	1,030	32.97	2021
SVN	103	103	0	0	2021
SWE	152,243	152,243	0	0	2021

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 Greece, Ireland, Italy, Romania, Slovenia and Spain); in Table 2.2.3 the comparison of the totfishdays variable provided for 2021 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 2021 (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	12,241	11,959	282	2.30	2021
BGR	23,040	23,040	0	0	2021
CYP	183,259	183,259	0	0	2021
DEU	8,6819	8,6971	-152	-0.18	2021
DNK	73,351	73,350	1	0	2021
ESP	795,872	701,583	94,289	11.85	2021
EST	65,353	64,134	1,219	1.87	2021
FIN	72,149	75,011	-2,862	-3.97	2021
FRA	567,026	560,184	6842	1.21	2021
GRC	1,507,409	75,157	1,432,252	95.01	2021
HRV	293,463	299,569	-6,106	-2.08	2021
IRL	74,683	42,682	32,001	42.85	2021
ITA	1,233,226	360,546	872,680	70.76	2021
LTU	4,942	4,940	2	0.04	2021
LVA	11,550	11,549	1	0.01	2021
MLT	25,458	25,455	3	0.01	2021
NLD	53,914	50,200	3,714	6.89	2021
POL	44,394	44,393	1	0	2021
PRT	272,231	275,006	-2,775	-1.02	2021
ROU	3,383	999	2,384	70.47	2021
SVN	5,250	20,716	-15,466	-249.59	2021
SWE	53,299	53,245	54	0.10	2021

Concerning the refusal data information requested in table B, for 2021 Belgium, Croatia, Estonia, Greece, Italy and Romania did not provide information for this table, while for 2013 information were provided only by 8 Member States.

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 comparison 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 the checks were made available to national correspondents (with access credentials that restricted them to seeing information about their own country only) and the EWG 22-10 experts (with access credentials that allowed them to see information about all countries).

3 RESPONSES TO THE TERMS OF REFERENCE

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

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

The data provided by Member States in response to the 2022 FDI data call has been incorporated into the FDI database, which is hosted by the JRC, and represents the most comprehensive fishery-dependent data set currently available for the EU fishing fleet for the years 2013-2021. Annually a quality control process is applied to this data set. Any quality issues 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. Of 22 Member States, 9 have reported errors. Mainly these errors related to spatial data, and the significant discrepancies between landings and effort reported in Tables A and G.

19 quality or coverage issues with low or medium severity were identified and registered in DTMT. Eleven issues were indicated as recurrent. Issues with very low impact to the outcome of the working group products were not added to DTMT.

Lat year's issues were extracted from the DTMT by the EWG to assess their status and highlight any action required. During EWG meeting, experts defined the current status of these issues. Six of the 26 issues were identified as resolved (through resubmission to the 2022 FDI data call). Two issues were classified as unresolved and 18 issues could not be assessed.

Eight of these 18 unresolved issues which could not be assessed related to the consistency between data reported to the Annual Economic report (AER) and FDI. It was impossible for the EWG to access the progress of this issues due to lack of detailed AER data, and lack of resources (time and experts) during the EWG to rerun the assessment made in 2021 (EWG 21-12). Therefore, to advance improvement in the data quality, EWG 22-10 propose to include a ToR in the next FDI EWG meeting to compare the data provided during AER and FDI data calls.

Ten issues registered to DTMT by EWG 21-12 were relating to spatial data. These were considered unclear or inaccurate by Member States and therefore could not be addressed. The EWG conclude that no further action is required on these issues but stresses there is a need for clear and detailed description of issue registered to DTMT. 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 issues identified during the EWG meeting have not had significant impact on the outcomes of the group work.

Issues with UK data were not considered.

The EWG observed the need to review the process of the purpose and application of the DTMT tool. In cases when follow up is required after assessment of the issues by STECF, DGMARE and the Member State, both must be able to use DTMT to clarify and close issues so 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 (people and time) assessing issues. It is essential to be able to register improvement and close issues identified in the previous years.

3.1.2 Review outputs of ad hoc contract 1 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 (#2252) 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 2023.

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 2023.

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 21-12, 20-10 and EWG 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.

To improve quality and understanding, the EWG also analysed the sources of each Member States discard information (see Table 3.1.2.1). Discard data were derived from scientific sampling programmes by 14 Member States and from logbook information by 3 Member States. 3 Member States obtained the discard information from both scientific sampling programmes and logbooks and two within this group cross checked observer's data with logbooks records. The data call requests for scientific data to be reported to the data call in Table A and this analysis shows progress toward harmonisation in interpretation of the data call compared to previous years. However, there are still three countries that are using logbooks. Different origin of discard data means that it is difficult to make direct comparisons between Member States that use different data sources. 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.

Table 3.1.2.1: Source of discard information used by EU Member States to estimate discards for Table A

Member State	Scientific sampling	Logbooks	Combination of both	Comments
BEL	X			
BGR			X	The provided data is covering both sources. The data from the logbook is for cross check of the data from observers. According to both of them the discards are 0.
CYP			X	All the species for 2021 were collected form scientific observers except for the ALB due to limited on-board sampling
DEU	X			
DNK	X			
ESP	X			
EST		X		
FRA	X			
FIN		X		
GRC	X			
HRV		X		Fishing reports for vessels <10m LoA using passive gears
IRL			X	Scientific estimates form the vast majority of discard data. In cases where unpredictable hotspots are reported by fishers but not

				captured under the sampling plan, logbook registered data is used.
ITA	X			In Eurostat CATCH statistics, discard data are from logbook
LTU	X			
LVA	X			
NLD	X			
POL	X			
PRT	X			
SVN	X			
SWE	X			

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 3.2.1. 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

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 (29th of August, operational deadline), reduced time required to correct data during the STECF EWG 22-10 meeting.

The EWG proposes to ask the Joint Research Centre to open the tool to be used to validate the data for the data call (the Data Validation Tool) at the beginning of the year to allow more time to prepare and correct the data.

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.

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 2021, 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 2023.

General Conclusions

While the EWG attempted to provide discard estimates for each anticipated exemption for 2023 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. All the data extracted is presented in the Tables 1-17 of the Annex 2. 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 12 (Annex 2). 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 below. 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 2023, based on data provided for 2021. The following shortcomings have to be taken into account to avoid misinterpretation of results:

1. The EWG notes that the data call asked for scientific estimates of discards (see also Table 3.1.2.1 for Member States specific data sources used during the 2022 FDI data call). The estimated values based on scientific sampling programs are uncertain (and potentially biased) and do not constitute an official estimate like landings reported in logbooks. Therefore, any estimate provided under ToR 3.2.1 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:

<u>For all areas apart from the Mediterranean Sea (outside area 37):</u>

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

<u>For the Mediterranean Sea (area 37):</u>

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:

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

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

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

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

For 2021, the data submitted in response to the data call amounted to 3,679,647 tonnes of landings, of which 23% (854,635 tonnes) had associated discard estimates. 434,889 tonnes (12%) 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 2).

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. The EWG further notes that all shortcomings in data quality and coverage identified under other ToRs, including issues related to the covid-19 pandemic, also apply to this TOR.

6. 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. It was only clearly stated in some North Sea exemptions that those covered Union Waters. After discussion with DGMARE colleagues the EWG agreed to extract the data for EU fleets operating in ICES Areas creating possibility to narrow down extraction to the EU waters. The Annex 2 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 Tables 3.2.1.1 - 3.2.1.5 for the list of FDI codes associated with exemptions);
2. Exceptions and their parts which contained information that could not be found in the FDI data call (i.e. distance fished from shore, vessel engine power) are highlight in bold red in the summary tables (Tables 3.2.1.1 - 3.2.1.5). Those marked in bold red were either not estimated or estimated using partial data while ignoring missing information.
3. The data for each exemption were extracted from both the FDI database and the database with fill-ins using codes described in the Tables 3.2.1.1 - 3.2.1.5;
4. The information was summarised in two main formats:
    a. Tables with landings and discards reported by MS and estimated for the fleets under exemptions (Annex 2, Tables 1-11)
    b. Tables with FDI data reported and filled in aggregated by species and subregions (Annex 2, Tables 13-17)

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 2 Tables the following abbreviations are used:

- c – data reported as confidential during the data call, if there are more than 4 métiers which are reported by a Member State as confidential, the data are considered not to be

confidential after aggregation, as there would be no possibility to attribute the aggregated catches and identify individual vessels;

- n.a. – not available.

3.2.1.1 Discard estimates by exemption

The estimated discards for fleets likely to make use of anticipated exemptions to the landing obligation in 2023, the details of the anticipated exemptions and associated data availble are given for each region in tables 3.2.1.1 to 3.2.1.5 and in Annex 2 Tables 1-13.

Baltic Sea region

Table 3.2.1.1: The anticipated exemptions for discard plans for 2023 in the Baltic Sea region and the related FDI codes.

	2023											
	Exemption Article	Area	Possible or not	Fishing Techniques	Below MCRS or not	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	Species	Species codes	Procent/MCRS
Survivability	*2018/306, Art 3*	Baltic (IIIb-d)	Partly/Yes	trap nets-creels/pots-fyske nets-pound nets	Yes Plaice: 25 cm	FPO-FYK-FPN	All	All	All	Plaice	PLE	-
	2018/306, Art 3	Baltic (IIIb-d)	Partly/Yes	trap nets-creels/pots-fyske nets-pound nets	Yes Cod: 35 cm	FPO-FYK-FPN	All	All	All	Cod	COD	-

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

North Sea region

Table 3.2.1.2: The anticipated exemptions for discard plans for 2023 in the North Sea region and the related FDI codes.

		2023 - Part 1														
	Exemption Article	Area	FDI EEZ indicator	Description	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	*DR-2020/2014 Art.11.1*	IIa-IIIa-IV	EU	De minimis exemption for fishing vessels using trammel nets and gill nets (GN-GNS-GND-GNC-GTN-GTR-GEN-GNF) in 2a, 3a and 4	Yes	Trammel nets and gill nets	GN-GNS-GND-GNC-GTN-GTR-GEN-GNF		GND-GNS-GNC-GTR-GTN	All	All	All		All	Sole	SOL	3%
	DR-2020/2014 Art.11.2	IV	EU	De minimis exemption for fishing vessels using TBB gear 80-119 mm with Flemish panel in the Union waters of ICES subarea 4	Partly/Yes	Beam trawls	TBB	Yes Sole: 24 cm	TBB	80-119	80D100-100D110-110D120	All	TBBFP	All	Sole	SOL	5%
	DR-2020/2014 Art.11.3	IIIa	EU	Fish bycatch caught in Noway lobster fishery with bottom trawls 70 mm or greater, sorting grid with max 35 mm in Union waters of ICES division 3a	Partly/Yes	Bottom trawls	OTB-OTT-TBN	Yes sole: 24cm - haddock: 27cm - whiting: 23cm - cod: 30cm - saithe: 30cm - hake: 30cm	OTB-OTT-PTB	70-89	70S90-80D100	All	GRID35	CRU	Sole-haddock-whiting-cod-saithe and hake	SOL-HAD-WHG-COD-POK-HKE	4 % of the total annual catches of Nephrops-common sole-haddock-whiting-Northern prawn-cod-saithe and hake
	DR-2020/2014 Art.11.4	IIIa	EU	Fish bycatch caught in Northern prawn trawl fishery with sorting grid-with unblocked fish outlet in Union waters of ICES division 3a	Partly/Yes	Bottom trawls	OTB-OTT	Yes sole: 24cm - haddock: 27cm - whiting: 23cm - cod: 30cm - plaice: 27cm - saithe: 30cm - herring: 18cm	OTB-OTT	>35	32D80	All	GRID19	CRU	sole-haddock-whiting-cod-saithe-plaice-herring-Norway pout-greater silver smelt-blue whiting	SOL-HAD-WHG-COD-POK-PLE-HER-NOP-ARG-ARU-ARY-WHB	5 % of the total annual catches of Norway lobster-common sole-haddock-whiting-cod-saithe-plaice-Northern prawn-hake-Norway pout-Argentina spp.-herring and blue whiting
	DR-2020/2014 Art.11.5	IIIa	EU	Whiting caught in bottom trawls 90-119 mm with SELTRA panels and bottom trawls with a mesh size of 120 mm and above in Union waters of ICES division 3a	Partly/Yes	Bottom trawls	OTB-OTT-TBN-PTB	Yes whiting: 23cm	OTB-OTT-PTB	90-119	80D100-100D110-110D120	All	SELTRA	All	Whiting	WHG	2% of the total annual catches of Nephrops-cod-haddock-whiting-saithe-common sole-plaice and hake
			EU							>=120	120DXX	All	All				
	DR-2020/2014 Art.11.6	IV	EU	Plaice by-catches in the Nephrops trawl fishery in combination with a technical measure (use of SepNep) in the Union waters of ICES subarea 4	Partly / Yes	Bottom trawls		Yes plaice: 27 cm	OTB-OTT-PTB	80-99	80D100	All	SEPNEP	CRU	Plaice	PLE	3 % of the total annual catches of saithe-plaice-haddock-whiting-cod-Northern prawn-sole and Nephrops
	DR-2020/2014 Art.11.7	IVb-IVc	EU	By-catches in the brown shrimp fishery with beam trawls in the Union Waters of ICES divisions 4b and 4c	**Partly**	Beam trawls	TBB	No	TBB		16D32	All		CRU	All species subject to catch limits	USK-HER-COD-LEZ-MON-ANF-MNZ-ANK-HAD-WHG-HKE-WHB-WIT-LEM-BLI-LIN-PLE-POL-POK-TUR-BLL-GHL-MAC-SOL-SPR-HOM-JAX-NOP-ARG-ARU-NEP-PRA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK	6 % of the total catch for **all species subject to catch limits** in those fisheries
	DR-2020/2014 Art.11.8	IV	EU	Ling (Molva molva) for vessels using bottom trawls (OTB,OTT,PTB) with mesh size greater than 120 mm in the Union Waters of ICES subarea 4	Partly/Yes	Bottom trawls	OTB-OTT-PTB	Yes ling: 63 cm	OTB-OTT-PTB	>=120	120DXX	All		All	Ling	LIN	3 % of the total annual catches of ling
	DR-2020/2014 Art.11.9	IVc	EU	Whiting and cod for the vessels using bottom trawls or seines (OTB-OTT-SDN-SSC) of mesh size 70-99mm (TR2) in the Union Waters of ICES division 4c	Partly/Yes	Bottom trawls-demersal seines	OTB-OTT-SDN-SSC	Yes whiting: 27 cm - cod: 35 cm	OTB-OTT-SDN-SSC	70-99	70S90-80D100	All		All	Whiting-cod	WHG-COD	5%-maximum of 2% can be used for cod
	DR-2020/2014 Art.11.10	IVa-IVb	EU	Whiting and cod for the vessels using bottom trawls or seines (OTB-OTT-SDN-SSC) of mesh size 70-99mm (TR2) in the Union Waters of ICES division 4a and 4b	Partly/Yes	Bottom trawls or seines	OTB-OTT-SDN-SSC	Yes whiting: 27 cm	OTB-OTT-SDN-SSC	70-99	70S90-80D100	All		All	Whiting	WHG	4%

Table 3.2.1.2 (continued): The anticipated exemptions for discard plans for 2023 in the North Sea region and the related FDI codes.

		2023 - Part 2														
	Exemption Article	Area	FDI EEZ indicator	Description	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	*DR-2020/2014 Art.11.11*	IV	EU	Whiting caught by beam trawls 80-119 mm in the Union Waters of ICES subarea 4	Partly/Yes	Beam trawls	TBB	Yes whiting: 27 cm	TBB	80-119	80D100-100D110-110D120	All		All	Whiting	WHG	2% of catches of plaice and sole
	DR-2020/2014 Art.11.12	IVb-IVc (only south of 54°N)	All	De minimis exemption for fishing vessels using pelagic trawlers up to 25 m and mid-water trawls (OTM-PTM) in 4b and 4c **south of 54 degrees** north	**Partly**	Pelagic trawls, midwater trawls (up to 25m)	OTM-PTM	No	OTM-PTM	All	All	VL0010-VL1012-VL1218-VL1824	All	All	Herring-horse mackerel-mackerel-whiting	HER-HMM-JAX-HOM-HMC-HMZ-HMG-TUZ-MAC-WHG	1% of the total catches of herring-horse mackerel-mackerel-whiting
	DR-2020/2014 Art.11.13	IIIa-IV	All	Fish bycatch caugt in demersal mixed fishery with trawl (OTB-OTM-OTT-PTB-PTM-SDN-SPR-SSC-TB-TBN) with mesh obove 80 mm **and** caught in Northern prawn trawl fishery with sorting grid (19mm) or device above 35 mm in ICES division 3a and ICES subarea 4	Yes	Trawls	OTB-OTM-OTT-PTB-PTM-SDN-SPR SSC-TB-TBN	No	OTB-OTT-PTB-SDN-SSC-OTM-PTM-SPR	>80	80D100-100D110-110D120-120DXX	All		All	Sprat-sandeel-Norway pout-blue whiting	SPR-SAN-NOP-WHB	1 % of the total annual catches made in mixed demersal fishery and fishery for Northern prawn
									OTB-OTT	>35	32D80	All	No SPECOM*	CRU			
	DR-2020/2014 Art.11.14	IV	All	Ling (Molva molva) for vessels using longlines (LLS) in ICES subarea 4	Partly/Yes	Longlines	LLS	Yes ling: 63 cm	LLS		All	All	All	All	Ling	LIN	3 % of the total annual catches of ling
	DR-2020/2014 Art.11.15	IVb-IVc	All	Horse mackerel in demersal mixed fishery using bottom trawls (OTB-OTT-PTB) with a mesh size 80-99mm (TR2) in ICES divisions 4b and 4c	Yes	Bottom trawls	OTB-OTT-PTB	No	OTB-OTT-PTB	80-99	80D100	All	All	All	Horse mackerel	HOM-JAX-HMG	5% of the total annual catches of horse mackerel
	DR-2020/2014 Art.11.16	IVb-IVc	All	Mackerel in demersal fishery with bottom trawls (OTB-OTT-PTB) of mesh size 80-99mm (TR2) in ICES divisions 4b and 4c	Yes	Bottom trawls	OTB-OTT-PTB	No	OTB-OTT-PTB	80-99	80D100	All	All	All	Mackerel	MAC	5% of the total annual catches of mackerel
	DR-2020/2014 Art.11.17	IV	All	Blue whiting in **industrial pelagic trawler fishery** in ICES subarea 4	**Partly**	Pelagic trawl		No	OTM-PTM	All	All	All	All	SPF-SLP	Blue whiting	WHB	5 % of the total annual catches of blue whiting
	*DR-2022/**XXX** Art.11.18*	IIIa	All	Northern prawn in demersal fishery with trawls (OTB-OTM-OTT-PTB-PTM-SDN-SPR-SSC-TB-TBN) with mesh size above 70 mm with sorting grid 35 mm or equivalent selectivity device and a 80 mm in ICES subarea 4	Yes	Trawls	OTB-OTM-OTT-PTB-PTM-SDN-SPR SSC-TB-TBN	No	OTB-OTT-PTB-SDN-SSC-OTM-PTM-SPR	>70	70S90-80D100-100D110-110D120-120DXX	All	GRID35	All	Northern prawn	PRA	0.01% of the total annual catches in that fishery
		IV	All							>80	80D100-100D110-110D120-120DXX		All				

* This exemption (Art.11.13) only includes the part of the Northern prawn fishery that does not have a SPECON. The SPECON "GRID19" refers to Northern prawn trawls with a sorting grid and an unblocked fish outlet, i.e. the fish retention device is absent/inactive, while the combination of sorting grid-fish retention device does currently not have a SPECON. (The Northern prawn fishery with "GRID19" is included in Art.11.4 for some of the species included in this exemption).

Table 3.2.1.2 (continued): The anticipated exemptions for discard plans for 2023 in the North Sea region and the related FDI codes.

		2023 - Part 3														
	Exemption Article	Area	FDI EEZ indicator	Description	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Survivability	*DR-2020/2014 Art.3.1.a*	IIa-IIIa-IV	**EU**	Nephrops caught using pots	Yes	Pots	FPO	No	FPO	All	All	All	All	All	Norway lobster	NEP	-
	DR-2020/2014 Art.3.1.b.i & ii	IIa-IIIa-IV	**EU**	Nephrops caught by bottom trawls with a cod end larger than 80mm or 70mm with selective grid 35mm	Yes	Bottom trawls	OTB-OTT-TBN	No	OTB-OTT-PTB	>80	80D100-100D110-110D120-120DXX	All	All	All	Norway lobster	NEP	-
										>70	70S90-80D100-100D110-110D120-120DXX	All	GRID35				
	DR-2020/2014 Art.4.1&2	IVc	EU	Survival exemption for 'undersized' common sole (sole less than MCRS of 24cm) caught by 80-99mm otter trawl gears in ICES division 4c **within 6 nautical miles of coasts-albeit outside identified nursery areas**; vessellengt max 10 m and **max engine power of 221 kw, depth less 30 m and tow duration less then 1:30 hours**	**Partly**	Otter trawls	OTB	Yes Sole: 24 cm	OTB	80-99	80D100	VL0010	All	All	Sole	SOL	-
	DR-2020/2014 Art.5	IIIa-IV	EU	Survivability of fish by-catches in pots and fyke nets in the Union waters of ICES division 3a and ICES subarea 4	Yes	Pots and fyke nets	FPO-FYK	No	FPO-FYK	All	All	All	All	All	All TAC-species	**Area IV**: USK-HER-COD-LEZ-MON-ANF-MNZ-ANK-HAD-WHG-HKE-WHB-WIT-LEM-BLI-LIN-PLE-POL-POK-TUR-BLL-GHL-MAC-SOL-SPR-HOM-JAX-NOP-ARG-ARU-NEP-PRA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK **Area IIIa:** UUSK-HER-COD-HAD-WHG-HKE-WHB-BLI-LIN-PLE-POL-POK-MAC-SOL-SPR-NOP-ARG-ARU-NEP-PRA-RJK-RAJ-SRX-SKA-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-TTO-TTR	-
	DR-2020/2014 Art.6.1.a	IIIa-IV	EU	Catch and by-catch of plaice by vessels using nets (GNS-GTR-GTN-GEN) in Union waters of ICES devision 3a and subarea 4	Yes	Nets	GNS-GTR-GTN-GEN	No	GNS-GTR-GTN	All	All	All	All	All	Plaice	PLE	-
	DR-2020/2014 Art.6.1.b		EU	Catch and by-catch of plaice by vessels using Danish seines in Union waters of ICES devision 3a and subarea 4	Yes	Danish seine	SDN	No	SDN	All	All	All	All		Plaice	PLE	-
	DR-2020/2014 Art.6.1.c.i		EU	Catch and by-catch of plaice by vessels using bottom trawls (OTB-PTB) of mesh sizes ≥ 120 mm in Union waters of ICES devision 3a and subarea 4	Yes	Bottom trawls	OTB-PTB	No	OTB-OTT-PTB	>=120	120DXX	All	All	All	Plaice	PLE	-
	DR-2020/2014 Art.6.1.c.ii	IIIa	EU	Catch and by-catch of plaice with bottom trawls (OTB-PTB) with mesh size 90-119 mm with Seltra panel with a top panel of 140 mm mesh size (square mesh), 270 mm mesh size (diamond mesh) or 300 mm mesh size (square-mesh), which target flatfish or roundfish in the Union waters of ICES division 3a	Yes	Trawls	OTB-PTB	No	OTB-OTT-PTB	90-119	80D100-100D110-110D120	All	SELTRA	All	Plaice	PLE	-
	DR-2020/2014 Art.6.1.c.iii	IV	EU	Catch and by-catch of plaice with bottom trawls (OTB-PTB) with mesh size 80-119 mm targetting flatfish or roundfish in the Union waters of ICES subareas 4	Yes	Trawls	OTB-PTB	No	OTB-OTT-PTB	80-119	80D100-100D110-110D120	All	All	All	Plaice	PLE	-

Table 3.2.1.2 (continued): The anticipated exemptions for discard plans for 2023 in the North Sea region and the related FDI codes.

		2023 - Part 4														
	Exemption Article	Area	FDI EEZ indicator	Description	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Survivability	*DR-2020/2014 Art.7.1.a*	IIa-IV	EU	Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES devision 2a and Ices subarea 4 with **flip-up rope or Benthos release panel (BRP) - engine >221 kW**	**Partly**	Beam trawls	TBB	YesPlaice: 27 cm	TBB	80-119	80D100-100D110-110D120	All	All	All	Plaice	PLE	-
	DR-2020/2014 Art.7.1.b	IIa-IV	EU	Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES division 2a and ICES subarea 4 **implementing the roadmap for the Fully Documented** Fisheries	**No (included in DR-2020/2014.Art.7.1.a)**	Beam trawls	TBB	YesPlaice: 27 cm	TBB	80-119	80D100-100D110-110D120	All		All	Plaice	PLE	-
	DR-2020/2014 Art.7.2	IIa-IV	EU	Survival exemption for plaice below MCRS caught by 80-119mm beamtrawl gears (BT2) in ICES division 2a and Ices subarea 4 with **engine <221 kW or less then 24m in twelve miles zone and tow duration less than ninety min.**	**No**	Beam trawls	TBB	YesPlaice: 27 cm	TBB	80-119	80D100-100D110-110D120	VL0010-VL1012-VL1218-VL1824	All	All	Plaice	PLE	-
	DR-2020/2014 Art.8	IV	EU	Survival exemption for turbot caught by beam trawls with a cod end larger than 80mm in Union waters of ICES subarea 4	Yes	Beam trawls	TBB	No	TBB	>80	80D100-100D110-110D120-120DXX	All	All	All	Turbot	TUR	-
	DR-2020/2014 Art.9	IIa-IIIa-IV	EU	skates and rays caught by all fishing gears in the Union waters of the North Sea (ICES divisions 2a,3a and subarea 4)	Yes	All	All	No	All	All	All	All	All	All	Skates and rays	JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR-SRX-RAJ-RJK	-
	DR-2020/2014 Art.10	IIa-IIIa-IV	EU	Survival exemption for mackerel and herring in purse seine fisheries in the Union waters of the North Sea (ICES divisions 2a,3a and subarea 4) **with several operational measures**	**Partly**	Purse seine		No	PS	All	All	All	All	All	Mackerel-herring	MAC-HER	-

North Western Waters

Table 3.2.1.3: The anticipated exemptions for discard plans for 2023 in the North Western Waters region and the related FDI codes.

		2023 - part 1													
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Legislation mesh size	Mesh size regulation	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	2022/XXX Article 1.4.a	VIId and VIIe	yes	Bottom trawls , Seines	OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBN-TBS-TB-TX	No	OTB-OTT-PTB-SDN-SPR-SSC-SV-SB	>80	80D100-100D110-110D120 -120DXX	All	All	All	Whiting	WHG	3
			yes	Pelagic trawls	OTM-PTM	No	OTM-PTM	All	All	All	All	All	Whiting	WHG	5
			yes	Beam trawl	BT2	No	TBB	80-119	80D100-100D110-110D120	All	All	All	Whiting	WHG	5
		VIId-g	yes	Trammel and gill nets	GN-GNS-GND-GNC-GTN-GTR-GEN-GNF	No	GND-GNS-GNC-GTR-GTN	All	All	All	All	All	Sole	SOL	3
	2022/XXX Article 1.4.b	VIId-h, VIIj and VIIk	yes	Beam trawl	TBB	No	TBB	80-119	80D100-100D110-110D120	All	TBBFP	All	Sole	SOL	3
	2020/2015 Article 13.1.d.i	VIIb-c and VIIe-k	Partly	Bottom trawls , Seines, less then 30% Nephrops	OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBN-TBS-TB-TX	No	OTB-OTT-PTB-SDN-SPR-SSC-SV-SB	>=100	100D110-110D120 -120DXX	All	All	All	Haddock	HAD	5
	2020/2015 Article 13.1.d.ii		Partly	Bottom trawls , Seines, more then 30% Nephrops		No	OTB-OTT-PTB-SDN-SPR-SSC-SV-SB	>=80	80D100-100D110-110D120 -120DXX	All	All	All	Haddock	HAD	5
	2020/2015 Article 13.1.d.iii		yes	Beam trawl with Flemish panel	TBB	No	TBB	>=80	80D100-100D110-110D120 -120DXX	All	TBBFP	All	Haddock	HAD	5
	2020/2015 Article 13.1.e	VIIa	Partly/Yes	Beam trawl, targetting brown shrimp with mesh size equal to or greater than 31 mm	TBB	Yes plaice: 27 cm - whiting: 27 cm	TBB	>=31	32D80-70D80-80D100-100D110-110D120 -120DXX	All	All	CRU	Plaice	PLE	0.85
													Whiting	WHG	0.15
	2021/2063 Article 1.4 formely 2020/2015 Article 13.1.f	VIIb-c and VIIf-k	Patly	All gears in those areas by vessels using bottom trawls	OTT-OTB-TBS-TBN-TB-PTB	No	All using OTB-OTT-PTB	All	All	All	All	All	Boarfish	BOR-BOC-ZAC-ZAI-EVI-PZH-RIG-SWH-ENV-EMV-ZAL	0.5
	2020/2015 Article 13.1.g	VII	Partly/yes	Beam trawl	BT2	Yes Megrim: 20 cm	TBB	80-119	80D100-100D110-110D120	All	All	All	Megrim	MEG-LDB-LEZ	4
	2020/2015 Article 13.1.g.i	VIIf-g, specific parts of 7h	Partly	Bottom trawls, more 55% whiting or 55% anglerfish, hake or megrim combined	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	Yes Megrim: 20 cm	OTB-OTT-PTB	70-99	80D100-70D80	All	All	All	Megrim	MEG-LDB-LEZ	4
	2020/2015 Article 13.1.g.ii	VIIa-e, other specific parts of 7h, VIIk	Partly	Bottom trawls and outside areas as above	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	Yes Megrim: 20 cm	OTB-OTT-PTB	70-99	80D100-70D80	All	All	All	Megrim	MEG-LDB-LEZ	4

Table 3.2.1.3 (continued): The anticipated exemptions for discard plans for 2023 in the North Western Waters region and the related FDI codes.

		2023 - part 2													
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Legislation mesh size	Mesh size regulation	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	2020/2015 Article 13.1.h	VIIa	yes	Beam trawl with Flemish panel	BT2	No	TBB	80-119	80D100-100D110-110D120	All	TBBFP	All	Sole	SOL	3
	2020/2015 Article 13.1.i	Vb-VI	**Partly (0.6% of catches from all gears)**	Bottom trawls	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	No	OTB-OTT-PTB	>=100	100D110, 110D120, 120DXX	All	All	All	Great silver smelt	ARG-ARU-ARY	0.6
	2020/2015 Article 13.1.j	VI and VIIb-k	yes	Bottom trawls , Seines, beam trawls	OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBB-TBN-TBS-TB-TX	No	OTB-OTT-PTB-SDN-SPR-SSC-SV-SB-TBB	All	All	All	All	All	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	3
	2020/2015 Article 13.1.k		yes	Bottom trawls , Seines, beam trawls	OTB-OTT-OT-PTB-PT-SSC-SDN-SPR-SX-SV-TBB-TBN-TBS-TB-TX	No	OTB-OTT-PTB-SDN-SPR-SSC-SV-SB-TBB	All	All	All	All	All	Makerel	MAC	3
	2020/2015 Article 13.1.l	VIa	**Partly**	Bottom trawls, with one of the following selective gears: **square mesh panel 300 mm; 200 mm and vessel > 12 m;** Seltra panel; Sorting grid 35 mm; CEFAS-netgrid;Flip-flap trawl	OTT-OTB-TBS-TBN-TB	Yes Haddock: 30 cm	OTB-OTT-PTB	<=119	32D70 - 70D80 - 80D100-100D110-110D120	All	GRID35-TBBFP-SELTRA-NETGRID-SEPNEP	All	Haddock	HAD	3
	2020/2015 Article 13.1.m	Vb-VI-VII	yes	Industrial pelagic trawls		No	OTM-PTM	All	All	All	All	All	Blue whiting	WHB	5
	2020/2015 Article 13.1.n	VII	yes	midwater pair trawl	PTM	No	PTM	All	All	All	All	All	Albacore tuna	ALB	
	2020/2015 Article 13.1.o	VIId	yes	Pelagic trawls, midwater trawls (up to 25m)	OTM-PTM	No	OTM-PTM	All	All	VL0010-VL1012-VL1218-VL1824	All	All	Mackerel	MAC	1
			yes									All	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
			yes									All	Herring	HER	
			yes									All	Whiting	WHG	

Table 3.2.1.3 (continued): The anticipated exemptions for discard plans for 2023 in the North Western Waters region and the related FDI codes.

		2023 - part 3													
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	Below MCRS or not	FDI gear code	Legislation mesh size	Mesh size regulation	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Survivability	2020/2015 Article 3.1.a	VI-VII	Yes	Pots,traps,creel	FPO-FIX-FYK	No	FPO-FPN-FYK	All	All	All	All	All	Norway Lobster	NEP	-
	2020/2015 Article 3.1.b	VII	Yes	Bottom trawls	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	No	OTB-OTT-PTB	>=100	100D110, 110D120, 120DXX	All	All	All	Norway Lobster	NEP	-
	2020/2015 Article 3.1.c	VII	Partly	Bottom trawls, with one of the following selective gears: **square mesh panel 300 mm; 200 mm and vessel > 12 m**; Seltra panel; Sorting grid 35 mm; **100 mm cod-end, dual cod-end < 90 mm/300 mm**	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	No	OTB-OTT-PTB	70-99	70D80-80D100	All	GRID35-TBBFP-SELTRA-NETGRID-SEPNEP-T90	All	Norway Lobster	NEP	-
	2020/2015 Article 3.1.d	**VIa (within 12 nautical miles from coastline)**	Partly	Otter trawls	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	No	OTT-OTB-OTM	80-110	80D100,100D110	All	All	All	Norway Lobster	NEP	-
	2020/2015 Article 3.2	Celtic protection zone (BSA)	Partly	Bottom trawls, with one of the following selective gears: **square mesh panel 300 mm; 200 mm and vessel > 12 m**; Seltra panel; Sorting grid <=35 mm; **100 mm cod-end, dual cod-end < 90 mm/300 mm**	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	No	OTB-OTT-PTB	70-99	70D80-80D100	All	GRID35-SELTRA-NETGRID-SEPNEP-T90	All	Norway Lobster	NEP	-
	2020/2015 Article 3.3	VIIa	Partly	Bottom trawls, with one of the following selective gears: **square mesh panel 300 mm; 200 mm and vessel > 12 m**; Seltra panel; Sorting grid <=35 mm; CEFAS-netgrid;Flip-flap trawl							GRID35-TBBFP-SELTRA-NETGRID-SEPNEP	All			
	2022/**XXX** Aricle 1.1 Formely 2020/2015 Article 4.1.a,b	VIId	Partly	Otter trawls, **within 6 nautical miles, outside nursery areas, max power 221kW, max 10 m, depth 30m, duration 1:30 h**	OTT-OTB-TBS-TBN-TB-PTB-OT-PT-TX	Yes: sole 24 cm	OTT-OTB-OTM	80-99	80D100	VL0010	All	All	Sole	SOL	-
		VIIe	Partly	Otter trawls (OTB), **within 6 nautical miles, outside nursery areas, max 12 m**	OTB	Yes: sole 24 cm	OTB	80-99	80D100	VL0010-VL1012	All	All	Sole	SOL	-
	2020/2015 Article 5	VI-VII	Yes	All	All	No	All	All	All	All	All	All	Skates & rays	SRX-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJN-RJO-RJR-RJU-RJY-SKA-TTO-TTR	-
	2020/2015 Article 6.1.a	VIId-VIIg	Yes	Trammel nets	GTR-GTN-GEN-GN	No	GND-GNS-GNC-GTR-GTN	All	All	All	All	All	Plaice	PLE	-
	2020/2015 Article 6.1.b		Yes	Otter trawls	OTT,OTB,TBS,TBN,TB,PTB,OT,PT,TX	No	OTT-OTB-OTM	All	All	All	All	All	Plaice	PLE	-
	2020/2015 Article 6.1.c	VIIa-VIIg	Partly	Beam trawl, **max power 221 kW**, flip-up or bentic panel	TBB	No	TBB	All	All	All	SELTRA-GRID35	All	Plaice	PLE	-
	2020/2015 Article 6.1.d	VIIa-VIIg	Partly	Beam trawl, **max power 221 kW**, or max 24m, **within 12 nm, duration 1:30 h**	TBB	No	TBB	All	All	VL0010-VL1012-VL1218-VL1824	All	All	Plaice	PLE	-
	2020/2015 Article 6.1.e	VIId	Yes	Danish seines	SDN	No	SDN	All	All	All	All	All	Plaice	PLE	-
	2021/2063 in Article 1.2	VIIb-k	Yes	Seines	SSC	No	SSC	All	All	All	All	All	Plaice	PLE	-
	2020/2015 Article 7	V (excl Va)-Vb-VI-VII	Yes	Pots,traps,creel	FPO-FIX-FYK	No	FPO-FPN-FYK	All	All	All	All	All	All	All	-
	2020/2015 Article 8	VI	Yes	Purse seine with several operational measures		No	SDN-SPR-SSC-SV	All	All	All	All	All	Mackerel-herring	MAC-HER	-

South Western Waters

Table 3.2.1.4: The anticipated exemptions for discard plans for 2023 in the South Western Waters region and the related FDI codes.

		2023 part 1												
	Excemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	*2020/2015 Article 14.1.a*	VIII-IX	yes	Trawls and seines	OTM-PTM-OTT-OTB-PTB-OT-PT-TBN-TBS-TX-SSC-SPR-TB-SDN-SX-SV	OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Hake	HKE	5
	2020/2015 Article 14.1.b	VIIIa-VIIIb	yes	Pelagic trawls, beam and bottom trawls	OTM-PTM-OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX	OTM-PTM-TBB-OTB-OTT-PTB	All	All	All	All	All	Sole	SOL	5
	2020/2015 Article 14.1.c		yes	Trammel and gill nets	GNS-GN-GND-GNC-GTN-GTR-GEN	GNS-GND-GNC-GTN-GTR	All	All	All	All	All			3
	2020/2015 Article 14.1.d	X	yes	Hooks and lines	LHM-LHP-LLD-LLS	LHM-LHP-LLD-LLS-LTL	All	All	All	All	All	Alfonsinos	ALF-BRX	5
	2020/2015 Article 14.1.e	VIII-IX	yes	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	5
	2020/2015 Article 14.1.f	VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0	yes	Gillnets	GNS-GND-GNC-GTN-GTR	GNS-GND-GNC-GTN-GTR	All	All	All	All	All			3
	2020/2015 Article 14.1.g	VIII-IX	yes	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Mackerel	MAC	5
	2020/2015 Article 14.1.h	VIII-IX-CECAF 34.1.1-34.1.2-34.2.0	yes	Gillnets	GNS-GND-GNC-GTN-GTR	GNS-GND-GNC-GTN-GTR	All	All	All	All	All	Mackerel	MAC	3
	2020/2015 Article 14.1.i	VIII-IX	yes	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Megrim	MEG-LDB-LEZ	5
	2020/2015 Article 14.1.j		yes	Gillnets	GNS-GND-GNC-GTN-GTR	GNS-GND-GNC-GTN-GTR	All	All	All	All	All			4
	2020/2015 Article 14.1.K		yes	Pelagic trawls, beam, bottom trawls and seines	OTM-PTM-OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-SSC-SPR-SDN-SX-SV	OTM-PTM-TBB-OTB-OTT-PTB-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Anglerfish	MON-ANK-ANG-MVA-MVO-MVJ-MVN-MNZ-LHS-LHU-KZZ-IDZ-IVV-ANF	5
	2020/2015 Article 14.1.L		yes	Gillnets	GNS-GND-GNC-GTN-GTR	GNS-GND-GNC-GTN-GTR	All	All	All	All	All			4

Table 3.2.1.4 (continued): The anticipated exemptions for discard plans for 2023 in the South Western Waters region and the related FDI codes.

		2023 part 2												
	Excemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Deminimis	*2020/2015 Article 14.1.o*	VIII-IX	yes	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-TB-OT-PT-TX-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Anchovy	ANE	5
	2020/2015 Article 14.1.p	**IXa in Gulf of Cadiz**	**Partly**	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-TB-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Red seabream	SBR	5
	2020/2015 Article 14.1.q	**IXa in Gulf of Cadiz**	**Partly**	Beam trawls, bottom trawls and seines	OTB-OTT-PTB-TBN-TBS-TBB-OT-PT-TX-TB-SSC-SPR-SDN-SX-SV	TBB-OTT-OTB-PTB-OTM-PTM-SDN-SPR-SSC-SV-SB	All	All	All	All	All	Sole	SOL	1
	2020/2015 Article 14.1.r	VIII	**Partly(Surimi base)**	Industrial pelagic trawl fishery using midwater trawls and midwater pair trawls	OTM-PTM	OTM-PTM	All	All	All	All	SPF-SLP	Blue whiting	WHB	5
	2020/2015 Article 14.1.s		yes	Midwater trawls and midwater pair trawls	OTM-PTM	OTM-PTM	All	All	All	All	All	Albacore tuna	ALB	5
	2020/2015 Article 14.1.t		yes	Pelagic trawls	OTM-PTM	OTM-PTM	All	All	All	All	All	Anchovy	ANE	4
							All	All	All	All	All	Mackerel	MAC	
							All	All	All	All	All	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	2020/2015 Article 14.1.u	VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0	yes	Purse seines	PS	PS	All	All	All	All	All	Anchovy	ANE	1
							All	All	All	All	All	Mackerel	MAC	4
							All	All	All	All	All	Horse mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	

Table 3.2.1.4 (continued): The anticipated exemptions for discard plans for 2023 in the South Western Waters region and the related FDI codes.

		2023 part 3												
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Mesh size	Mesh size FDI	Vessel lenght	SPECON	Target Assemblage	Species	Species codes	Procent/MCRS
Survavability	*2020/2015 Article 9*	VIII-IX	yes	Bottom trawls	OTB-OTT-PTB-TBN-TBS-TB-TBB-OT-PT-TX	OTB-OTT-PTM-TBB	All	All	All	All	All	Norway Lobster	NEP	-
	2020/2015 Article 10.1	VIII-IX	yes	All	All	All	All	All	All	All	All	Skates & rays	SRX-JAD-JDP-RJA-RJB-RJC-RJE-RJF-RJG-RJH-RJI-RJM-RJO-RJR-RJU-RJY-SKA-TTO-TTR	-
	2020/2015 Article 12	VIII-IX-X-CECAF 34.1.1-34.1.2-34.2.0	**Partly**	**Purse seine with net not fully taken on board**	PS	PS	All	All	All	All	All	Anchovy- horse mackerel - mackerel	ANE-HMM-JAX-HOM-HMC-HMZ-HMG-TUZ-MAC	-

Mediterranean Sea

Table 3.2.1.5: The anticipated exemptions for discard plans for 2023 in the Mediterranean Sea region and the related FDI codes.

		2023 - Part 1							
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Species	Species codes	Procent/MCRS
Deminimis	*2021/2064 Adriatic and south-eastern Med - Article 3 (a) i*	Adriatic Sea (GSA17-GSA18)	yes	bottom trawls		OTB-OTT-PTB	Hake	HKE	5
			yes				Mullets	MUR-MUT-MUX	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) ii		yes	Gill nets and and trammel nets	GNS-GN-GND-GNC-GTN-GTR-GEN	GND-GNS-GNC-GTR-GTN	Hake	HKE	1
			yes				Mullets	MUR-MUT-MUX	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) iii		yes	Rapido	TBB	TBB	Hake	HKE	1
			yes				Mullets	MUR-MUT-MUX	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) iv		yes	bottom trawls		OTB-OTT-PTB	Sole	SOL	3
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) v		yes				European seabass	BSS	5
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Gilthead seabream	SBG	
			yes				Deepwater rose shrimp	DPS	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) vi	Adriatic Sea (GSA17-GSA18)	yes	Gill nets and and trammel nets	GNS-GN-GND-GNC-GTN-GTR-GEN	GND-GNS-GNC-GTR-GTN	European seabass	BSS	3
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Sole	SOL	
			yes				Gilthead seabream	SBG	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) vii	Adriatic Sea (GSA17-GSA18)	yes	Hooks and lines	LHP-LHM-LLS-LLD-LL-LTL-LX	LHM-LHP-LLD-LLS	European seabass	BSS	1
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Sole	SOL	
			yes				Gilthead seabream	SBG	
	2021/2064, Adriatic and south-eastern Med - Article 3 (a) viii		yes	bottom trawls		OTB-OTT-PTB	Anchovy	ANE	5
			yes				Sardine	PIL	
			yes				Mackerel	MAC-MAS-MAZ-VMA	
			yes				Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	

Groupers FDI codes are: EEA-EEB-EEC-EED-EEE-EEF-EEG-EEI-EEJ-EEK-EEL-EEM-EEN-EEP-EEQ-EER-EES-EET-EEU-EEV-EEX-EEY-EFB-EFC-EFD-EFE-EFH-EFJ-EFK-EFN-EFQ-EFV-EFW-EFX-EFY-EIF-EIR-EIT-EIU-ELD-ELG-ENI-EPA-EPF-EPK-EPR-EPT-EPV-EPY-EPZ-ESE-EWC-EWE-EWF-EWG-EWI-EWL-EWM-EWO-EWP-EWR-EWS-EWT-EWU-EWV-EWW-EWY-EWZ-EZO-EZP-EZR-GPD-GPN-GPR-GPS-GPW-GPX-MAR*

Table 3.2.1.5 (continued): The anticipated exemptions for discard plans for 2023 in the Mediterranean Sea region and the related FDI codes.

		2023 - Part 2							
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Species	Species codes	Procent/MCRS
Deminimis	*2021/2064, Adriatic and south-eastern Med - Article 3 (b) i*	South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27)	yes	bottom trawls		OTB-OTT-PTB	Hake	HKE	5
			yes				Mullets	MUR-MUT-MUX	
	2021/2064, Adriatic and south-eastern Med - Article 3 (b) ii		yes	Gill nets and and trammel nets	GNS-GN-GND-GNC-GTN-GTR-GEN	GND-GNS-GNC-GTR GTN	Hake	HKE	1
			yes				Mullets	MUR-MUT-MUX	
	2021/2064, Adriatic and south-eastern Med - Article 3 (b) iii		yes	bottom trawls		OTB-OTT-PTB	Deep-water rose shrimp	DPS	5
	2021/2064, Adriatic and south-eastern Med - Article 3 (b) iv		yes				European seabass	BSS	
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Gilthead seabream	SBG	
			yes				Norway lobster	NEP	
			yes				Sole	SOL	
	2021/2064, Adriatic and south-eastern Med - Article 3 (b) v	South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27)	yes	Gill nets and and trammel nets	GNS-GN-GND-GNC-GTN-GTR-GEN	GND-GNS-GNC-GTR GTN	European seabass	BSS	3 (if species less than 25% of total landings = 5)
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Gilthead seabream	SBG	
			yes				Sole	SOL	
			yes				Lobster	LBE	
			yes				Crawfish	VLO-PCC-RCW	
Deminimis	*2021/2064, Adriatic and south-eastern Med - Article 3 (b) vi*	South-eastern Mediterranean Sea (GSA14-GSA15-GSA16-GSA19-GSA20-GSA21-GSA22-GSA23-GSA24-GSA25-GSA26-GSA27)	yes	Hooks and lines	LHP-LHM-LLS-LLD-LL-LTL-LX	LHM-LHP-LLD-LLS	European seabass	BSS	3
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Red seabream	SBR	
			yes				Spanish seabream	SBA	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Hake	HKE	
			yes				Gilthead seabream	SBG	
	2021/2064, Adriatic and south-eastern Med - Article 3 (b) vii		yes	Bottom trawls		OTB-OTT-PTB	Anchovy	ANE	5
			yes				Sardine	PIL	
			yes				Mackerel	MAC-MAS-MAZ-VMA	
			yes				Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
Survivability	*Black Sea 2021/2065- Article 3.1*	Black Sea (GSA29)	yes	Bottom-set gillnets	GNS	GNS	Turbot	TUR	-

Groupers FDI codes are: EEA-EEB-EEC-EED-EEE-EEF-EEG-EEI-EEJ-EEK-EEL-EEM-EEN-EEP-EEQ-EER-EES-EET-EEU-EEV-EEX-EEY-EFB-EFC-EFD-EFE-EFH-EFJ-EFK-EFN-EFQ-EFV-EFW-EFX-EFY-EIF-EIR-EIT-EIU-ELD-ELG-ENI-EPA-EPF-EPK-EPR-EPT-EPV-EPY-EPZ-ESE-EWC-EWE-EWF-EWG-EWI-EWL-EWM-EWO-EWP-EWR-EWS-EWT-EWU-EWV-EWW-EWY-EWZ-EZO-EZP-EZR-GPD-GPN-GPR-GPS-GPW-GPX-MAR*

Table 3.2.1.5 (continued): The anticipated exemptions for discard plans for 2023 in the Mediterranean Sea region and the related FDI codes.

		2023 - Part 3							
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Species	Species codes	Procent/MCRS
Deminimis	*161/2018 Article 3(1) Annex I (1) amended by 2012/2020*	Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12)	yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Anchovy	ANE	5
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Sardine	PIL	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(1) Annex I (2) ammended by 2012/2020		yes	pelagic purse seines	PS	PS	Anchovy	ANE	
			yes	pelagic purse seines	PS	PS	Sardine	PIL	
			yes	pelagic purse seines	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic purse seines	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(1) Annex II (1) ammended by 2012/2020	South Eastern Mediterranean Sea GSA15 GSA16 GSA19 GSA20 GSA22 GSA23, GSA25	yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Anchovy	ANE	5
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Sardine	PIL	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(1) Annex II (2) ammended by 2012/2020	South Eastern Mediterranean Sea GSA 25	yes	pelagic purse seines	PS	PS	Anchovy	ANE	5
			yes	pelagic purse seines	PS	PS	Sardine	PIL	
			yes	pelagic purse seines	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic purse seines	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(1) Annex III (1) ammended by 2012/2020	Adriatic Sea (GSA17-GSA18)	yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Anchovy	ANE	5
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Sardine	PIL	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic midwater trawls	OTM-PTM	OTM-PTM	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(1) Annex III (2) ammended by 2012/2020	driatic Sea (GSA1	yes	pelagic purse seines	PS	PS	Anchovy	ANE	
			yes	pelagic purse seines	PS	PS	Sardine	PIL	
			yes	pelagic purse seines	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic purse seines	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	

Table 3.2.1.5 (continued): The anticipated exemptions for discard plans for 2023 in the Mediterranean Sea region and the related FDI codes.

		2023 - Part 4							
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Species	Species codes	Procent/MCRS
Deminimis	*161/2018 Article 3(2) Annex IV ammended by 2012/2020*	Malta Island and South of Sicily (GSA15-GSA16)	yes	pelagic midwater trawls	PS	PS	Anchovy	ANE	3
			yes	pelagic midwater trawls	PS	PS	Sardine	PIL	
			yes	pelagic midwater trawls	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic midwater trawls	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3(2) Annex V ammended by 2012/2020	Southern Agean Sea and Crete Island (GSA22-GSA23)	yes	pelagic midwater trawls	PS	PS	Anchovy	ANE	3
			yes	pelagic midwater trawls	PS	PS	Sardine	PIL	
			yes	pelagic midwater trawls	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic midwater trawls	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	161/2018 Article 3 (2) Annex VI ammended by 2012/2020	Southern Adriatic Sea and Ionian Sea (GSA18-GSA19-GSA20)	yes	pelagic purse seines	PS	PS	Anchovy	ANE	3
			yes	pelagic purse seines	PS	PS	Sardine	PIL	
			yes	pelagic purse seines	PS	PS	Mackerel	MAC-MAS-MAZ-VMA	
			yes	pelagic purse seines	PS	PS	Horse Mackerel	HMM-JAX-HOM-HMC-HMZ-HMG-TUZ	
	2021/2066, western Med - Article 4 (a)	Western Mediterranian Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12)	yes	Bottom trawls		OTB-OTT-PTB	Hake	HKE	5
			yes				Mullets	MUR-MUT-MUX	
	2021/2066, western Med - Article 4 (b)		yes	Gill nets and and trammel nets		GND-GNS-GNC-GTR-GTN	Hake	HKE	1
			yes				Mullets	MUR-MUT-MUX	
	2021/2066, western Med - Article 4 (c)		yes	Bottom trawls		OTB-OTT-PTB	European seabass	BSS	5
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Sole	SOL	
			yes				Gilthead seabream	SBG	
			yes				Deepwater rose shrimp	DPS	

Groupers FDI codes are: EEA-EEB-EEC-EED-EEE-EEF-EEG-EEI-EEJ-EEK-EEL-EEM-EEN-EEP-EEQ-EER-EES-EET-EEU-EEV-EEX-EEY-EFB-EFC-EFD-EFE-EFH-EFJ-EFK-EFN-EFQ-EFV-EFW-EFX-EFY-EIF-EIR-EIT-EIU-ELD-ELG-ENI-EPA-EPF-EPK-EPR-EPT-EPV-EPY-EPZ-ESE-EWC-EWE-EWF-EWG-EWI-EWL-EWM-EWO-EWP-EWR-EWS-EWT-EWU-EWV-EWW-EWY-EWZ-EZO-EZP-EZR-GPD-GPN-GPR-GPS-GPW-GPX-MAR*

Table 3.2.1.5 (continued): The anticipated exemptions for discard plans for 2023 in the Mediterranean Sea region and the related FDI codes.

		2023 - Part 5							
	Exemption Article	Area	Possible or not	Fishing Techniques	Gear code	FDI gear code	Species	Species codes	Procent/MCRS
Deminimis	2021/2066, western Med - Article 4 (d)	Western Mediterranian Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12)	yes	Gill nets and and trammel nets		GND-GNS-GNC-GTR GTN	European seabass	BSS	3
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Red seabream	SBR	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Sole	SOL	
			yes				Gilthead seabream	SBG	
	2021/2066, western Med - Article 4 (e)		yes	Hooks and lines		LHM-LHP-LLD-LLS	European seabass	BSS	1
			yes				Annular seabream	ANN	
			yes				Sharpsnout seabream	SHR	
			yes				White seabream	SWA	
			yes				Two-banded seabream	CTB	
			yes				Groupers	Groupers*	
			yes				Striped seabream	SSB	
			yes				Spanish seabream	SBA	
			yes				Common pandora	PAC	
			yes				Common seabream	RPG	
			yes				Wreckfish	WRF	
			yes				Sole	SOL	
			yes				Gilthead seabream	SBG	
Survivability	*2021/2066 western Med - Article 3 (a)*	Western Mediterranean Sea (GSA1-GSA2-GSA5-GSA6-GSA7-GSA8-GSA9-GSA10-GSA11.1-GSA11.2-GSA12)	Yes	Mechanised dredges	HMD	HMD	Scallop	SJA	-
	2021/2066, western Med - Article 3 (b)		Yes	Mechanised dredges	HMD	HMD	Carpet clam	VEN	-
	2021/2066, western Med - Article 3 (c)		Yes	Mechanised dredges	HMD	HMD	Venus shells	CLV	-
	2021/2066, western Med - Article 3 (d)		**Partly**	bottom trawls (**from January-June and September-December**)	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	OTB-OTT-PTB	Norway Lobster	NEP	-
	2021/2066, western Med - Article 3 (e)		Yes	pots and traps	FPO, FIX	FPO-FPN-FYK	Norway Lobster	NEP	-
	2021/2066, western Med - Article 3 (f)		Yes	hooks, lines	LHP, LHM, LLS, LLD, LL, LTL, LX	LHM-LHP-LLD-LLS	Red Seabream	SBR	-
	2021/2066, western Med - Article 3 (g)			nets,pots and traps	GNS, GN, GND, GNC, GTN, GTR, GEN, FPO, FIX	GND-GNS-GNC-GTR GTN-FPO-FPN-FYK	Lobster	LBE	-
	2021/2066, western Med - Article 3 (h)		Yes	nets,pots and traps	GNS, GN, GND, GNC, GTN, GTR, GEN, FPO, FIX	GND-GNS-GNC-GTR GTN-FPO-FPN-FYK	Crawfish	VLO-PCC-RCW	-

Groupers FDI codes are: EEA-EEB-EEC-EED-EEE-EEF-EEG-EEI-EEJ-EEK-EEL-EEM-EEN-EEP-EEQ-EER-EES-EET-EEU-EEV-EEX-EEY-EFB-EFC-EFD-EFE-EFH-EFJ-EFK-EFN-EFQ-EFV-EFW-EFX-EFY-EIF-EIR-EIT-EIU-ELD-ELG-ENI-EPA-EPF-EPK-EPR-EPT-EPV-EPY-EPZ-ESE-EWC-EWE-EWF-EWG-EWI-EWL-EWM-EWO-EWP-EWR-EWS-EWT-EWU-EWV-EWW-EWY-EWZ-EZO-EZP-EZR-GPD-GPN-GPR-GPS-GPW-GPX-MAR*

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 2023.

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:

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

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

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

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

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

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

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

met: metier in table A

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

l: length

Example

Figures 3.5.3.1 illustrate the distribution of the catches in table A by category (Landings/Discards Above/Under MCRS or without length samplings) for the Belgian fleets fishing in the North Sea with Beam Trawl using a mesh size between 70 and 99 mm between 2013 and 2021.

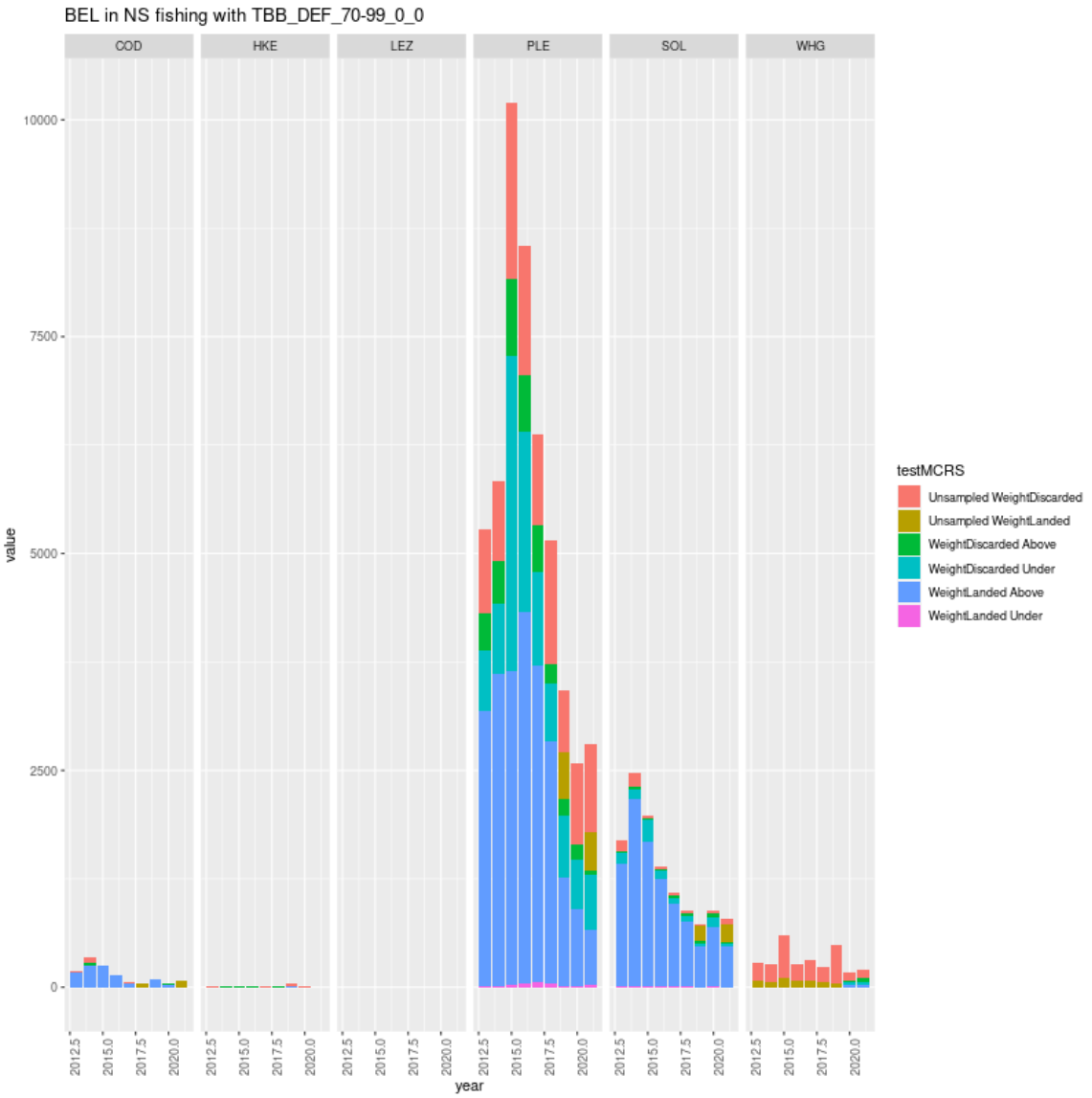


Figure 3.2.2.1: Repartition of the catch [from table A] for the Belgian fleet using mesh size between 70 and 99 mm.

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 12 of Annex 2 by exemptions, species and countries, showing the time series of data for 2018-2021 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 2018-2021 are provided in Table 12 of Annex 2.

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 3 of this report.

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

3.3.1 Discuss results of ToR 2.1 and 2.2 of the EWG 21-10 and ToR 6.1 in EWG 21-12 and agree the format of the Table A and biological data (FDI Tables C, D, E and F) to be publicly disseminated in the future. Discuss the results of the ad-hoc contract 2 of the development for a script to support the dissemination of the data.

Ad hoc contract 2 aimed at developing a script to support the dissemination of the data merging Table A and biological tables.

The format in which Table A and biological tables were disseminated after 2021 data call allowed for merging these tables based on:

COUNTRY_CODE, YEAR, DOMAIN_LANDINGS, SPECIES, NEP_SUB_REGION for landings

and

COUNTRY_CODE, YEAR, DOMAIN_DISCARDS, SPECIES, NEP_SUB_REGION for discards.

The format is suitable for dissemination and merging of Table A and biological tables as long as these variables are kept in the disseminated tables. Year needs to be used as many countries do not include year in the domain names and these names are then duplicated when having all years together. COUNTRY_CODE, SPECIES and NEP_SUB_REGION are added to the primary key as they are not always present in the domain name.

Domains are defined to match the sampling program designs of Member States and ensure that the raising procedures are implemented as Member States see fit. Raising procedures refer to discard estimation and landings/discards length/age structures.

One domain then corresponds to one strata in biological tables (C-F) but potentially to multiple gear/mesh size/quarters in table A depending on the strata aggregation of the sampling design.

Following the data call, the total weight (sum over the different lines of a given domain) of landings (TOTWGHTLANDG) and discard (DISCARDS) provided in table A, must match that of the total value reported in the biological tables (C-F). In table C-F TOTWGHTLANDG should also match the Sum Of Product (SOP) of MEAN_WEIGHT_AT_LENGTH (age) and NO_LENGTH.

The procedure used in the ad hoc contract (Ref STECF 2116) to partition the number at length/age in tables C-F over the different lines of a given domain in table A was the following:

For table F (same procedure for table C-E) and for a given domain

$$NumAtLengthTableA_{quarter,gear,\dots} = NumAtLengthTableF * \left(\frac{totwghtlandgTableA_{quarter,gear,\dots}}{SOPTableF}\right)$$

with $SOPTableF = \sum_{l=length(domain)} meanweightAtLength_l * NumberAtLength_l$

Even if merging is technically possible, it necessitates consistency in domain definition between Table A and the biological table. Additionally, the units reported by Member States need to be

checked (i.e. number in thousand, mean weight in kg and total weight in tonnes). In order to avoid any merging of data for which the unit are inconsistent or the raised number and mean weight out of range, **it was decided to apply a 10% threshold** to SOP. Every domain where the difference between total weight in Table A (sum over the different rows of a domain) and SOP is more than 10% was not merged.

EWG 22-10 discussed the potential confidentiality issue of some domains in the biological tables due to which the total weight in the biological tables could not be disseminated in 2021. In fact, by checking in Table A it appears that some domains have all rows marked as confidential. Disseminating landing and discards weight at the domain level in the biological tables would be going against the confidentiality concerns expressed in Table A by Member States.

The decision was then taken by EWG 22-10 to mark as confidential the values of domains in the biological tables where all row in Table A are marked as confidential ("A"). If at least one row is not marked as confidential or only marked ("V", meaning that the weights are not confidential), the information (weight, number at length …) will be displayed in the biological tables.

EWG 22-10 discussed the dissemination of extended table A (after merging with biological tables).

The options discussed were:

1. Let final end user do the merging
2. Disseminate a big table with the merging of Table A and biological tables made by the EWG
3. Provide a script as an electronic annex that works on the disseminated tables and do the merging following the agreed procedure.

The group decided not to disseminate big Table A including number at length/age for all rows where the merge could be made and no confidentiality was expressed. The reason for not disseminating these big tables is that biological tables are provided at the sampling program designs scale to ensure that the raising procedures are statistically sound. Merging the biological tables with table A has the effect of partitioning the number at length over the different rows of table A. It is useful for some analyses but it is not anymore following the sampling program designs and it is not anymore a scientific estimate of the number at length/age. In order not to give the false impression of length/age composition availability at a very fine level, the group decided to provide a script allowing the users of the data to do the merging but also explaining the procedure and hypotheses that are made when merging the tables. Providing a script also helps end user to do the merging of tables that are quite complex without having a full knowledge of them.

The script (result of the ad hoc contract 2) for merging biological data with table A is available in Annex 4.

3.3.2 Agree on format of dissemination of refusal rate data

As in 2021 the EWG recommends to disseminate Table B as submitted by Member States. This table contains refusal rates estimated by Member States from statistically sound sampling frames and mainly relates to the at-sea sampling programmes.

This table should be disseminated with some guidance on its content, i.e. references to the definitions in the data call, to the Report of the Study Group on the Practical Implementation of Discard sampling plans (SGPIDS 3, ICES CM 2013/ACOM:56) and to the methodologies used to derive data which can be found in the national chapters of this report. It is important that the qualitative nature of this data is highlighted.

3.3.3 *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)*

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:

- 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.

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

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

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

The expert working group 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 provide information in answer to FDI datacall 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 0.32% of invalid records for Table I and 0.17% 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 3.3.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

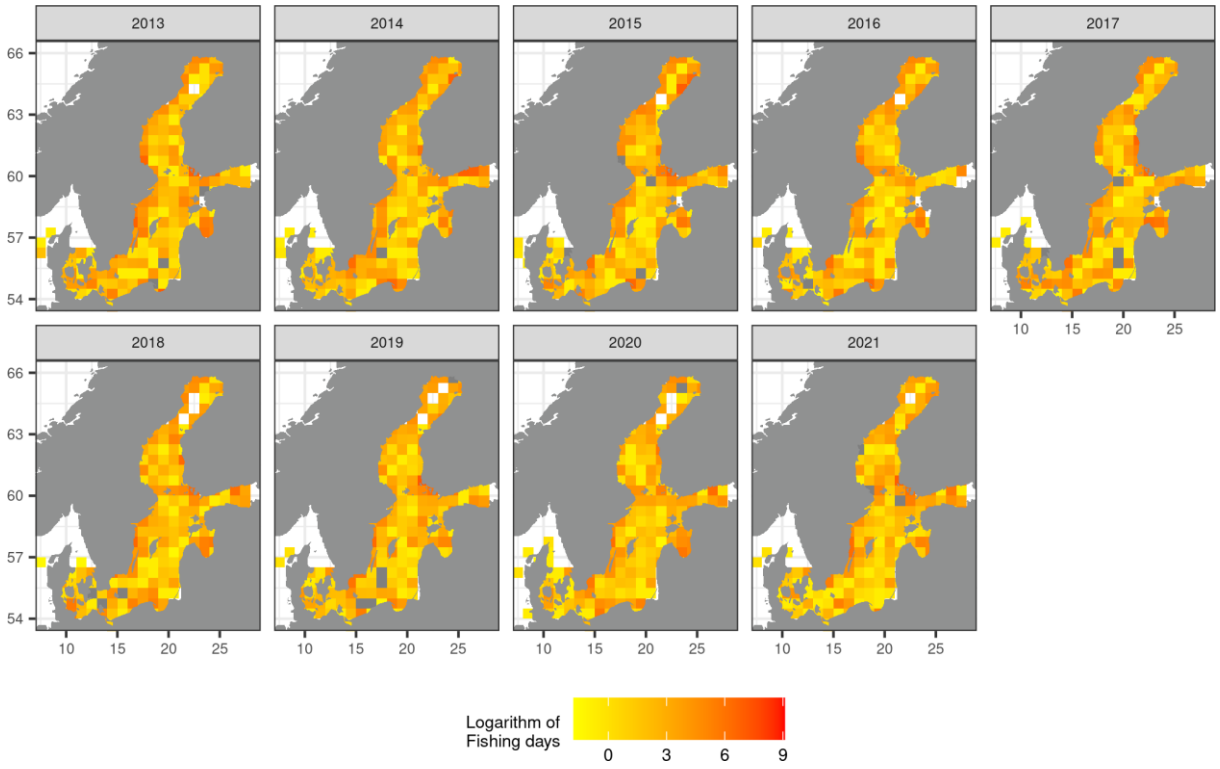
When viewing the results of spatial analysis, it is important to note that data submissions for the Mediterranean and Black Sea was mandatory for the years 2017-2021 but voluntary for 2013-2016.

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

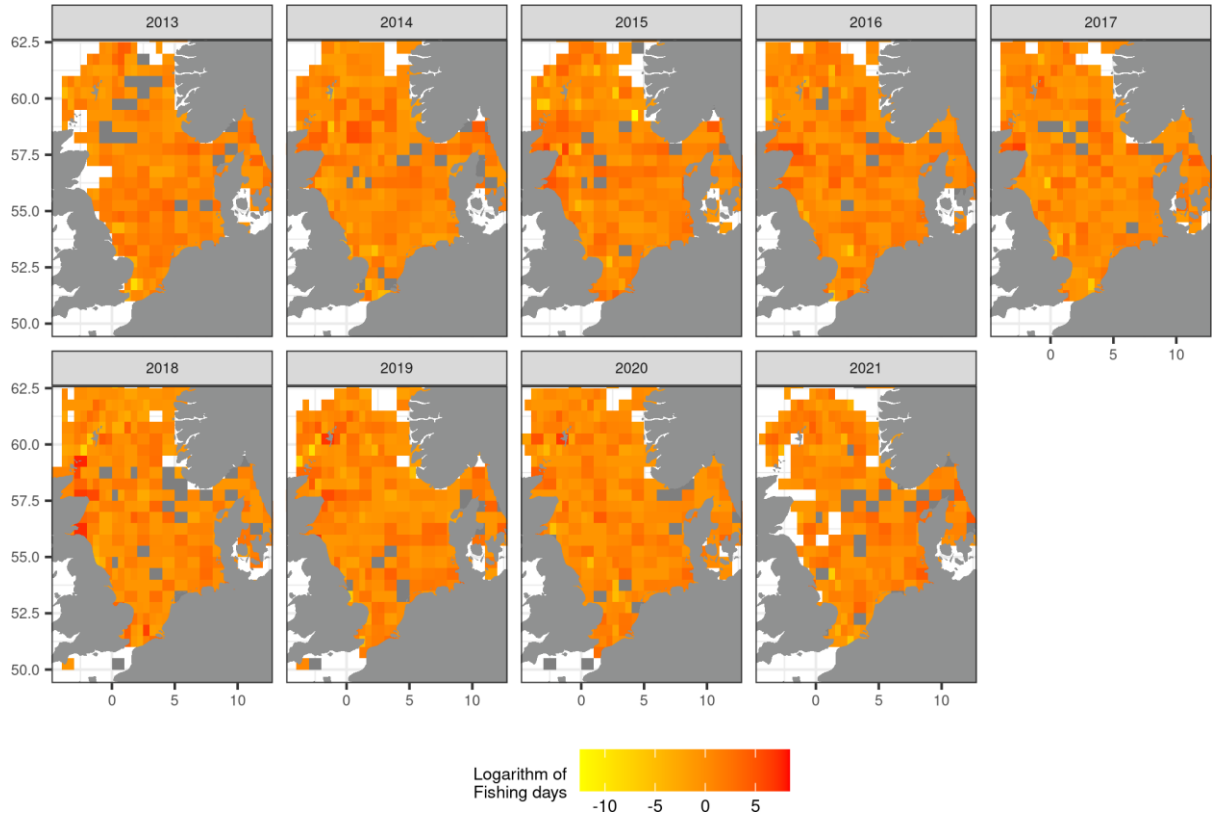
A selection of maps depicting effort by main Fishing Region are given in Figures 3.3.3.1 and 3.3.3.2 and by macro-gear type are given in Figures 3.3.3.3 and 3.3.3.4.

Figure 3.3.3.1: Spatial effort maps by main fishing region

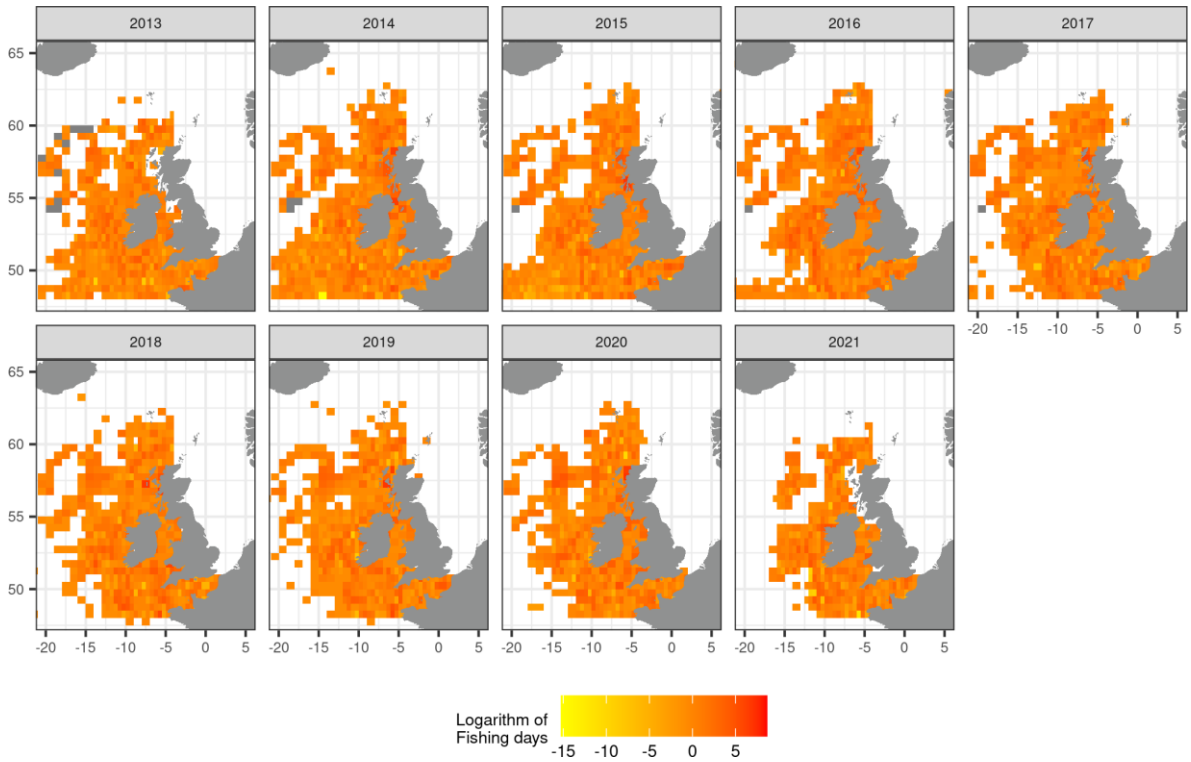
a) Baltic Sea



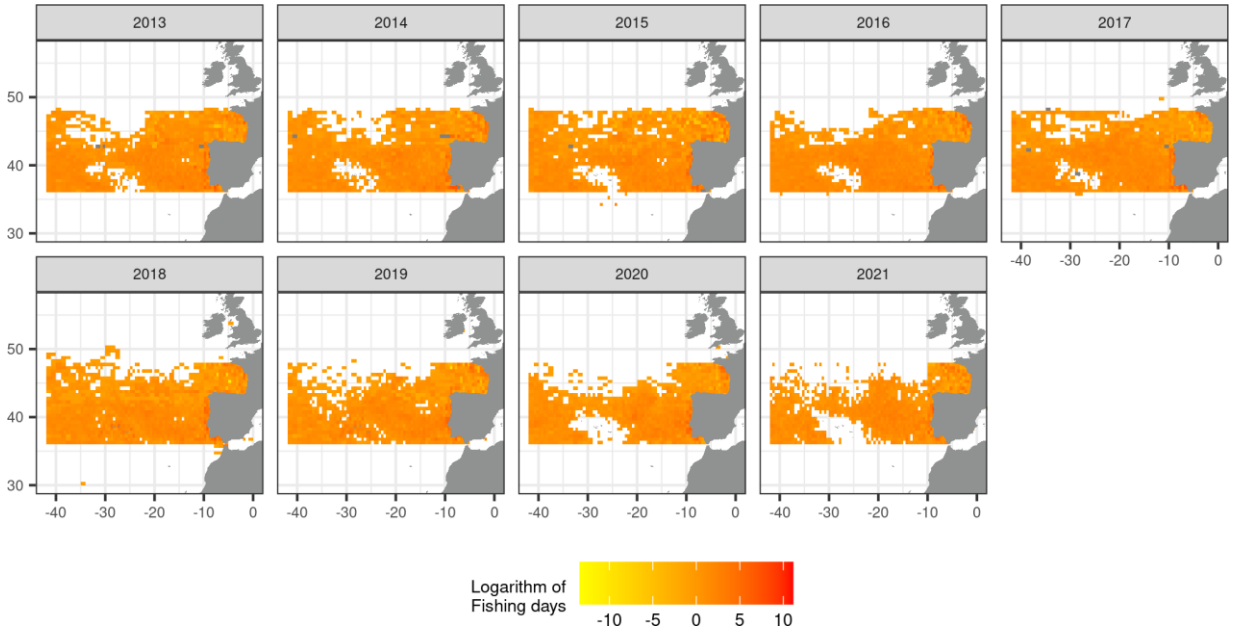
b) North Sea



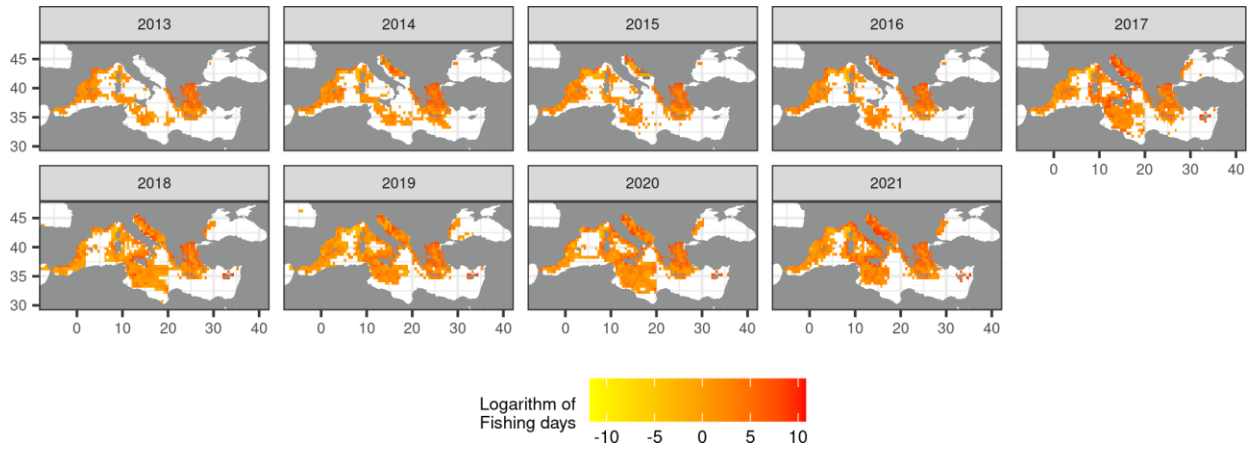
c) North Western Waters



d) South Western Waters



e) Mediterranean and Black Sea



f) Distant Waters

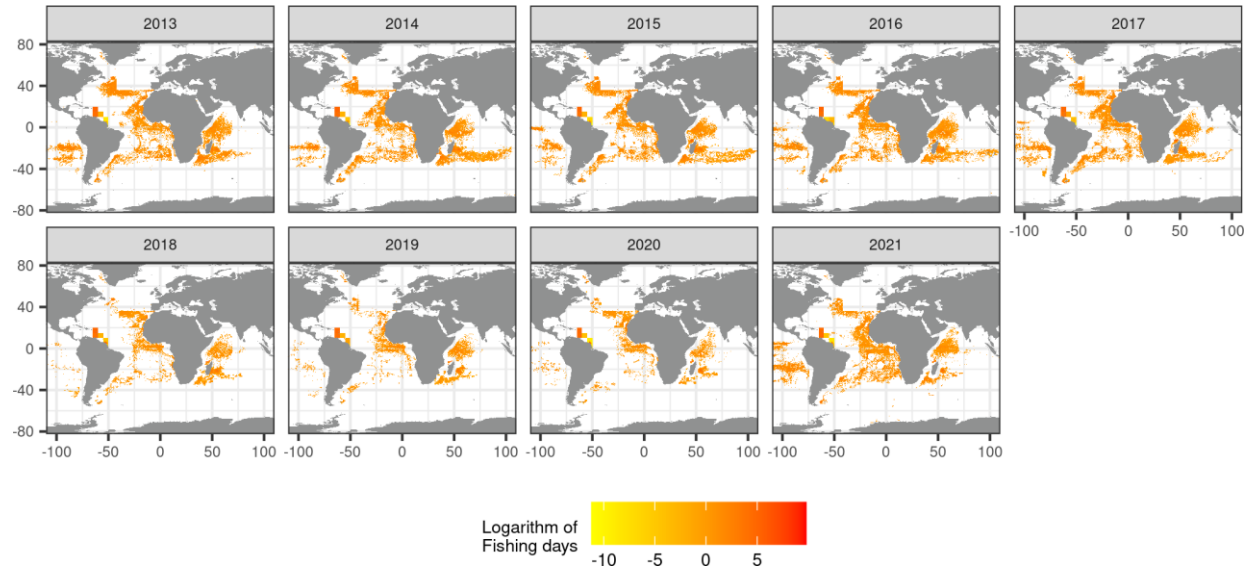
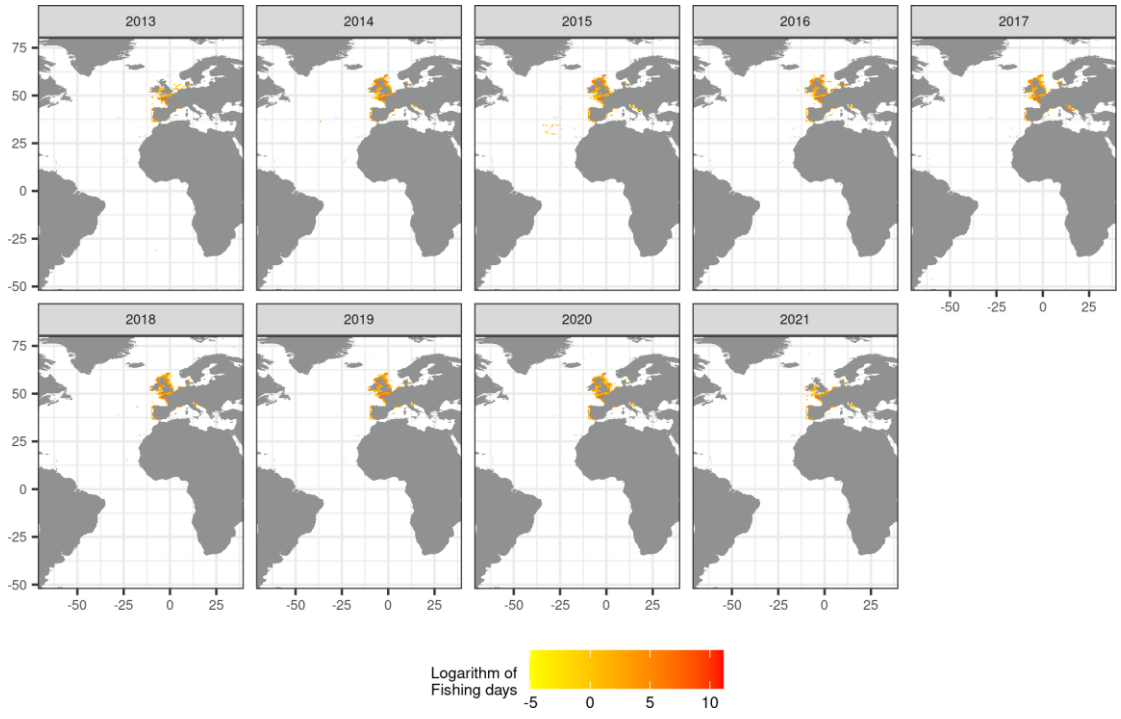
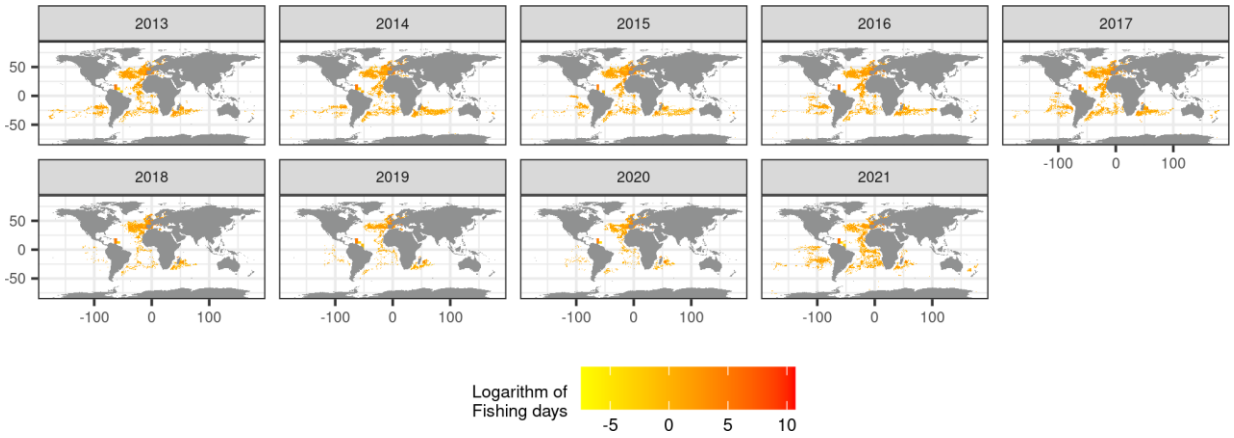


Figure 3.3.3.2: Spatial effort maps by main gear types

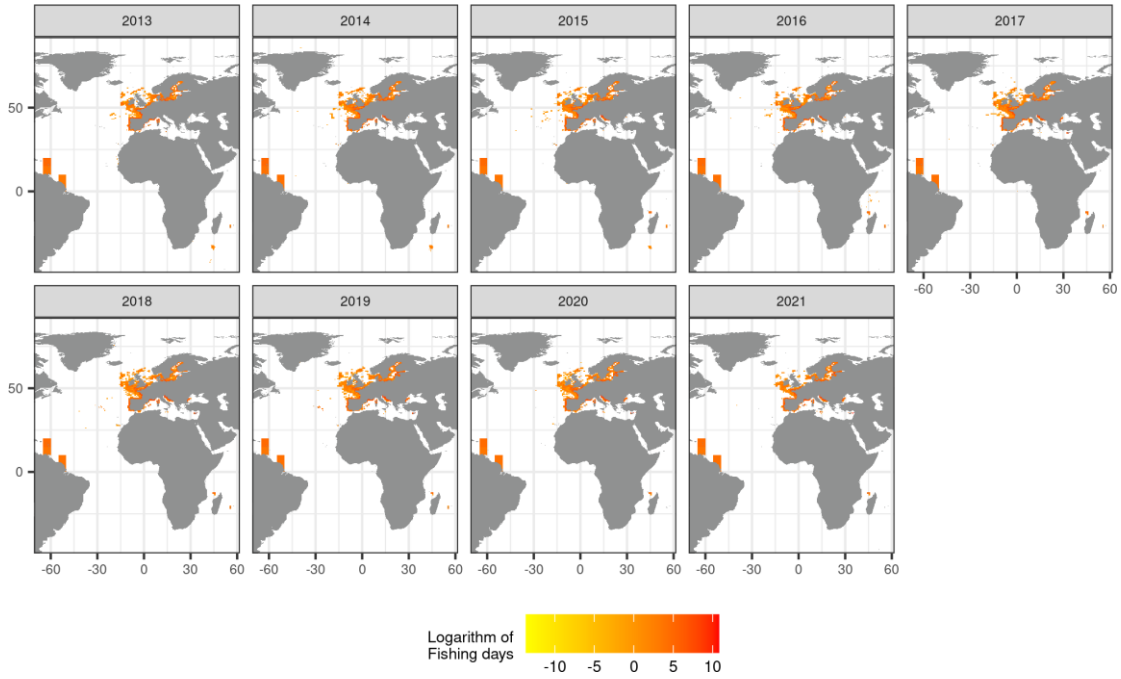
a) Dredges



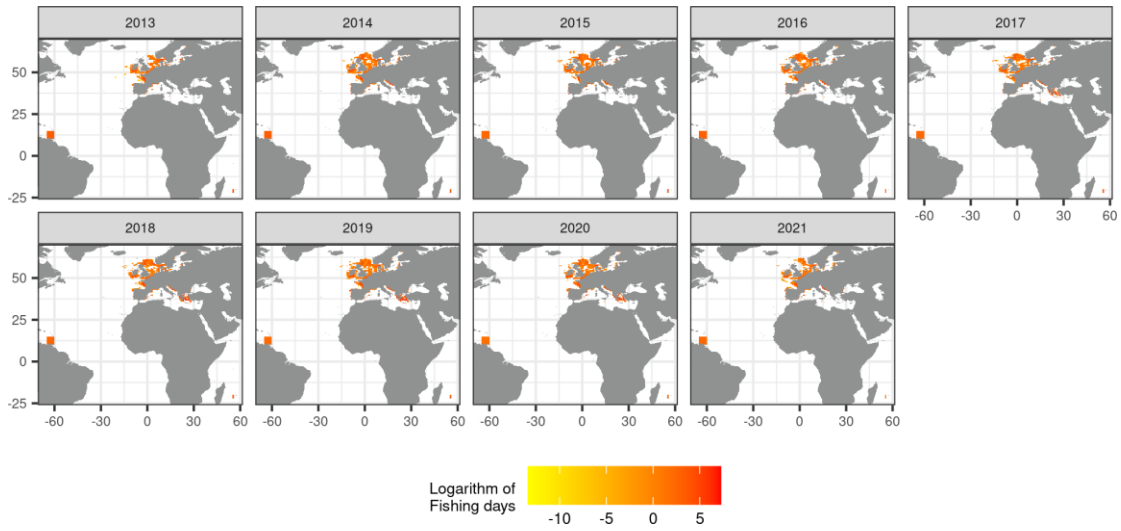
b) Hooks


2013
2014
2015
2016
2017
2018
2019
2020
2021
50
0
-50
-100
0
100
Logarithm of
Fishing days
-5
0
5
10

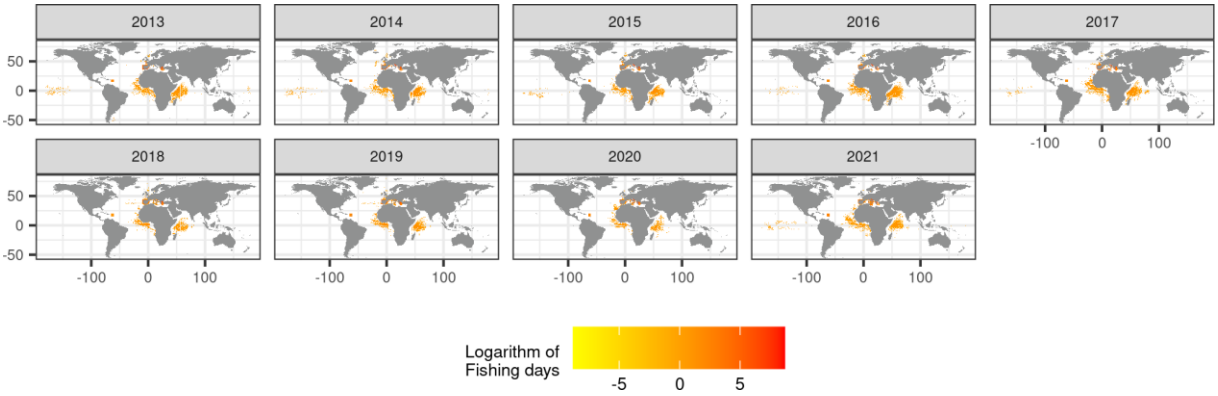
c) Nets



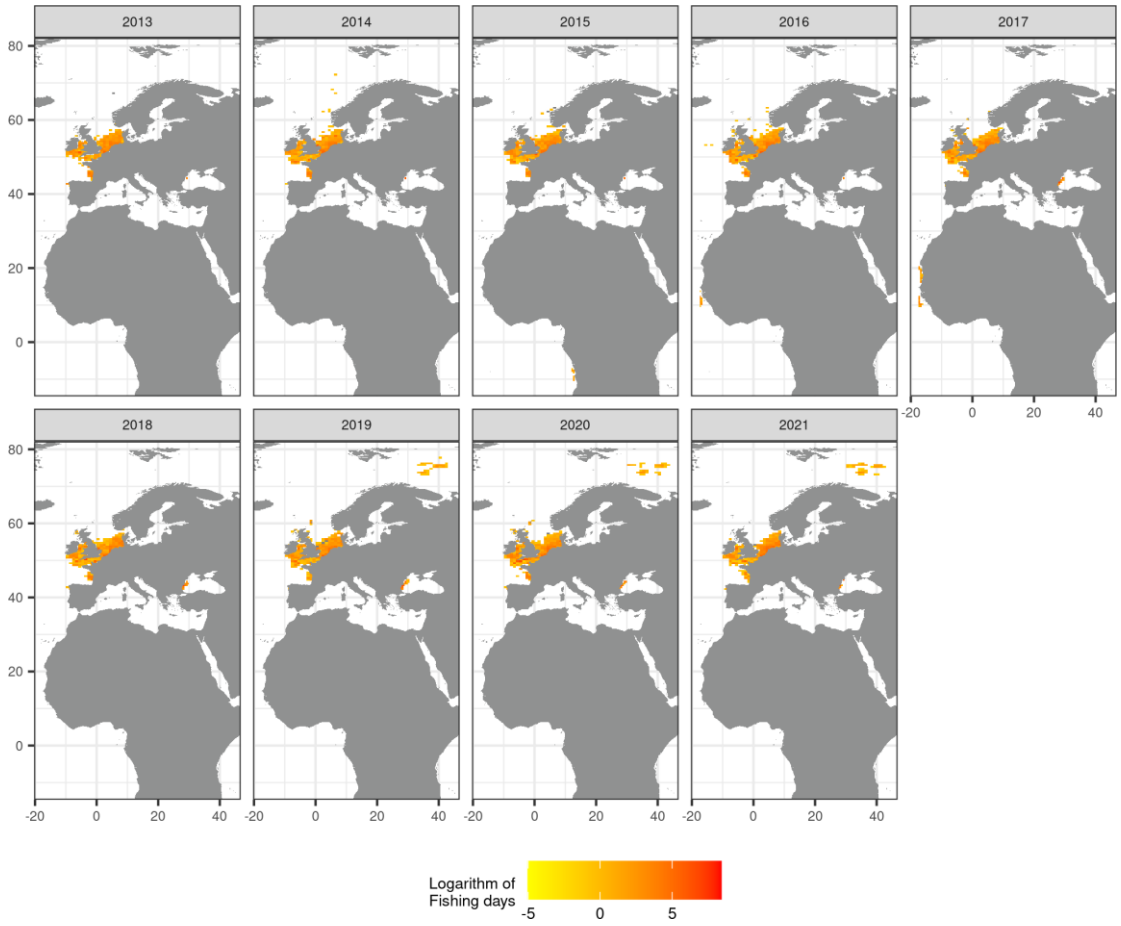
d) Seines



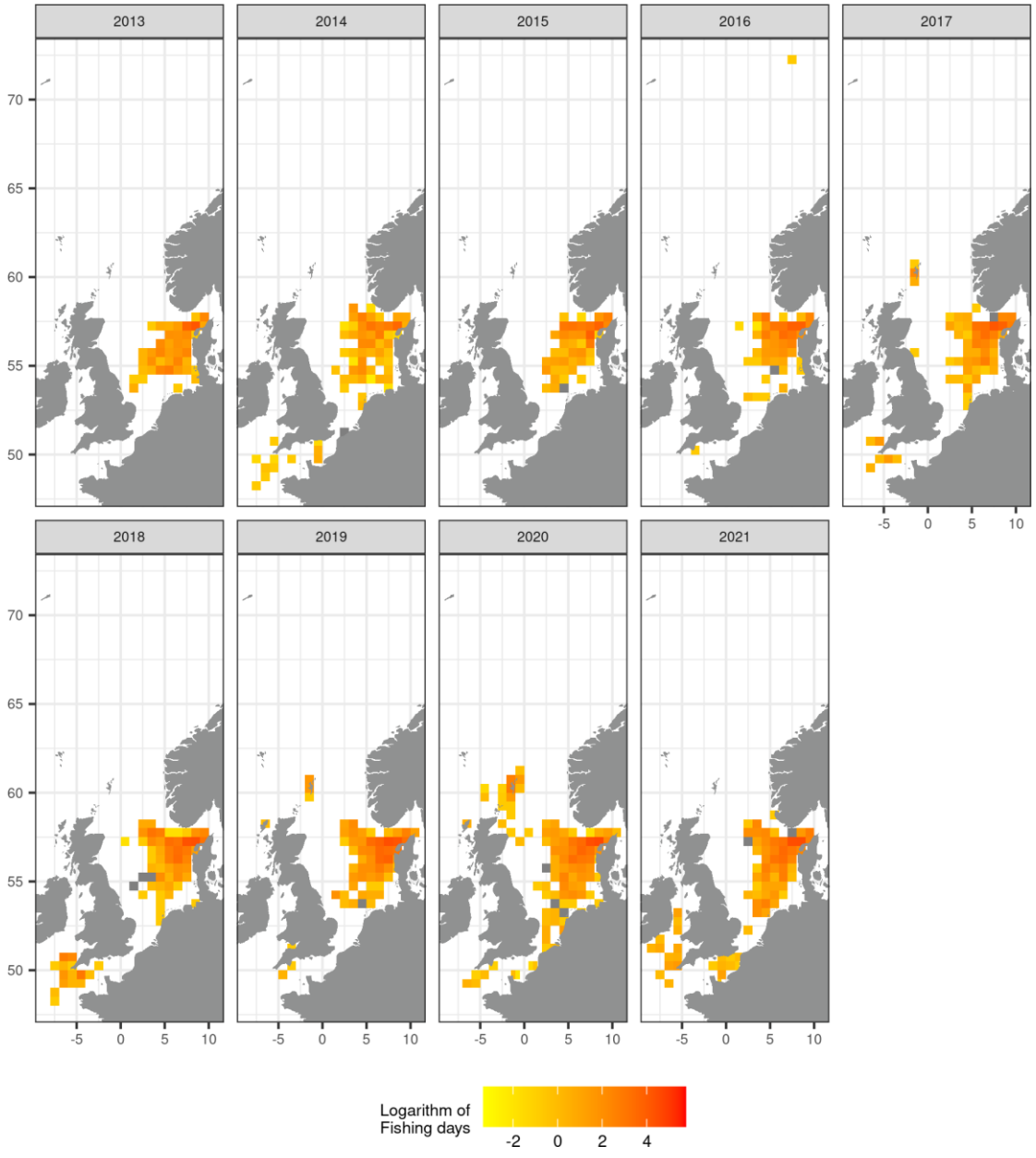
e) Surrounding nets



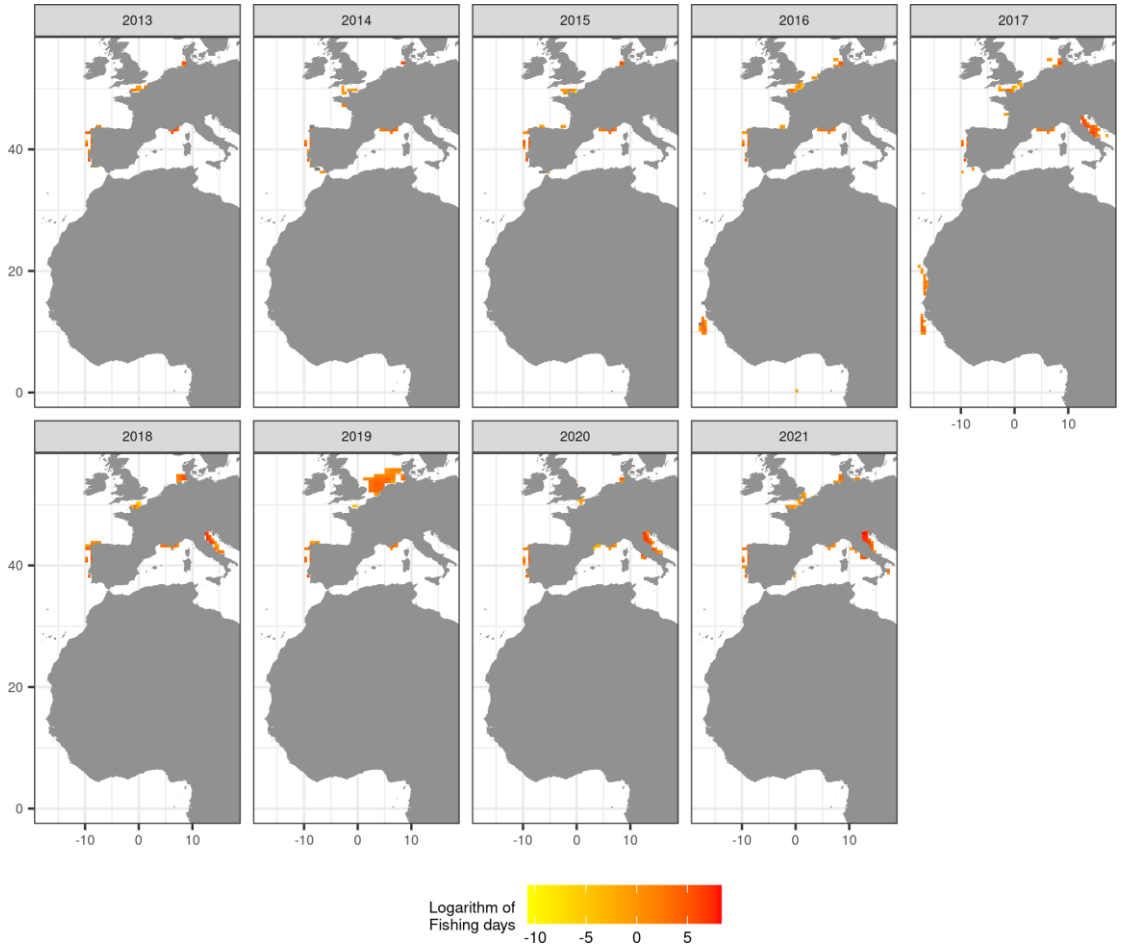
f) Beam trawlers with less than 120mm mesh size



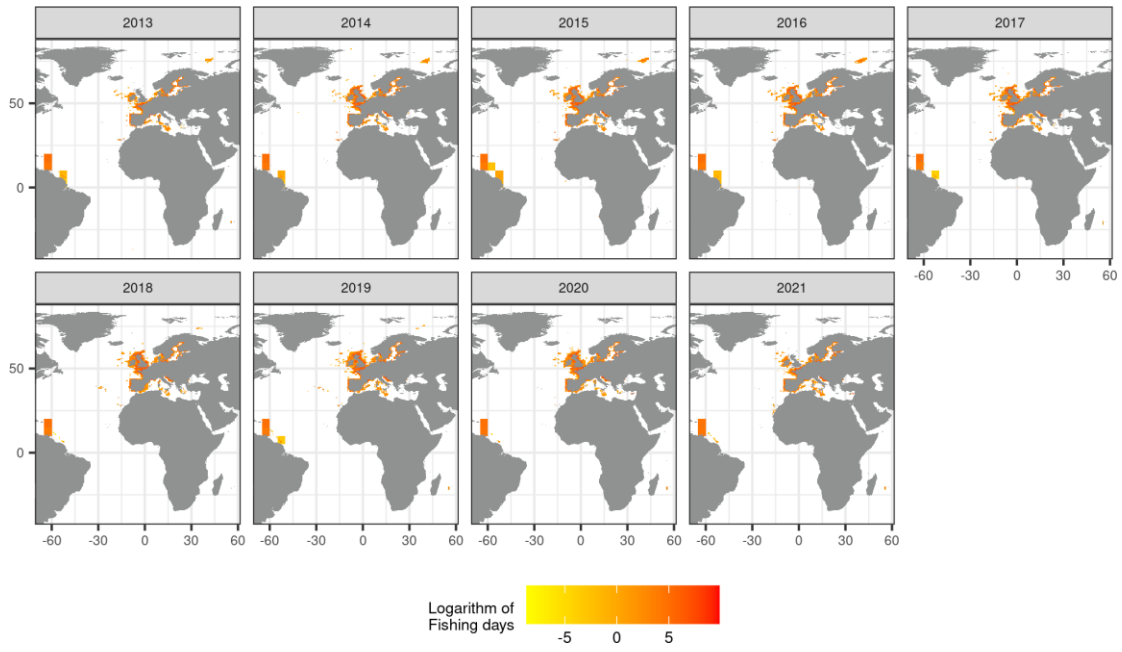
g) Beam trawlers with more than 120mm mesh size



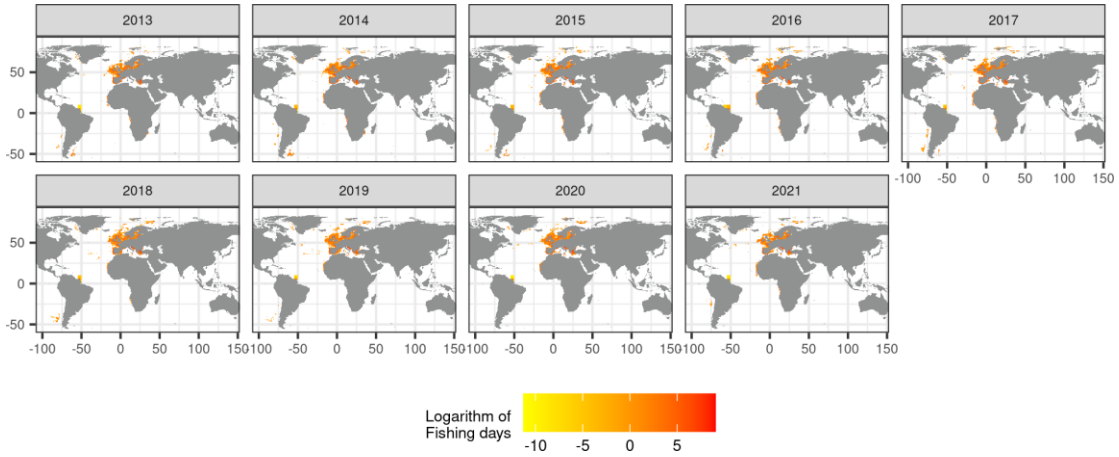
h) Beam trawlers with unknown mesh size



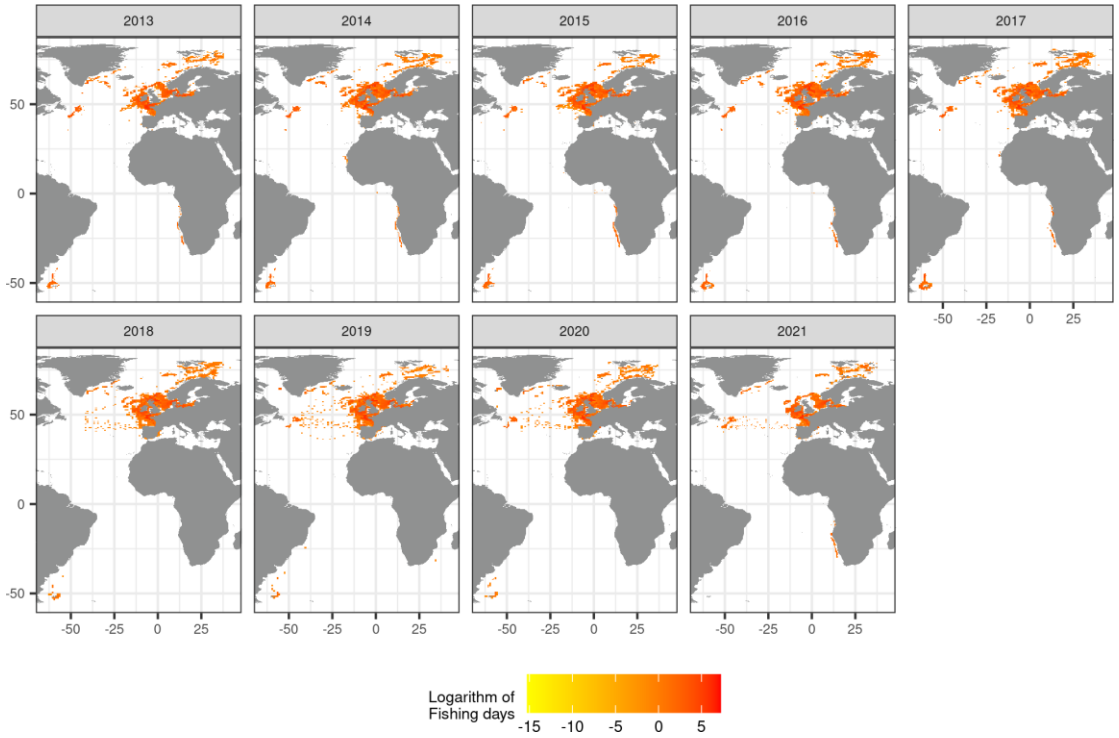
i) Traps



j) Trawlers with less than 100mm mesh size



k) Trawlers with more than 100mm mesh size



l) Trawlers with unknown mesh size

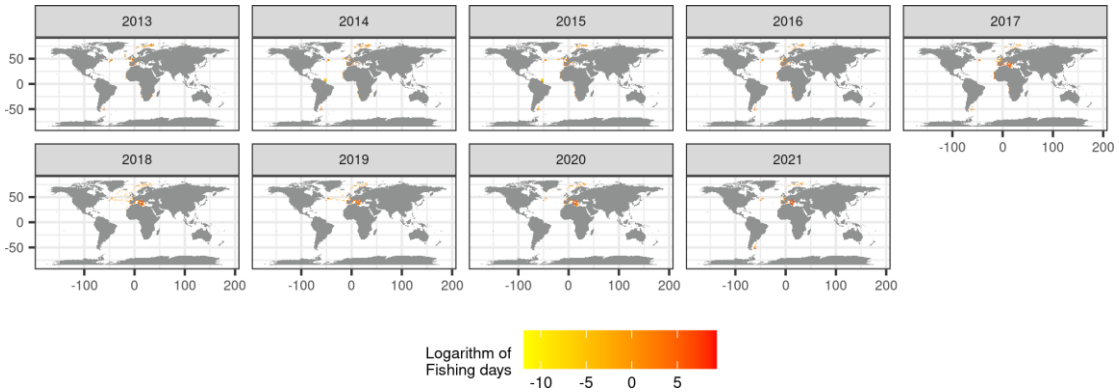
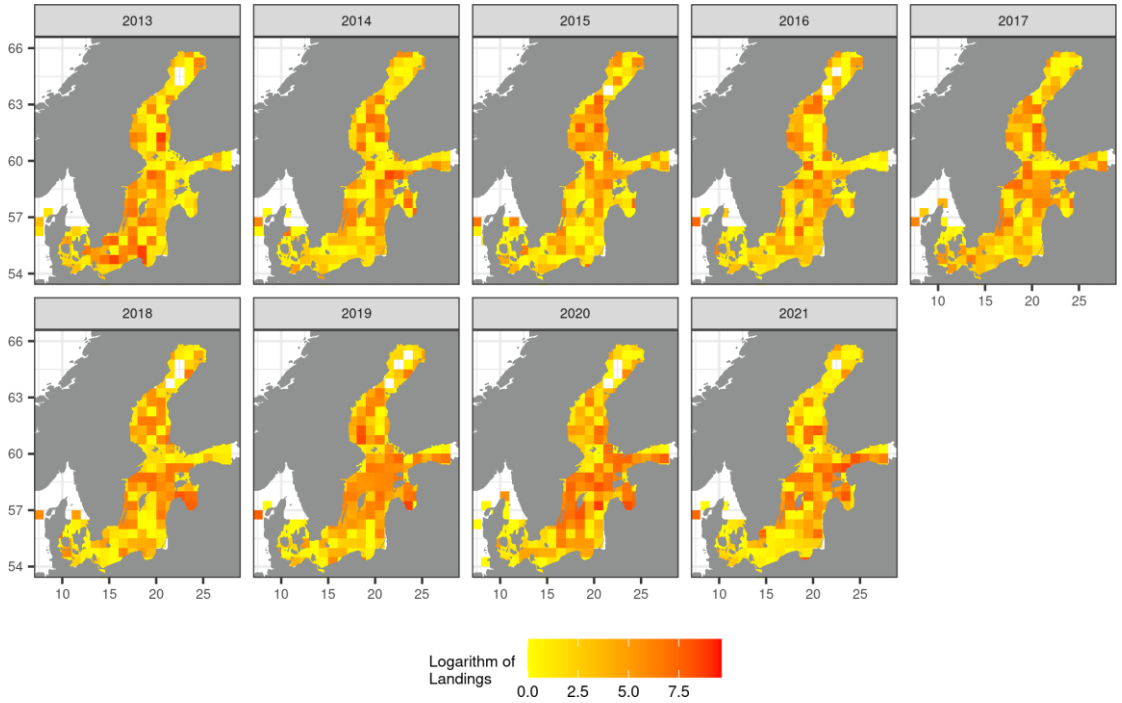
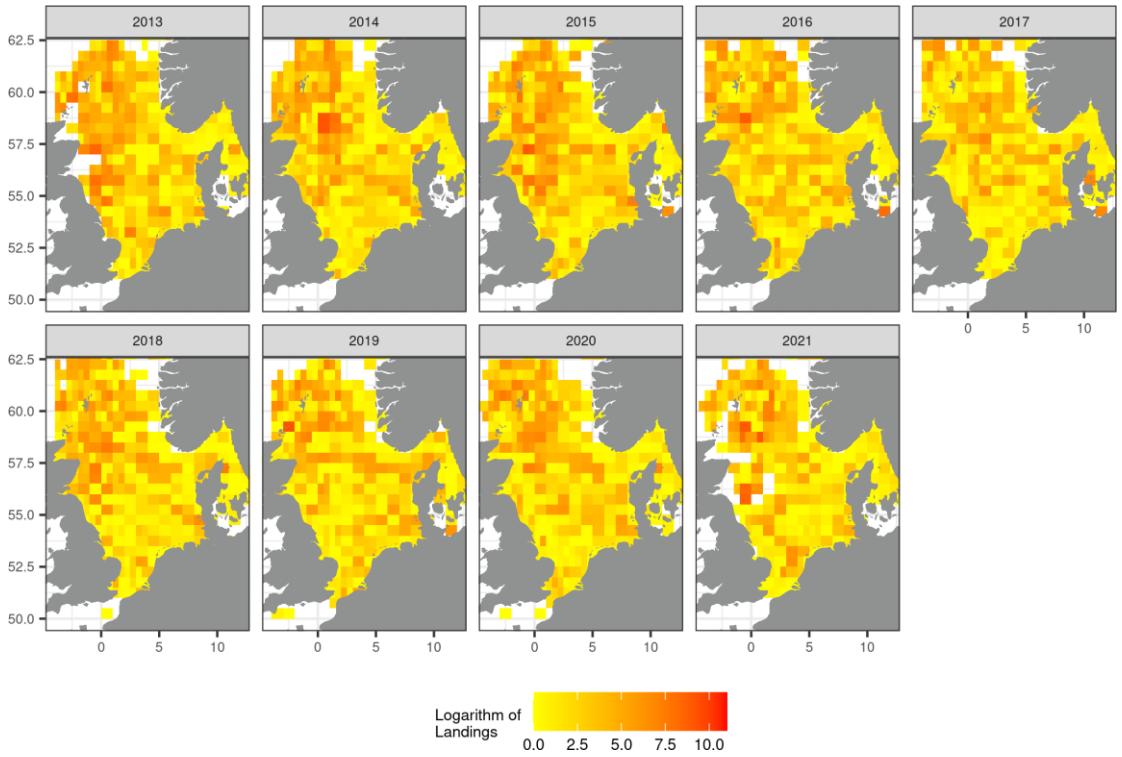


Figure 3.3.3.3: Spatial landings maps by main fishing region

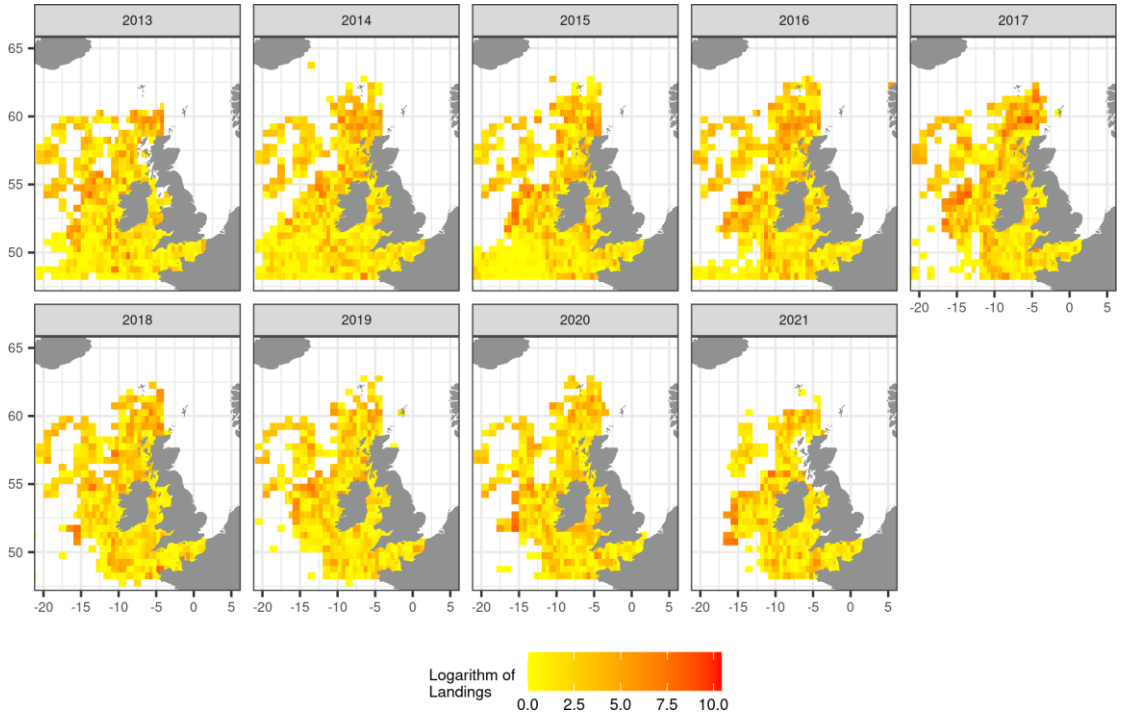
a) Baltic Sea



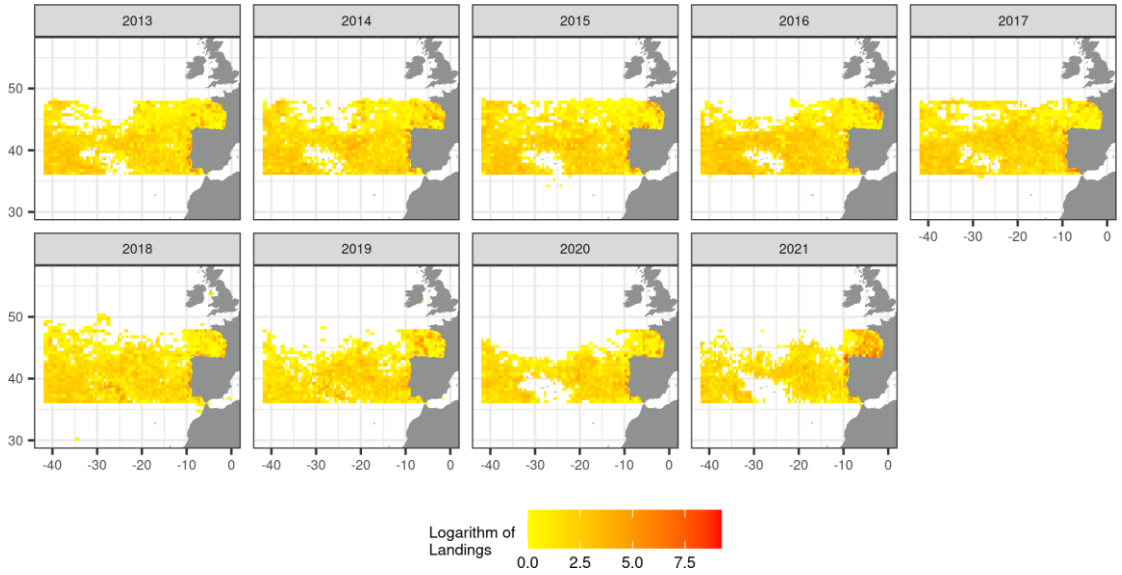
b) North Sea



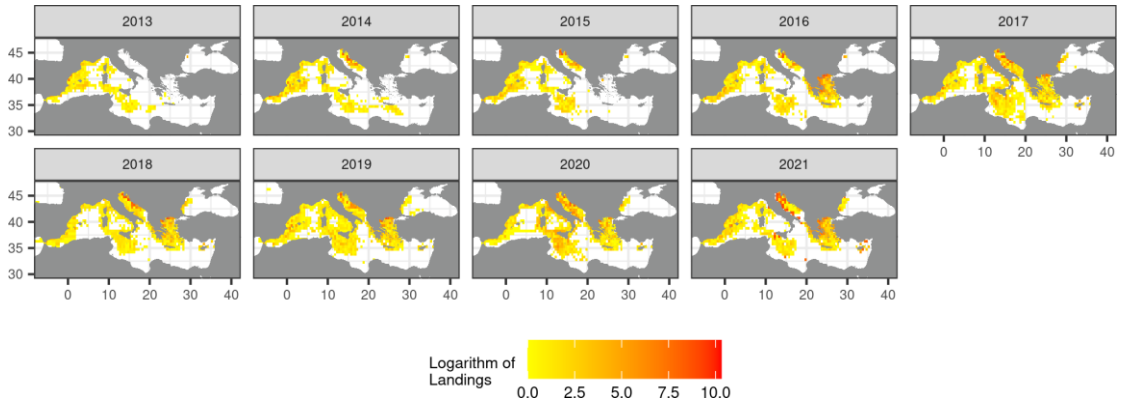
c) North Western Waters



d) South Western Waters



e) Mediterranean and Black Sea



f) Distant Waters

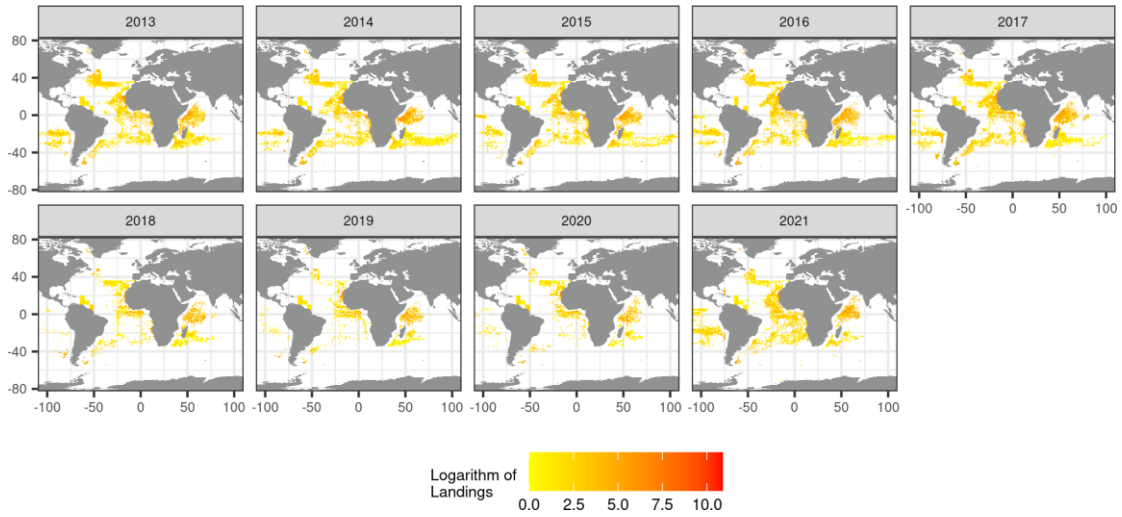
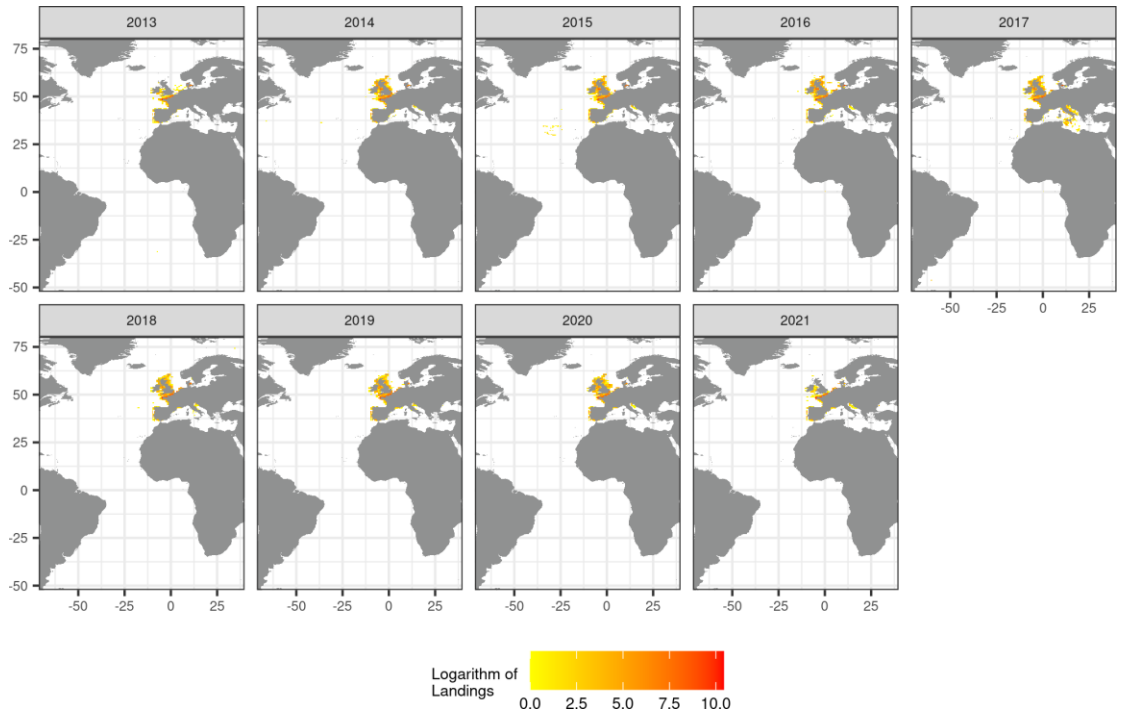
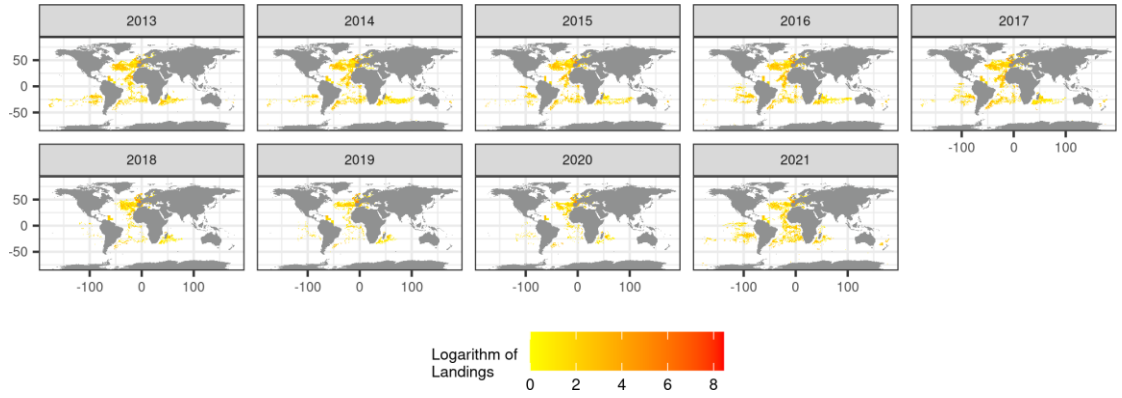


Figure 3.3.3.4: Spatial landings maps by main gear types

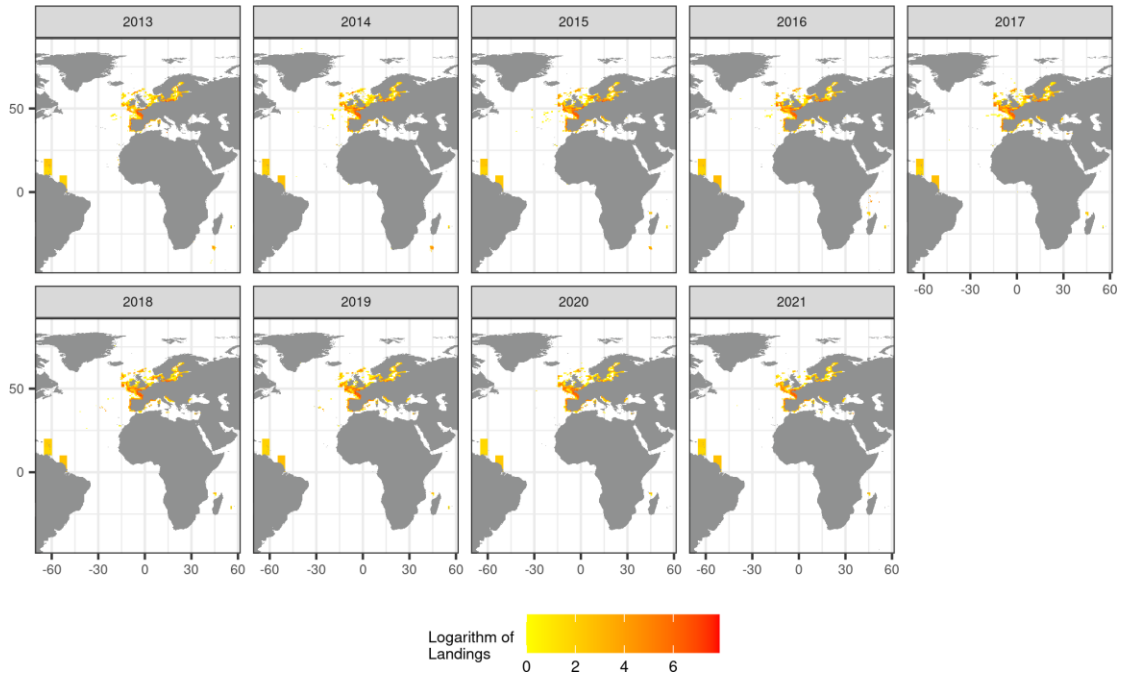
a) Dredges



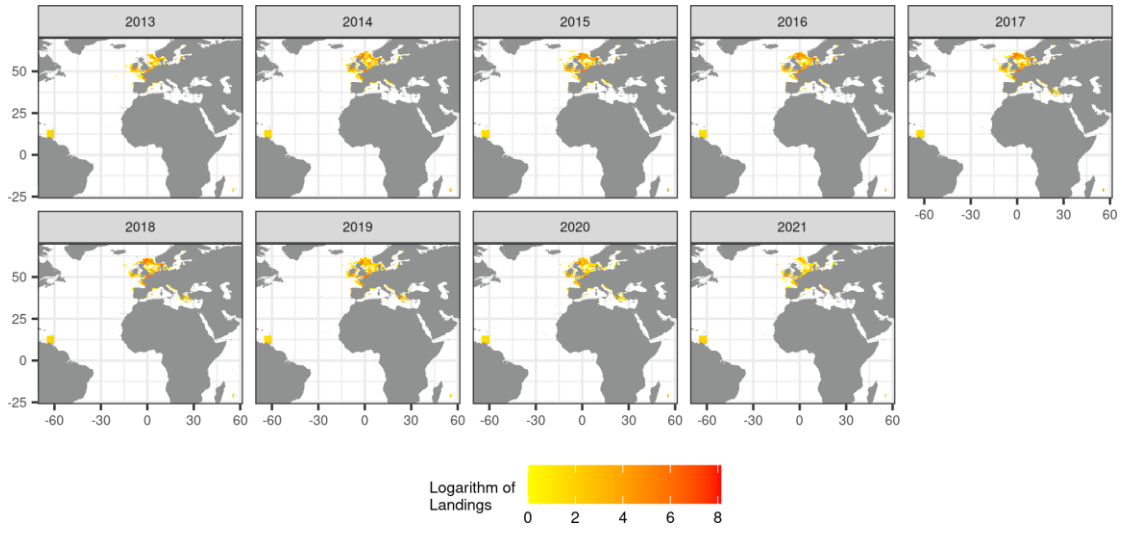
b) Hooks



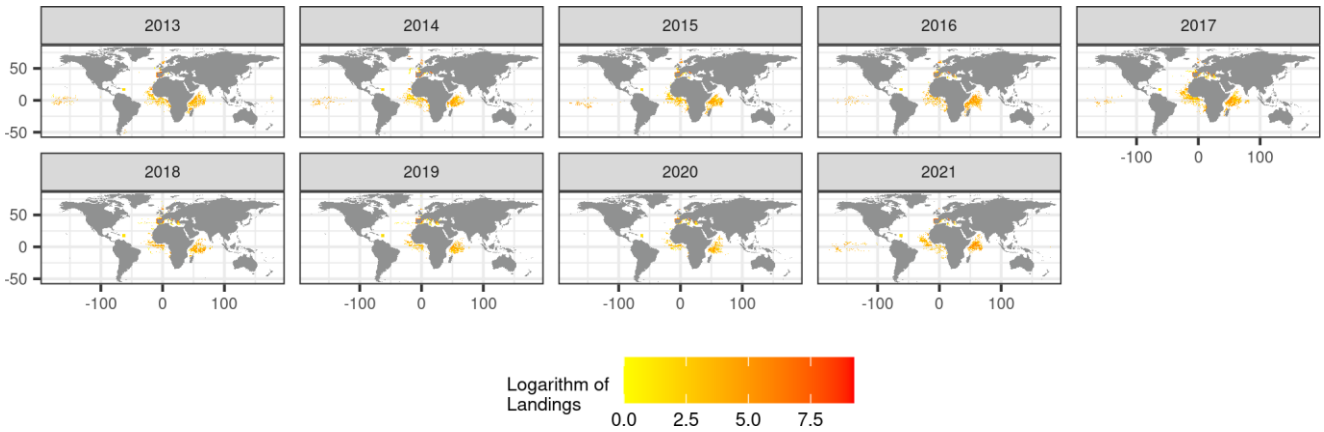
c) Nets



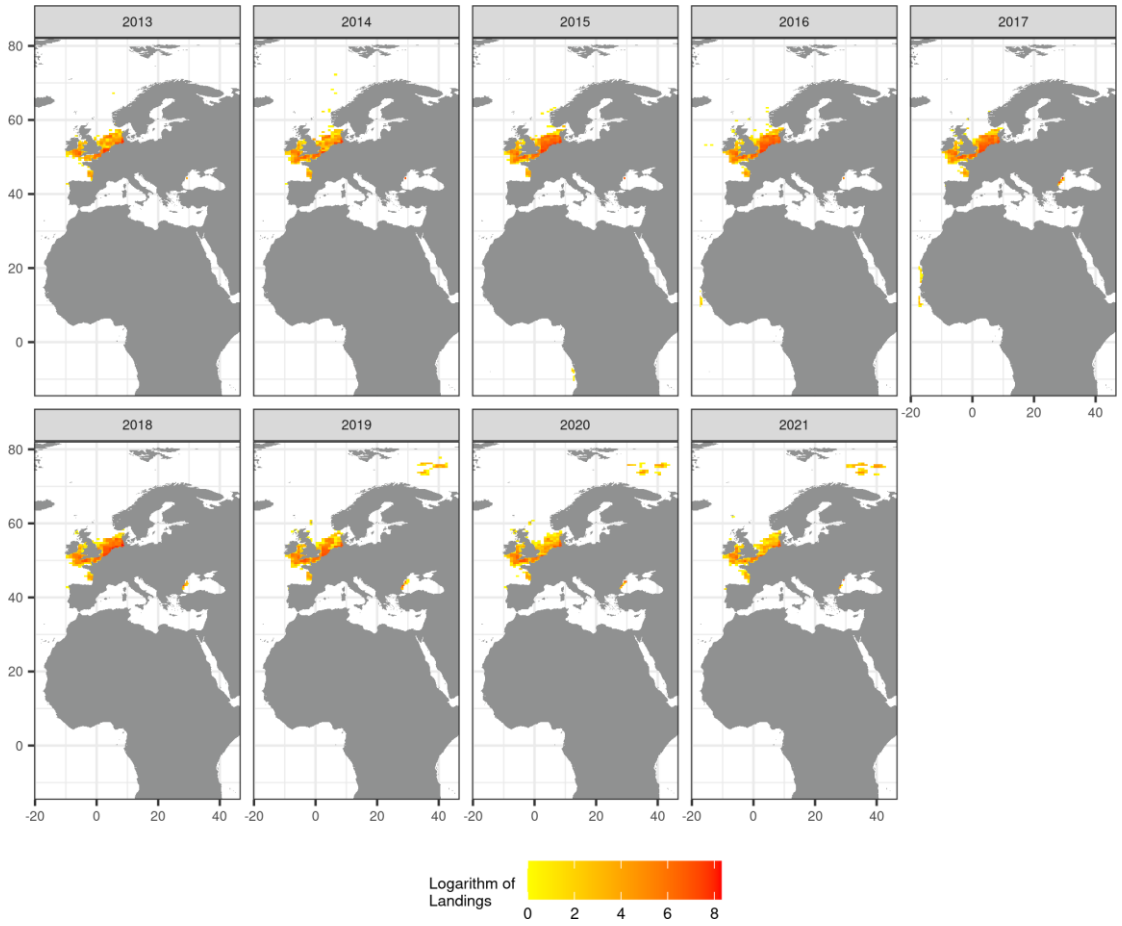
d) Seines



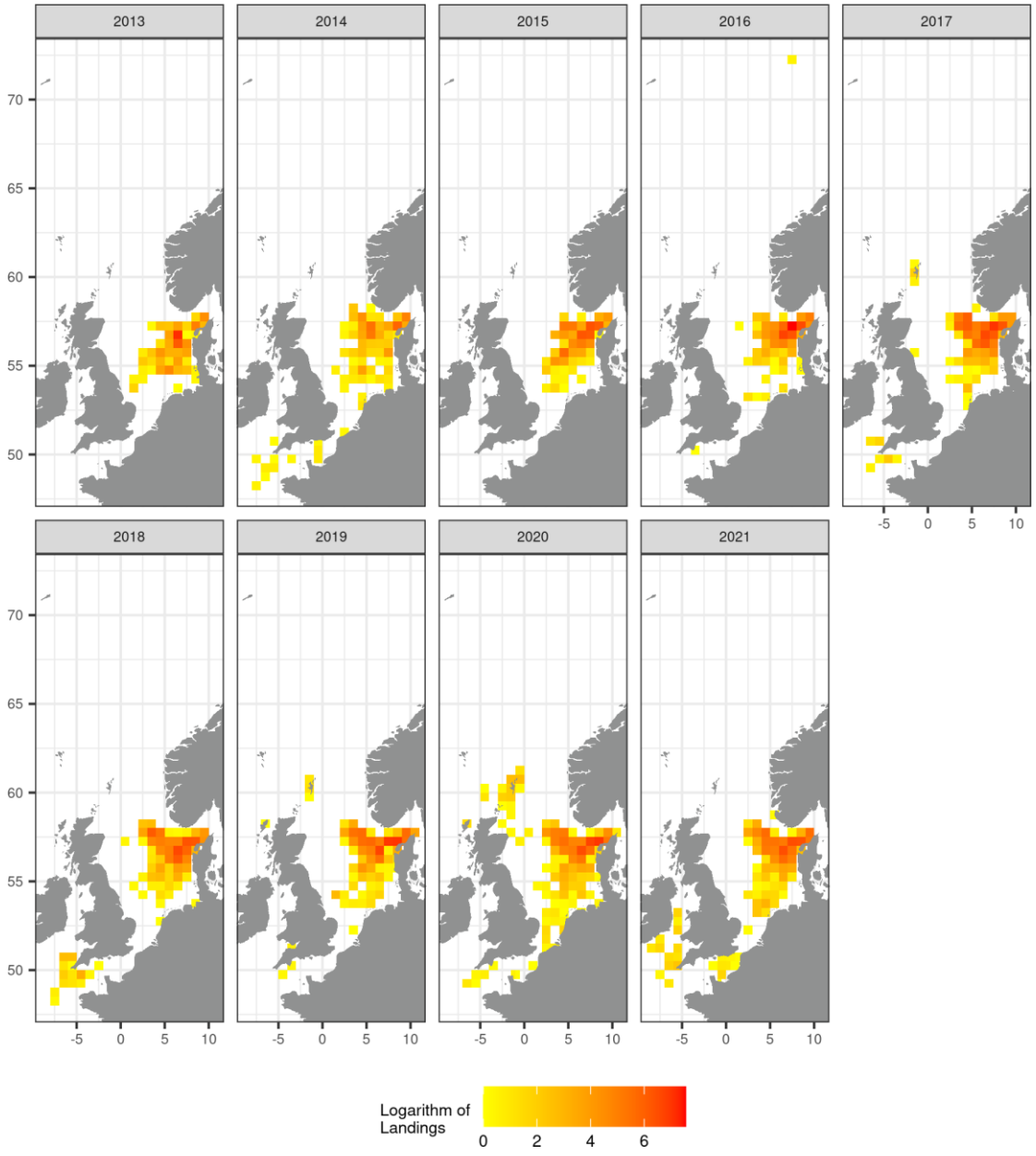
e) Surrounding nets



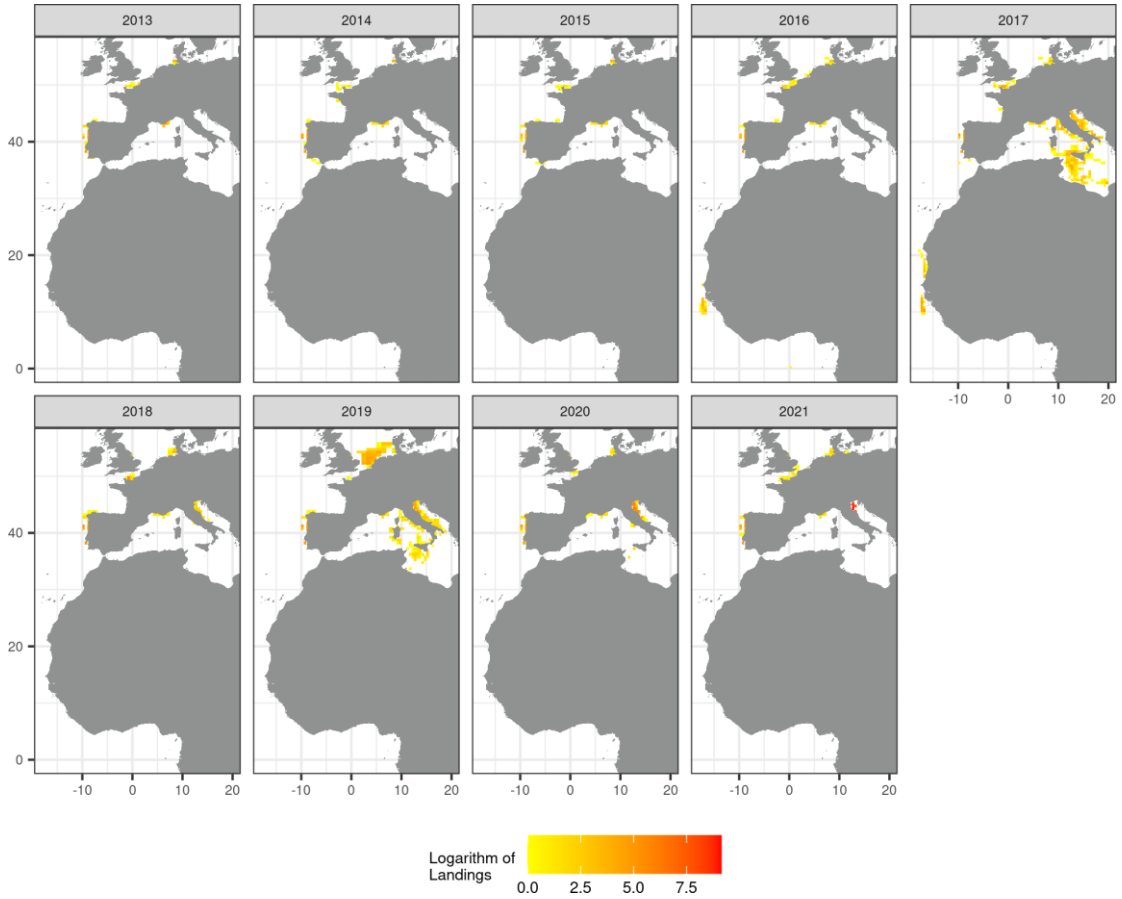
f) Beam trawlers with less than 120mm mesh size



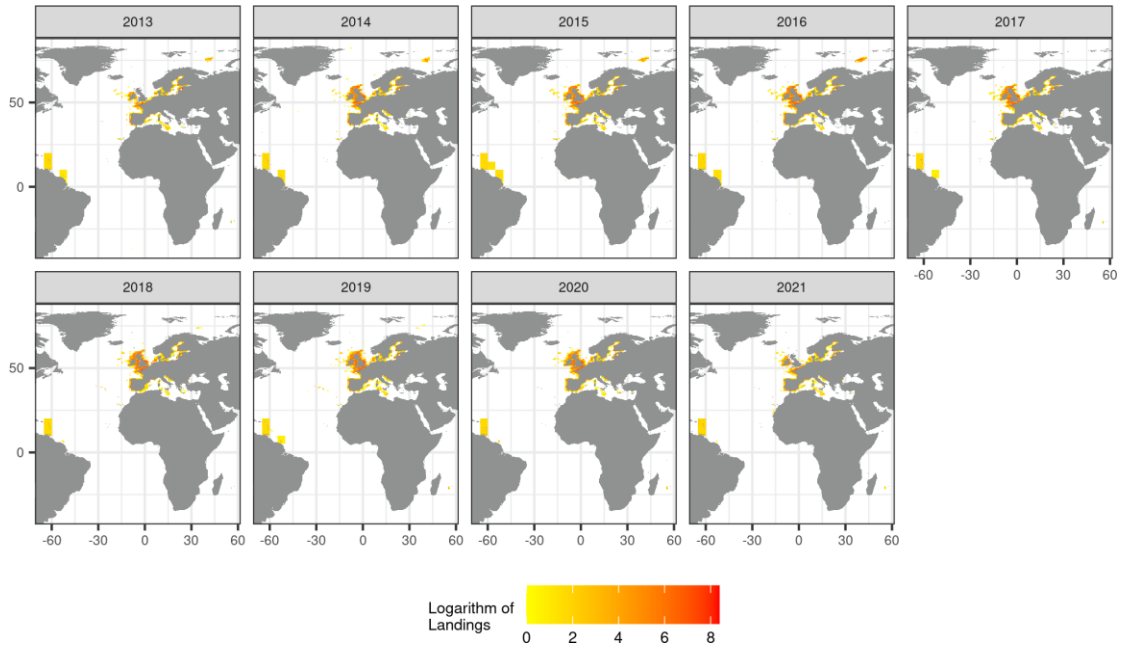
g) Beam trawlers with more than 120mm mesh size



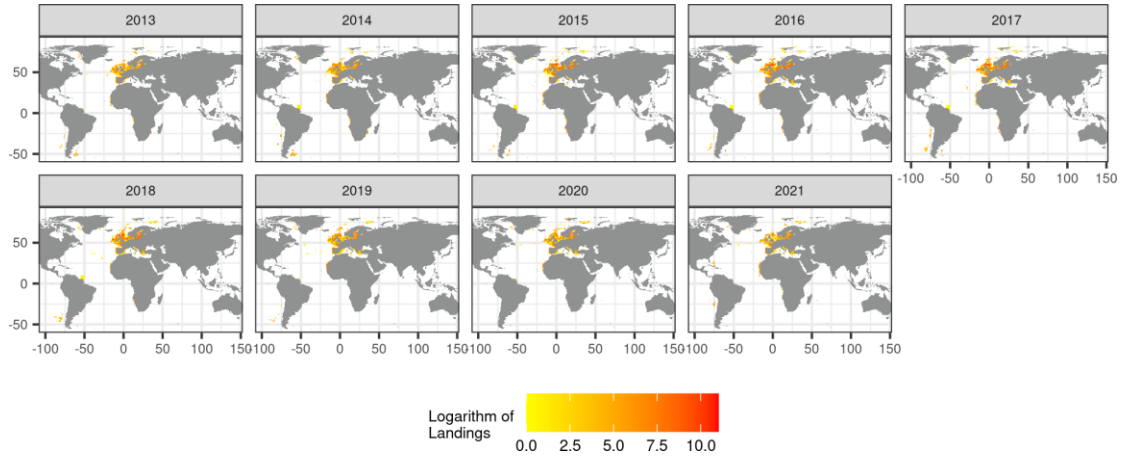
h) Beam trawlers with unknown mesh size



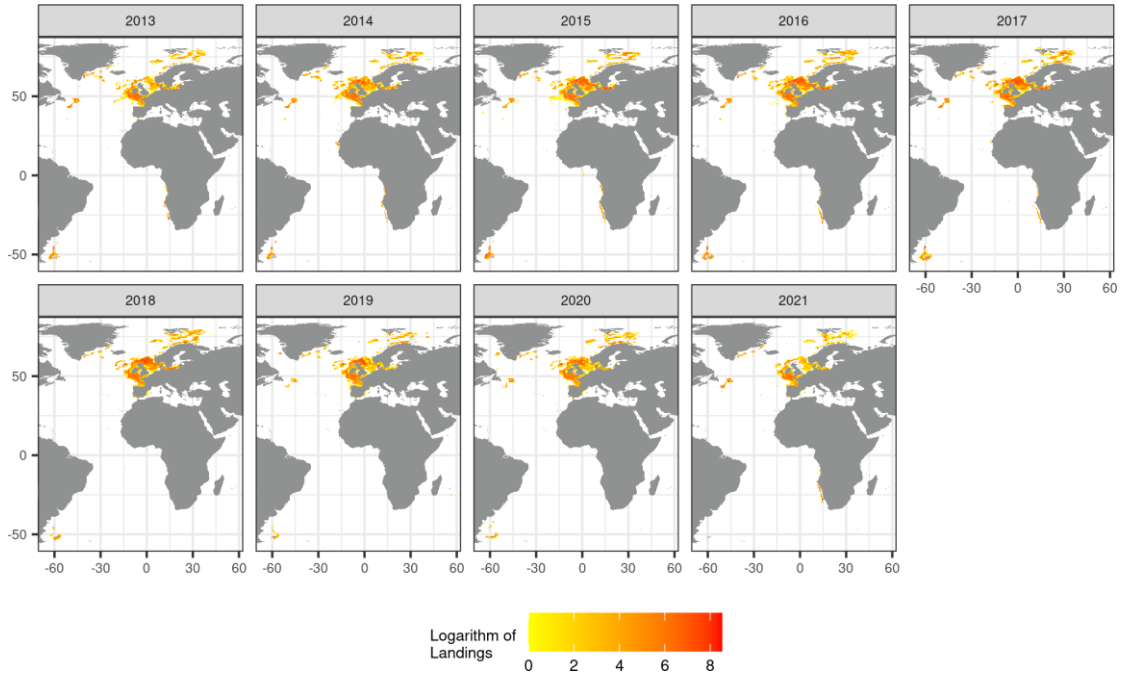
i) Traps



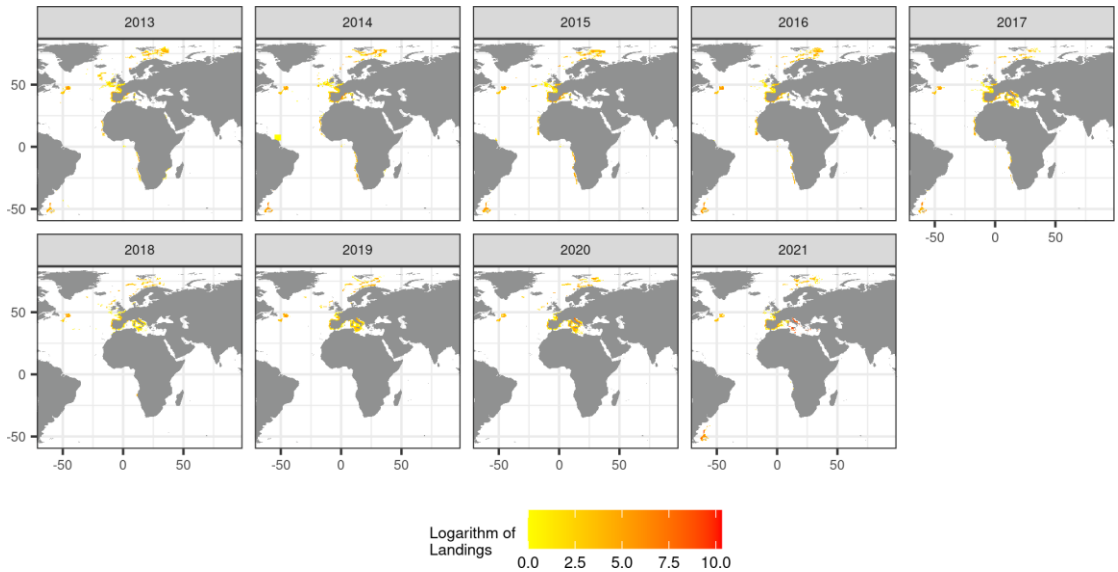
j) Trawlers with less than 100mm mesh size



k) Trawlers with more than 100mm mesh size



l) Trawlers with unknown mesh size



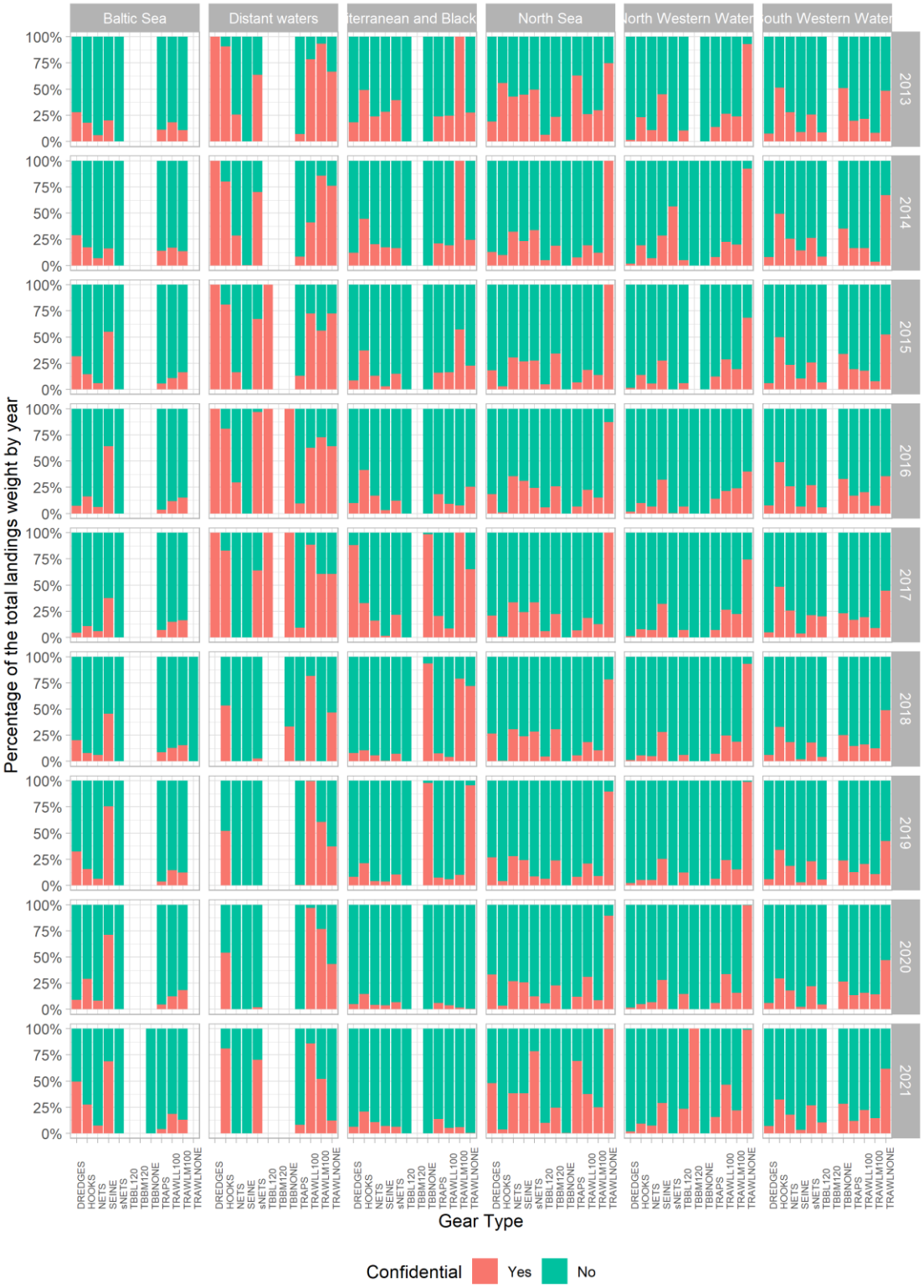
Confidential data in spatial tables

Figures 3.3.3.5 and 3.3.3.6 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 3.3.3.5: 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 2013-2021.

Figure 3.3.3.6: 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 2013-2021.

During the STECF FDI working group EWG 22-10, confidentiality issues were discussed intensively. Among others, a discussion highlighted about the spatial data dissemination (tables H and I) which, at this stage, do not include any country information, all spatial information disseminated being aggregated at the EU level. This is often insufficient for end-users which



needs this complementary information.

As an example, it is known that the previous historical dataset set up during the "STECF fishing effort regime working groups" *(not anymore updated since 2017)* is still downloaded because contains the country information. Consequently, EWG 22-10 discussed this issue and agreed to have a wider discussion next year in order to agree on an aggregated spatial data which could be disseminated including country information tackling at the same time the confidentiality issues *(at the actual aggregation level too many rows will be affected by the confidentiality rules).* It will increase information released to the public/end-users and therefore enhance transparency. The first idea to discuss could be to keep the way we disseminate actually the spatial data for all FAO areas adding a special version of the spatial information aggregated, at least for the FAO 27 area, including the country information.

3.4 Discuss data submission results following recent changes in the data call and definitions, assess feasibility to provide updated time series

3.4.1 If possible, to explore the possibilities for next years' data call to request the whole time series with the new metier codes

The RCG ISSG on métier and transversal variables groups have since 2018 worked on métier definitions. The group was requested to update and harmonise the list of métier codes used in FDI. The new list of métiers was approved by RCGs and NCs in 2020. The RCG Med & BS have evaluated the métier codes for the region during the RCG meeting in 2022, and some additional métiers have been added, mainly introducing new gear codes.

The challenge of introducing the new métier codes was discussed by the FDI EWG 2021, and the conclusion from the EWG was that for the FDI data call in 2022 it should be made possible to upload the new métier codes as proposed by the RCG ISSG on métier issues, but still be possible to upload the old métier codes.

At the STECF plenary 21-03, this recommendation was reviewed and the STECF noted that since the transition to the new métier codes will generate the need for re-uploading the full FDI time series, STECF suggested to wait until the full agreement/check of suggested new codes have been performed by the MS and the conditions for the changes to the new codes have been agreed in RCGs.

In 2021, the ICES RDBES test data call requested the new métier codes in landings and effort tables, which were submitted by MS without major issues reported, for the time period 2018-2020. In 2022 the new métier codes were requested in the ICES WGBYC data call, and also in the ICES RDBES data call for 2021 landings and effort data.

The EWG 22-10 agreed that the new métier codes agreed by RCGs should be requested in the 2023 FDI data call and that the list can be managed by the RCG ISSG on Métier and transversal variable issues, who also manages the list of codes that are used in ICES (//vocab.ices.dk/?ref=1647). This means that the métier codes approved for ICES and for the FDI data call should be the same. If new métier codes are requested, they should be sent to the ISSG who has set up a procedure for evaluating and approving métier codes.

The EWG disscussed whether the full time series should be resubmitted with new métier codes was discussed. There are two methods for assigning métier codes to the historical data:

1. To assign the new métier codes directly to the transversal data.
2. To convert the old métier codes to the new codes. For some métiers this is straightforward, for others one old métier code can have a larger mesh size range, which is split into several métiers in the new list, and a choice has to be made when assigning the new métier codes.

Submitting the full time series introduces an extra workload on the MS. Another implication is that in general the new métier codes have more detailed mesh size ranges than the old codes, meaning that data are more disaggregated, and more records would be marked as confidential if using the less than 3 vessels rule. The advantage would be to have the same codes in the database for the full time series, and that the codes are in line with ICES data calls. **Based on a**

questionnaire in the EWG 22-10 all MS indicated that it is feasible to resubmit the historical data according to the updated list of the métier codes.

The ICES RDBES has been prepared to be able to export data to the FDI data call, with the advantage of having corresponding data in ICES and FDI and biological stock estimates are the same. Currently, the RDBES landings and effort data formats do not include mesh size ranges, which are only available from the métier level 6 codes. In the current FDI ToR 2 to provide landings and discards data for exemptions in discard plans, the mesh size ranges in the métier codes do not follow the mesh size ranges defined in the exemptions for the discard plans, where they can split at e.g. 80 mm, while the metier code mesh size range is 70-89. **Therefore, the EWG considers that an optional field with the FDI mesh size ranges should be requested in the RDBES effort and landings tables.**

3.4.2 Inclusion of UK EEZ indicator for areas that have a borderline between EU and UK. The FDI data call requested this reporting with EEZ indicator for UK for 2021 in the 2022 data call. The UK EEZ indicator needs to be asked for the whole time series in next years' data call.

It is an advantage having the UK EEZ indicator in the FDI dataset to avoid additional data calls to MS, like the Non-Quota Species data call issued in spring 2022. The inclusion of the UK EEZ indicator is only affecting MS fishing in UK waters. It was not a big issue for MS to provide this information for 2021 data. However, it was found that not all MS use same approach to identify fisheries within the UK EEZ in historical data, where the EEZ was often reported as EEC. The EWG agreed to include the methods applied in national chapters.

General considerations

The EWG prefers updating the full time series with both changes (métier codes and EEZ) at the same time in 2023.

In FDI data call 2023, the EWG proposed either requesting full time series 2013-2022 with new métier codes and the EEZ indicator for UK, or extending the time series one year back, requesting submission of only 2012 and 2022 data.

4 RECOMMENDATIONS FOR FUTURE DATA CALLS

The EWG discussed the feasibility of providing data for the period before 2013. The majority of the experts expressed the opinion that the quality of the data before 2013 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 call (see Table 4.1. for details).

The EWG recommends that a methodology meeting be held every second year. These methodology meetings should form an essential pillar to the functioning of this EWG as they facilitate the development of methods used to answer the data call and check quality of the data. Methodology meeting in 2021 vastly improved the quality of the data (and subsequent advice), and significantly reduced the time required for data checking during the advice meeting. Despite these vast improvements in 2021 there remains much work to be done to develop these methods and guarantee the continued quality of the FDI database. The methodology meetings could also provide a space in which historical data can be explored and interrogated for stability and consistency across years. This feature of the meeting will become increasingly important as FDI requests more historical data in future data calls (pre 2013).

Next year data call

For the next year data call, the EWG agreed on calling the data with the same tables format used in 2022 data call.

Tables for spatial data

The EWG suggests 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, the EWG proposes to request, in addition to data for year 2022, the resubmission of data for the period

2013-2021. Resubmission of previous years' data will not be mandatory for Member States that are not affected by the change of those codes.

Table 4.1: Availability of historical data by MS.

	Table A. Catch summary	Table B. Refusal rate	Table C. Discards age data	Table D. Discards length data	Table E. Landings age data	Table F. Landings length data	Table G. Effort summary	Table H. Landings by rectangle	Table I. Effort by rectangle	Table J. Capacity and fleet segment effort	Table K Discards estimated by domain	Are all species reported in FDI?	Is it feasible to resubmit data?*	Comments
BEL	2004	2015	2004	2004	2004	2004	2003	2006	2006	2004	2004	Yes, all species are reported in FDI.	Yes	
BGR	2009	2018	-	-	-	-	2009	2017	2017	2009	-	Yes, all species are reported in FDI.	Yes	
CYP	*	**2008	-	-	-	-	*	2017	2017	2009		Yes, all species are reported in FDI.	Yes	*Cannot provide by quarter old time series data -Table A & G and have good quality data. If not by quarter historical data can be provided**Data call for Table B. Refusal rate says that Member States should only submit data to this table if their sampling design can be considered a probability based vessel selection design. In the absence of a probability based vessel selection design please submit 'NK'. Cyprus until recently did not have this sampling design and thus, the code 'NK' will be used for old time series data.
DEU	2002	2007	2002	2002	2002	2002	2002	2002	2002	2002	2002	Yes, all species are reported in FDI.	Yes	
DNK	2000	2012	2000	2000	2000	2000	2000	1987	1987	2000	2000	Yes, all species are reported in FDI.	Yes	
ESP (ICES)		2016		2009		2009						Yes	Yes	It is not yet known from which year data can be given for Tables A, G, H, I, J, C and E. As soon as this data is known, the information will be updated.
ESP (Mediterranean)		2021	-	-	-	-						Yes	Yes	It is not yet known from which year data can be given for Tables A, G, H, I and J. As soon as this data is known, the information will be updated.
ESP (CECAF)		-	-	2009	-	2009						Yes	Yes	It is not yet known from which year data can be given for Tables A, G, H, I, J, D and F. As soon as this

	Table A. Catch summary	Table B. Refusal rate	Table C. Discards age data	Table D. Discards length data	Table E. Landings age data	Table F. Landings length data	Table G. Effort summary	Table H. Landings by rectangle	Table I. Effort by rectangle	Table J. Capacity and fleet segment effort	Table K Discards estimated by domain	Are all species reported in FDI?	Is it feasible to resubmit data?*	Comments
														data is known, the information will be updated.
ESP (Tuna fisheries)		-	-	-	-							Yes	Yes	It is not yet known from which year data can be given for Tables A, G, H, I , J, Table F. As soon as this data is known, the information will be updated. It is necessary to solve the problem of métiers
ESP (Long distance)		-	-	-	2009	2009						Yes	Yes	It is not yet known from which year data can be given for Tables A, G, H, I and J. As soon as this data is known, the information will be updated.
EST	2008*	2018	2013	2013	2013	2013	2013	2013	2013	2013	-	Yes, all species are reported in FDI.	Yes, for data from 2013	* Tab. A - 2008-2012 data only for Baltic.
FIN	2009	2018	2009	2009	2009	2009	2009	2009	2009	2009	2009	Yes, all species are reported in FDI.	Yes	2009 biological data is not complete
FRA (Atlantic)	2000	2020	2008	2008	2008	2008	2000	2000	2000	2000	NA	Yes, all species are reported in FDI.	Yes	Availability of fishing activity data and biological data relyed upon the vessels supra-region
FRA (Mediterranean)	2008	2020	NA	NA	NA	NA	2008	2008	2008	2008	NA	Yes, all species are reported in FDI.	Yes	Availability of fishing activity data and biological data relyed upon the vessels supra-region
FRA (Other regions)	2008	2020	NA	NA	NA	NA	2008	2008	2008	2008	NA	Yes, all species are reported in FDI.	Yes	Availability of fishing activity data and biological data relyed upon the vessels supra-region
GRC	2013	2013	-	-	-	-	2003	2016	2009	2003		Yes, all species are reported in FDI.	Yes, for data from 2013	for some years, complete data sets cannot be submitted
HRV	2012	2013	-	-	-	-	2012	2014	2014	2012	-	Yes, all species are reported in FDI.	Yes	Croatia provides spatial data for 2014-2016 as it is available, even though Mediterranean MS are obliged to submit spatial data from 2017. Member States should only submit data on response rates if their sampling design can be considered a probability based vessel selection design. In the absence of a probability based vessel selection 'NK' should be

	Table A. Catch summary	Table B. Refusal rate	Table C. Discards age data	Table D. Discards length data	Table E. Landings age data	Table F. Landings length data	Table G. Effort summary	Table H. Landings by rectangle	Table I. Effort by rectangle	Table J. Capacity and fleet segment effort	Table K Discards estimated by domain	Are all species reported in FDI?	Is it feasible to resubmit data?*	Comments
														used. Croatia thus provided the code 'NK'.
IRL	2003	2019	2003	2003	2003	2003	2003	2003	2003	2003	2003	Yes, all species are reported in FDI.	Yes	
ITA	2008	2008					2008	2017	2017	2008		Yes, all species are reported in FDI.	Yes, for data from 2013	For spatial sets the more reliable data is from 2013
LTU	2008	2013	2011	2011	2011	2011	2008	2013	2013	2008		Yes, all species are reported in FDI.	Yes, for data from 2013	There is difficulty to provide a hight quality the spatial data for 2012 and earlier
LVA	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	-	Yes, all species are reported in FDI.		
NLD	2000	-	2011	2011	2003	2003	2000	2000	2000	2000	2011	Yes, all species are reported in FDI.	Yes	For historical data the quality is uncertain especially at the rectangle resolution. However, it might be possible to provide data before 2000.
POL	2011	2017	2011	2011	2011	2011	2011	2011	2011	2011	2011	Yes, all species are reported in FDI.	Yes	
PRT - Mainland	2012	2017	*	*	*	*	2012	2012	2012	2008	-	Landings and effort tables: all species are reported in FDI; Biological tables: Table C, D, E, F only species with data submitted to ICES Intercatch (in reply to the annual "ICES Fisheries Data Call")	Yes	* need some time to check this internally
PRT - Madeira OMR														
PRT - Azores OMR	2019	2019		2019*		2019*	2019	2019	2019	2012		Yes		* It is expected to have these data since problems with the database are solved

	Table A. Catch summary	Table B. Refusal rate	Table C. Discards age data	Table D. Discards length data	Table E. Landings age data	Table F. Landings length data	Table G. Effort summary	Table H. Landings by rectangle	Table I. Effort by rectangle	Table J. Capacity and fleet segment effort	Table K Discards estimated by domain	Are all species reported in FDI?	Is it feasible to resubmit data?*	Comments
SVN	2005	2005	-	-	-	-	2005	2005	2005	2005	-	Yes, all species are reported in FDI.		
SWE	2002	2016	2003	2003	2003	2003	2002	2002	2002	2002		Yes, all species are reported in FDI.	Yes	

*** Is it feasible for your MS to resubmit the historical data according to the updated list of the metier codes?**

5 CONTACT DETAILS OF EWG-22-10 PARTICIPANTS

[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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LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on:
http://stecf.jrc.ec.europa.eu/web/stecf/ewg2210

List of background documents:

EWG-22-10 – Doc 1 - Declarations of invited and JRC experts (see also section 5 of this report – List of participants)

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

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

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

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

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-20-10); Publications Office of the European Union, Luxembourg; EUR 28359 EN; doi:10.2760/61855

Scientific, Technical and Economic Committee for Fisheries (STECF) – Fisheries Dependent Information (STECF-21-12); Publications Office of the European Union, Luxembourg; EUR 28359 EN; doi:10.2760/3742

6 ANNEXES

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 for the 2021 data was determined based on the midpoint of the rectangle information (the EEZ indicator code should include UK for the 2021 data)

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 1.1.1 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.

Table A1.1.1: Thresholds for providing biological data

Data	Variable	Sampled								
2018-2019	discard quantity	2	and	65						
		2			and	>=70 kg landings sampled weight or total weight				
		2					and	>= 20 kg discards sampled weight or total weight		
	discards length distribution	2	and	65						
		2			and	>=70 kg landings sampled weight				
		2			and	>= 20 kg discards sampled weight	and	discard ratio < 0.2		
		2			and	>= 20 kg discards sampled weight			and	>= 100 length measurements
	landings length distribution	2	and	65						
		2			and	>=70 kg landings sampled weight				
		2			and	>= 20 kg discards sampled weight	and	>= 100 length measurements		
		2			and	>= 20 kg discards sampled weight			and	discard ratio >=0.2
2020-2021	discard quantity	2	and	65						
		2			and	>=70 kg landings sampled weight or total weight				
		2					and	>= 20 kg discards sampled weight or total weight		
	discards length distribution	2	and	65	and	>=30 discard length measurements				
		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
	landings length distribution	2	and	65						
		2			and	>=70 kg landings sampled weight				
		2			and	>= 20 kg discards sampled weight	and	>= 100 length measurements		
		2			and	>= 20 kg discards sampled weight			and	discard ratio >=0.2

Table A (landings) and table H:
TOTWGHTLANDG and TOTVALLANDG are based on combined information of logbook data and sale slips. The actual landed weight and value are split according to the logbook information on hours fished in the respective rectangles.

Table G and table I:
TOTSEADAYS, TOTFISHDAYS (table G) and EFFECTIVE_EFFORT (table I) were calculated using the 'fecR' package. TOTKWDAYSATSEA and TOTKWFISHDAYS and calculated as respectively days at sea and fishing days multiplied by the power of the vessel in kilowatts. Same approach for calculating TOTGTDAYSATSEA and TOTGTFISHDAYS with the gross tonnage of the vessel. The engine power and gross tonnage are related to the fleet throughout the year and not to the fleet on the 1st of January.
For the calculation of HRSEA, the total hours at sea of a trip was split proportionally to the days at sea, over the areas where fishing activity was recorded for that trip.

Table J:
To determine TOTKW, TOTGT, AVGAGE and AVGLOA, the fleet was not considered on the 1st of January. The most recent vessel configuration throughout the year was selected.
PRINCIPAL_SUB_REGION of a vessel for a certain year was determined based on the highest fishing days recorded for a certain fishing area.

Data availability

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

Coverage

General comments:
Belgium provided fleet specific landings data for the period 2014-2021 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 . 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 2014-2021 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 for the 2021 data, 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; a rectangle from the same trip (if possible), metier and area combination was taken to allocate to missing rectangles. Over the course of 2022 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 2019 and 2020, no below minimum reference size landings or industrial bycatch was included in the FDI data set. The 2021 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.

Comparison with AER data:
For the AER data call, the fleet was not considered on the 1st of January. The most recent vessel configuration throughout the year was selected to determine kWDays, GTDays, kWFishDays and GTFishDays. For the FDI data call, the engine power and gross tonnage are related to the fleet throughout the year.
For the AER data call, the days at sea and fishing days calculation algorithm is analogues to the one applied by the fecR package. However, the calculated days at sea for a trip are split proportionally to the hours at sea over the ICES areas on which hours at sea were registered. Whereas in the fecR algorithm, the calculated days at sea for a trip is split equally over dates on which fishing occurs and the effort for each fishing date is split equally over the fishing activity on that date. For active gears in the AER data call, each fishing date has 1 fishing day that is split proportionally to the fishing hours over the ICES areas on which fishing occurs. Whereas in the fecR algorithm, each fishing date has 1 fishing day that is split equally over the ICES areas on which fishing occurs. The passive gears are treated equally. So, the total days at sea and fishing days in the FDI data set matches with the totals in the AER data set but the distribution by area is different. Small differences between the 2021 effort variables submitted in response to the AER data call and the ones submitted in response to the FDI data call can be explained by the data corrections that were done between February 2022 and June 2022. Because a new database system was running from 2021 onwards and the data quality check procedures could not be implemented on time, more data quality issues were identified in the 2021 data (see also section 3: Coverage).

Overall the 'total weight landed' reported in the FDI data set is comparable with the landings provided in response to the AER data call. Some differences can be explained by the misreporting of sole in area 7d, 7h and 7j that were taken into account for the FDI data call but not for the AER data call. Furthermore for 2019, 2020 and 2021, no below minimum reference size landings or industrial bycatch was included in the FDI data set.

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 contain 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 the 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 datacall is slightly higher than the Eurostat data (4 vessels more for 2020) because the data for Eurostat is from 31st 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 31st 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 provided data 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 2021/2065 of 25 August 2021 establishing a discard plan for turbot fisheries 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 2022, 2021, 2020 and 2013 data were uploaded. 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

harbor, gear type and vessel length group. If there is no similar fisheries where the rectangle is reported from a harbor, the ICES rectangle closest to the harbor 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.

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 is no samples of unwanted catches within that aggregation, the code "NK" is inserted.

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 2022, it was requested in the EEZ indicator field for 2021 to specify if the fishery is within UK EEZ. A hierarchical approach is used to assign the EEZ.

1. Link logbook data with VMS data by vessel id catch date and ICES rectangle. A speed filter is applied to assume fishing activity. Landings are distributed out on economic zones per vessel id, date and ICES rectangle according to the time spent in each economic zone.
2. If the vessel doesn't have VMS the economic zone is assigned based on the rectangle, if the rectangle only cover one economic zone.
3. For the remaining records, the economic zone is assigned based on the average landings distribution by rectangle, target species assemblage group and EEZ.

The majority of Danish vessels fishing in UK EEZ have VMS, but some are assigned based on the rectangle.

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 have 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 are 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)
- Hirtshals, Skagerrak and North Sea – shrimp fishery (OTB_CRU: SD 20- IV)
- Beam trawler, North Sea brown shrimp (TBB: IV)

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

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

The 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.

Data availability

Transversal data (logbooks, sales notes, fleet register) are transferred from the Danish Fisheries Agency to DTU Aqua every night. Some errors may be corrected in the data from a previous year, but that is mainly done during the first quarter, so the data were available by the data call deadline. The processing of the biological data need to be finalized before the ICES data call and stock assessments, during the spring. 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 2013-2021 have been submitted. For the 2022 data call, only 2013, 2020 and 2021 data were submitted.

Comparison with Eurostat data

The number of vessels reported in FDI are 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 are related to both changes in landings from the industrial fishery, and to a general decline of the fisheries in the Baltic Sea in 2020 and 2021. These changes corresponds 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 were every observer had a separate list of vessels to contact to avoid to 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.

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 (see table 1 for 2013 and 2021 uploaded this year).

Table A1.4.1 Sampling frame

Year	Sampling frame
2021	OTB_DEF (27.1, 27.2)
2021	OTB_DEF (27.4.a, 27.4.b, 27.4.c)
2021	OTB_DEF (27.14.b, 21.1.c)
2021	TBB_DEF (27.4.b, 27.4.c)
2021	TBB_CRU (27.4.b)
2021	OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a)
2021	Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24)
2021	Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24)
2021	Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25,

Year	Sampling frame
	27.3.d.26)
2013	OTB_DEF (27.1, 27.2)
2013	OTB_DEF (27.4.a, 27.4.b, 27.4.c)
2013	OTB_DEF (27.14.b, 21.1.c)
2013	TBB_DEF (27.4.b, 27.4.c)
2013	TBB_CRU (27.4.b)
2013	OTM_SPF (27.2.a, 27.4.a, 27.4.b, 27.6.a, 27.7.b-k, 27.8.a)
2013	Demersal active fisheries, Western Baltic (27.3.c.22, 27.3.d.24)
2013	Demersal passive fisheries, Western Baltic (27.3.c.22, 27.3.d.24)
2013	Demersal active fisheries, Eastern Baltic (27.3.d.24, 27.3.d.25, 27.3.d.26)

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 and 2021 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 (ie. 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 (<3% for EU waters) occurred between FDI data and Eurostat for 2013. . Only very minor differences (<1% for EU waters) occurred between FDI data and Eurostat for 2015 and 2016. More differences in landings weight can be seen for 2017 and 2018. 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 2021 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 field in its current format is not useful as various codes can be used for one single gear and mesh size combination in a given area. Each country has its own way of handling the metier field and e.g., to identify the thresholds to identify the target assemblage. This makes it difficult to compare between countries but it also creates problems inside the country if different people work on different tables. Further restrictions on metier codes allowed would be beneficial to ensure that all use the same metier definition in the same situation. A more detailed description is needed how to identify target assemblage to harmonise the methodology across countries. For example, it is completely unclear when a trip should be counted as e.g., mixed demersal fish and crustacean trip (MCD). The implementation of the metier definition script developed by RCG ISSG on Metier and transversal variables issues might be advisable.

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.

A comparison between landings from table A and table H showed several discrepancies. However, this reflects a shift between quarters as the person generating table A uses that date of the catch from the logbooks, while the person dealing with table H is using the date from the landings declarations. Both ways are correct (i.e. date of the catch more relevant for biological information and landings date more relevant for economics) and when summed over the year, the landings from both tables are identical. Never the less, a clear guidance on what date to use for FDI would be beneficial to ensure full consistency. Where is also a couple of rows with subarea 87.2 in quarter 3, where significant discrepancies are present. This caused by uncertainties in original data, where logbook contains several entries with subarea 87.3 instead of 87.2.

The largest discrepancies between tables A and G (landings but no effort) for the year 2021 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 2021 was identified only by shagreen ray (RJF).

The spatial check revealed wrong RECTANGLE_TYPE for the OFR region (05*1 instead of 1*1) as well as incorrect latitude and longitude coordinates for CECAF subareas.

Impact of Covid on DCF sampling programme in 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 trapnet fishery. No discarding takes place in trawl fishery. The official discard information from logbooks are provided in the dataset.

In case of collection of biological data, the minimum threshold of 100 fish for length measurements and 50 specimens for age measurements are applied in sampling of pelagic fleets and in sampling of herring in coastal fishery. 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 used in effort calculations.

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 Estonian commercial fishing fleet activities , which operates in 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 2013-2021.

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 found in SOP (Table E) "Totwghtlandg" and SOP (numbers * mean weights at age) and SOP (Table C) "Discards [tonnes] and the sum of products [tonnes] = no age [number in thousand]*mean weight [kg] are very minor and probably stem from rounding.

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 is the problems of coastal small-scale fishery of 2014-2018 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.

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

Comparison with Eurostat data

Landings data provided for the FDI database for 2013-2020 were very close to the information reported to Eurostat (Differences less than 1%).

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

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

Problems encountered

Member State encounters persistent problems in obtaining effort information from the small, under 10 m boats operating with passive gears 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, MS encounters difficulties in obtaining of the value estimates for the long distant fleet, that lands outside of Estonia.

COVID issues

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 2020-2021.

Other comments if relevant

No other comments.

A1.6 IRELAND

Methodology

The Irish data submission is based on the following sources:

1. Logbook (vessels >10m) and Sales Notes (vessels <=10m) data (wanted catch, value, spatial effort and landings etc.)
2. Fleet register (Number of vessels, Fleet determination etc.)
3. Scientific observer data (discards, length and age distributions)

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

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

Effort was calculated using the fecR package.

In 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 (2015 – 2021) for all tables before the deadlines. The data covers all areas in which the Irish fleets are active and conform to the requested aggregation. There is no information on misreporting. Data were marked as CONFIDENTIAL if the data relate to less than 3 vessels operating within a fishery. Values in the fields TOTWGHTLANDG and TOTVALLANDG in table A and table H were both considered as confidential when the criteria of < 3 vessels was met.

Specific comments:

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

  In some cases, there is no value information for non-TAC species, or landed unwanted catch

- **Biological data:** It was discovered that the units of numbers at age and length were historically (2014-2021) were reported as a whole number and not in 1000's, which created very large SOP's in the biological tables (C, D, E and F). This was resolved for 2021 and 2013, and will be resolved for 2014-2020 during the resubmission next year.
- **Fishing Technique:** During the working group it was found that Ireland were 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.

Problems encountered

No problems were encountered during the submission process.

However, 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.

On sailing the participating skipper maintains contact with the Fisheries Liaison TL and quality assurance checks are performed during the trip via WhatsApp. The extra samples coming ashore has resulted in in an increased resource requirement ashore which is off set by the current lack of sea time. This mitigation measure has ensured that MI keeps some direct fisheries dependant data flowing to our process systems and more importantly ensures that the dialogue between the MI and the industry is maintained and developed. This has resulted in over forty trips sampled in 2020 and continues to yield data in 2021. In 2020 the Marine Institute also set up a self-sampling project with the Irish Tuna Fishery Improvement Project FIP (http://www.irishtunafip.ie/) where the Irish Tuna fleet employed a crew member to self-sample data during the Albacore fishery working to MI standard operating procedures. The crew member was trained by the MI and delivered the data to MI for entry/analysis. Whilst this was a successful first season of this joint approach it too fell victim to Covid restrictions as the spread of vessels sampled by the crew member were limited – 4 trips were sampled in 2020 and it is hoped hope to build on this in the coming season (Jun/Jul/Aug). The MI also developed a new FU16 At Sea Self sampling programme to sample *Nephrops*. The existing programme was heavily dependent on samplers measuring *Nephrops* at sea and thus had fallen foul of the Covid.

Despite the adaptation of the sampling plan, discard estimation was possible is the majority of stocks.

Other comments if relevant

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

A1.7 GREECE

Methodology

A National Centralize 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 (e.g. 2x2 Km) and is aggregated by GFCM statistical rectangle (0.5x0.5 degrees) according to the FDI data call ANNEX 1 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 provided by the Ministry of Rural Development and Food and are provided in the same resolution as the effort data. 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. These 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). Specific R routines have been constructed to support the analysis, raising and estimation of effort from SSF vessels by major area (according to the Greek DCF sampling scheme, the country has been divided in 12 major areas) 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 on-board 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 2018, 2019, 2020 and 2021, 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 2016-2021 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 many and the landing and effort values are very small. Concerning differences in the number of vessels between FDI and ECO should be noted that the number of vessels provided in the FDI (Table J) comes from the National Fleet Register. In ECO, the inactive vessels are estimated and are deducted from the professional fishing fleet. This leads to discrepancies between FDI and ECO. Inconsistencies in the fishing technique coding between the FDI and AER data calls that were found in the past, have been corrected. More specifically, the fishing technique coding in the FDI data call are now aligned with that defined in the EUMAP legislation (Commission Delegated Decision (EU) 2021/1167 of 27 April 2021) provided by a Member State to the STECF AER data call.

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. In terms of landings, no comparison can be performed for years 2013, 2015 and 2017, due to the partial implementation of the DCF. In 2019 and 2020 the EUROSTAT landings data are 19% and 17% 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. Following STECF 21-10 recommendations, the possibility of using the effort to partition discards will be explored.

Total discards with no landings are assigned to one row (per domain and species), but the partitioning of discards is not realized. If the effort is finally used to partition discards, the same method will be applied to partition discards with 0 landings.

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.

Unlike the previous year, the domain definition will be applied to the entire historical data series (2013-2021). The technical problems that did not allow its application for data from 2018 have been resolved.

Refusal rate

Refusal rates of Table B come from the observer programme developed in the Subareas ICES 8 and 9. Refusal rates collection has been implemented from 2016, therefore no data prior to this year are available.

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

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.

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 WKTRANSVERSAL 2.

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.

Data availability

Tables for the 2013-2021 time series were loaded before the deadline.

Coverage

The data provided covers all areas in which the Spanish fleets are active and conform to the requested aggregation. The data for 2013 and 2021 have been provided, and the data for 2014-2020 has been uploaded again after review and correction.

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 1% and 3%, being the data reported in FDI slightly higher. Regarding total landings, the greatest discrepancies are located in the years 2013 and 2014, with a difference of 13% and 14%, respectively. For the other years, the percentage is less than 5%. Total landings are slightly higher in the FDI, except in 2013 and 2014.

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 representatives values.

Problems related to data submission

Due to the delay in uploading the tables, errors found during the data check cannot be corrected. This is a recurrent situation, year by year.

The problems found last year in Table A and biological tables (C, D, E and F) have been corrected both in partitioning of discards in Table A as well as in the correspondence between the values of discards and landings of table A and the biological tables.

However, tables H and I still have errors, mainly in 2018, 2019, 2020 and 2021 years. These errors will be corrected next year.

In addition, the errors related to the SOP found both in tables E and C loaded in 2021 and 2022, are mainly due to rounding and unit errors. These errors will be corrected next year.

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 2021-2022, 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), 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. Their reference fishing activity' estimates *(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 Longliners"** 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 are operated.

This 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 longliners" and the "Guiana shrimp trawlers". 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)***.** Some very few other landings are also not informed about their value associated but it remains minor species (<0.1% of total landings).

EEZ indicator *(especially the more precise EEZ indicator asked for 2021 including UK waters)* have 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)*, 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) For the few under-12m geolocalized vessels, geolocation data are also considering in order to precise the spatial information available in the fishing forms or logbooks
3) Finally, a pro-rata calculation is applied 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 2nd 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. "Totseadays" are not documented for the fleet "Mediterranean Bluefin Tuna Purse seiners" as this information is of limited meaningfull for this fleet.

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.

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 and 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. Some issues remain for the fleet "Mediterranean Bluefin Tuna Purse Seiners" therefore data presented in map for this fleet remain incomplete. This should be resolved in the next 2023 datacall.

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 datacall)* 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 discards estimates could be only found in tables C-D.**

Table B *(refusal rate)* has been provided for the second time this year. Only year 2021 has been provided. New variables have been added end of 2021 to the sampling reporting to better answer the needs therefore in the future Table B could be better documented for FDI datacall. 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

First French data have been uploaded before the legal deadline of the data call also taking into account the different checks done during the upload process. Some adjustments of the data have been done before the operational deadline (in particular regarding the domain and the biological tables C-D-E-F) and tables C-D-E-F *(nep_sub_region issue)*, table H (2021) and table I *(issues with the spatial information provided for French Guiana vessels)* have been re-upload during the first two days of the EWG taking into account the data checks carried out on the data provided during the FDI call and available online at https://datacollection.jrc.ec.europa.eu/data-analysis/fdi. The current data can be regarded as final given current knowledge. However, data could be improved/completed before next data call *(taking also into account the minor remaining issues highlighted in the data checks carried out this year)* 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 and 2021 cover all the French fleets including overseas fisheries, long distance fisheries and small scale fleets.

Up to now, no upload facility is given for data where area information *(at the sub-region level)* is missing. Few French fishing statistics data *(less than 0.5%)* have area information available only at the FAO area level. These data are therefore missing in the FDI new database.

Considering the spatial distribution tables H&I *(landings and specific effort data by rectangle/c-squares)*, **spatial data have been submitted for all the fleets considering the finest spatial distribution available including C-square level for geolocalized vessels.** Some assumptions have been considered to provide all the data at the level asked in the data call *(e.g. GFCM squares in FAO zone 37)* by proportionally distributing the available spatial data *(especially for non geolocalised vessels for which some of the data could be only available at a more aggregated spatial resolution)* but only as long as it was acceptable. For example, for fleets operating in FAO zone 27, some fishing activity data *(~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. Mainly, species and areas reported in Eurostat are available in the FDI database and vice versa.

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

Problems encountered

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. 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 are 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.*

[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 aim 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 metier. 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://ifomcvigo.com/wp-content/uploads/2017/03/7th-ifomc-proceedings-vina-del-mar.pdf*

[3] **SACROIS** *(http://sih.ifremer.fr/Description-des-donnees/Les-donnees-estimees/SACROIS)* 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 https://datacollection.jrc.ec.europa.eu/documents/10213/891027/2018_Workshop_DCF+Metiers.pdf/6b928c8a-c2ac-4507-840c-98155e0f07d9?version=1.0)*.

[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://datacollection.jrc.ec.europa.eu/wp/2020-2021?p_p_id=110_INSTANCE_VXyg0nSGejEq&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_110_INSTANCE_VXyg0nSGejEq_struts_action=%2Fdocument_library_display%2Fview_file_entry&_110_INSTANCE_VXyg0nSGejEq_redirect=https%3A%2F%2Fdatacollection.jrc.ec.europa.eu%2Fwp%2F2020-2021%3Fp_p_id%3D110_INSTANCE_VXyg0nSGejEq%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_count%3D1&_110_INSTANCE_VXyg0nSGejEq_fileEntryId=1284109

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 maintained by the Croatian Ministry of Agriculture, Directorate of Fisheries (MA-DoF). FIS 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.

Estimation procedures

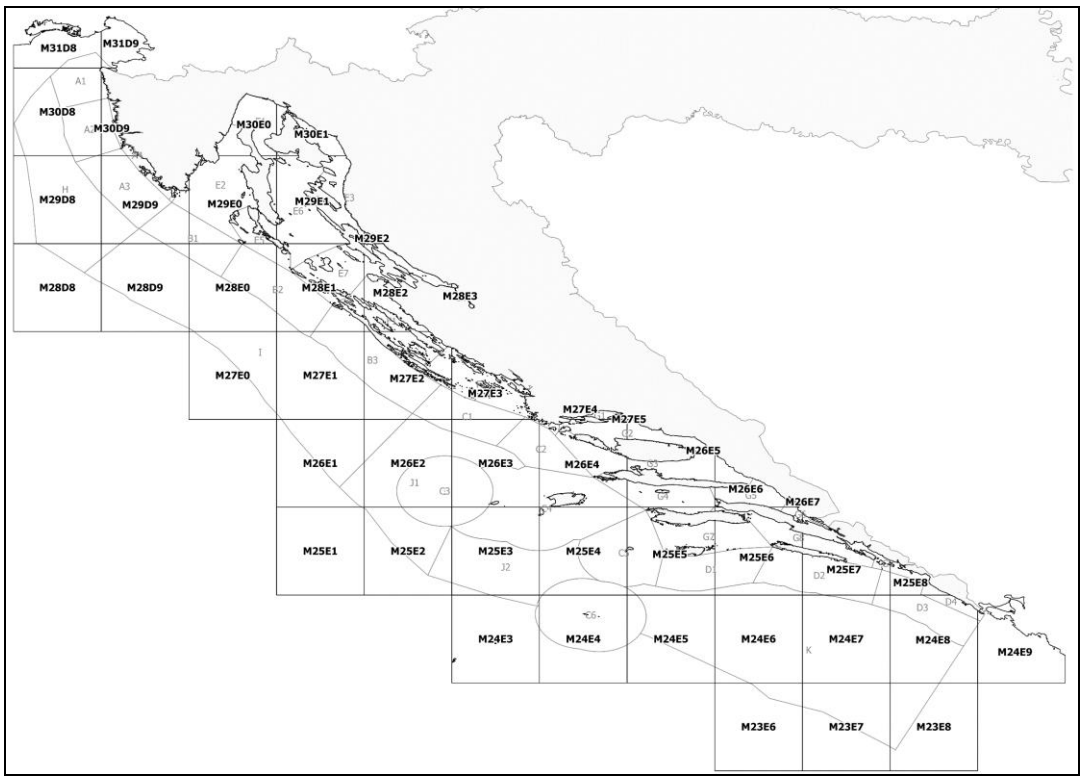
Data on landing, discard and effort data is collected on a census basis from the entire fishing fleet, therefore there are no estimation procedures for reporting on landing, discard and effort data. For vessels below 10m LoA using passive gears a monthly fishing report is applied according to national 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 monitoring of metiers, including the following species: *Eledone cirrhosa*, *Trachurus trachurus*, *Eledone moschata* and *Trachurus mediterraneus*. Data on species level is reported for the Med&BS data call.

Spatial data on landing and effort is estimated on the basis of data on Croatian fishing zones reported in logbooks and fishing reports. For this purpose specific mapping procedures are developed within the database to produce data according to GFCM statistical rectangles. Croatian sea is divided into 11 fishing zones and 37 fishing subzones (basis for reporting in logbooks and fishing reports) 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. 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 Annexes XX and YY of the FDI data call. In agreement during the STECF working group, Croatia did not correct this data since it is not erroneous.

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 (same data is reported to the Med & BS data call). MA DoF assessed that control data was more reliable on discards than scientific estimates, since 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 SQL following the logic agreed within the WS on Transversal variables of Zagreb (2015) and Nicosia (2016) that proposed a harmonized approach to associate days at sea to the gear. Although the same logic is used to calculate effort for all data calls, depending on the data aggregation levels the results may differ slightly (economic fleet segment, FDI domain, metier level 6; temporal and geographic stratification).

Specific indicators (e.g. refusal rate)

Currently refusal rate is not recorded.

Data availability

All the data was finalised and available by the data call legal deadline. Data was provided for 2013-2020 and preliminary data for 2021. 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 LM 2018 Recommendation 9 - Merging of length classes which 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 metiers regardless of length

classes. According to this agreement and data call specifications in 2022, data for the Med&BS data call in 2022 was provided on the level of metiers, and for FDI on the level of fleet segments.

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

In the case of Bluefin tuna caught in purse seine fisheries, data is reported on the catch and effort, and the reported landing value iz zero. Namely, all PS-BFT catch is transferred to cages for farming purposes, therefore there is no landing value as the total catch is not landed. All income related to PS-BFT catch is realized by the BFT farms (BFT catching vessels are owned by the farms).

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

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

Some very small inconsistencies were marked in the data quality check mostly due to rounding of numbers, and procedures of partitioning of spatial data.

Comparison with Eurostat data

No significant differences.

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

Covid related issues

The closure of fish markets and restaurants and a number of restrictions imposed to curb the spread of the coronavirus had an effect on first sale of demersal species. Prices of most important demersal species decreased in 2020, as placement of fresh fish products in restaurants and local markets, where highest prices are achieved, was diminished. In addition, export of demersal fish and cephalopods to Italy where fishers achieve higher fish prices than on domestic market was not possible for the greater part of the year. Purse seine fishery was not as affected with the pandemic. There is no effect regarding discard sampling, since data is submitted according to logbooks. In 2021, recovery of sector is evident in terms of an increase in the average fish price.

Other comments if relevant

Capacity and fishing activity data needs to be interpreted with caution taking into account 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, ie.:

- 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. RCGMED&BS prepared a complete list of métiers important to sample and provide scientific justification for not sampling certain metiers for discards (see RCGMED&BS 2010 - table 7 page 34, RCM Med&BS 2016- annex IX). The discard estimates presented in the FDI data call reflects this regional sampling agreement. It has also to be considered that the discard sampling program is aimed at providing basic data for stock assessment purpose and not for monitoring LO implementation. Several species under LO (annex III of RegMED) are caught by artisanal fleets for which there is no obligation to implement a discard monitoring program according to the Italian DCF WP.

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

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 2013-2021 and all the métiers.

The quality checks desplayed 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 and do not exceed 0.4% of the total landings 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. However, for the years 2015, 2018 and 2019 the differences in the datasets are higher and cannot be explained only to the inclusion of BFT fixed traps in the Eurostat 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 metiers. 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 metiers.

Complementary data on effort and landings by metier 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 metier. For each fleet segment, the average price of species is estimated at metier level, by multiplying the average price with the landings assigned to each metier exercised by the fleet segment. In cases of landings at foreign ports, average prices 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 does 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 besides the spatial data regarding the large pelagic species.

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 2020 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 2016-2020. 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 the 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 and 2016.

Problems encountered

No problems encountered in the preparation of the files.

However, it should be noted that due to the COVID-19 pandemic measures, during 2021 there was no sampling onboard on trawlers. The size and structure of the vessels does not allow observers to use separate space from the crew, and safety measures were not considered to be met while onboard, especially overnight. Arrangements were made with the owners of trawlers and the crew in order to receive discard samples from them for trips sampled at land. COVID-19 pandemic safety measures did not influence sampling of demersal fishery with passive gears (LS_PG_DEF) all year round, since sampling is performed at landing sites, in open space.

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:

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

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

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

No thresholds were applied.
R script have been used for effort calculation in case of offshore fishery.
In period of 2013-2021 no refusals to take observers on board were recorded.

Due to the critical state of cod stocks in the Eastern part of the Baltic Sea, the specialized cod fishing was not permitted in 2021. Cod could be kept in the catch only if it is an unavoidable by-catch in other fish fisheries (Baltic Herring, Sprat, Flounder).

In 2021 activity of demersal fleet was very low. In first half of the year only one fishing vessel made 6 fishing trips targeting flounder. Due to Covid-19 travelling restrictions participation of observer into this fishing trips was denied. For 2021 information on discards is not available.

Data availability

Latvian data were provided on time and in accordance with required format. Average prices per species for 2021 were used from 2020. The final data for the average prices for 2021 could be available by the end of November 2021.

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 did not show big difference. As information about recreational fishery was not provided, there are small differences in landings values for freshwater species between the two datasets.

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.

Estimation procedures

For estimating discarded catches have been used two data sources: data collected by observers on board and sampling of releases. The logbook data used for comparison. For flounder discards counted against total landings (by request of WGBFAS), for other species by number of voyages (metodology discrabed in WKSCMFD report). The ratio of discards 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 high quality of data Lithuania uses a "census" type of declarative form and logbook for vessel. Data derived from national logbook were completing by a company engaged in commercial fishing in the Baltic Sea coastal area. Small scale fleet has daily activity and collected data in the declarative 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 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.

Refusal rates

Sampling programe are contrebuted only on the Baltic Sea region. Sampling programme for the CECAF and SPRFMO regions is carried out according to multilateral agreement. Since 2018 Poland has coordinated the programme for CECAF and sinnce 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 was provided in table B.

Data availability

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

Coverage

2013-2021 period submitted data covers all areas and species. Submitted data conforms to the requested in the data call aggregation, by quarter, area, gear and mesh sizes. Any meaningful data quality issues demanding correction and re-submission of data sets was raised during quality checks. Data set submissions complied with the required deadline dates. In respect of data check reports, all 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. 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 was provided for 2021. 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. In some cases, allocation of metier to trip with no catches was highlighted as issue. There are no general concepts on the target species (or target assemblage) as a definition criterion, nether clarification on target assemblage specification in case of efforts without landings. That could lead to inconsistency between Member States. However, there is intersessional between RCG meetings working group which is working on developing of guidance on target species referring to metier. As such, for next FDI data call the allocation metier to fishing operations will me more comprehensive as will be used the 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 and 2021, 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 due to COVID-19 (closed borders, restrictions in people movement, safety issues etc.).

A1.15 MALTA – no information provided

A1.16 THE NETHERLANDS

Methodology

Wageningen Marine Research (WMR) provides biological data, length and age distributions for discards and landings. The samples collected from the at-sea and market sampling schemes have been raised for the ICES datacalls and are subsequently transformed to the FDI datacall format. Discards are 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.

Dutch pelagic fisheries are owned by 3 fishing companies. The on-board observer sampling scheme for the discards and the self-sampling scheme for the landings run in close cooperation with these companies.

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

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.

The Netherlands provides both quota and non-quota species in the FDI datacall.

Data availability

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

Coverage

The Netherlands provided fleet specific landing and effort data for the years 2013 and 2021. The data covers all areas in which the Dutch fleets are active and conform to the requested aggregation. There is no information on misreporting, although the reliability of the official discard records in the official logbook registration is believed to be questionable and, therefore, not used. Discard estimates were provided for all species caught in fisheries sampled under the Dutch DCF monitoring programme. Within this demersal monitoring programme for biological data a reference fleet is used, which sample catch data. The participating group of vessels is representative for the complete demersal Dutch fleet, on the aggregation level of metier, the combination of gear type, target assemblage and mesh size range. Pelagic and passive gear (small scale) fisheries are monitored with an observer programme of which the sampling coverage is limited.

Comparison with EUROSTAT data

The difference in number of vessels between the EUROSTAT data and the FDI data is due to the lack of inactive vessels in the latter.

Publication of confidential data

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

Problems encountered

Covid related problems regarding the data collection in 2020:

- Pelagic at-sea sampling

Few 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.

Table J:

WMR does not have the complete dataset including all the inactive vessels therefore table J is lacking some information on inactive vessels.

Other comments if relevant

No other comments.

A1.17 POLAND

Methodology

Official fisheries data of the Polish fleet from the period 2013-2021 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 sampling trip per year in the Eastern Arctic. Additionally, Poland is a member of the multilateral agreement to cooperate in the biological data collection on pelagic fisheries in CECAF and SPRMFO waters.

Discards were estimated from trips sampled at sea. Domains used to estimate discards result from the 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 a 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. 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'.

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

Data availability

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

Coverage

General comments

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

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

Comparison with Eurostat data

The comparison with Eurostat data did not show any significant differences 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.

Publication of confidential data

In the period 2013-2021 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 – 2021. 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 in 2020 and 2021. 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 and 2021 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.

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: the 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, 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 data 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 a métier level, Portugal developed a procedure that classifies each trip in a métier. The process to allocate the metier follows different methodologies depending on the source: sales notes and licenses or logbook.

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. In the Madeira outermost region, the métier assignment is also supported by questionnaires carried out at the port.

A similar procedure is conducted in the Azores. A specific algorithm based on Sales Notes, Fishing Permits, and when available, the Questionnaires carried out at the port, was designed. In the first phase, each trip, observing certain conditions in terms of catch composition (Sales Notes), is allocated to a specific métier. The algorithm was designed for traditional single-label classification, so if it detects more than one possible métier, an analysis of the relative contribution of each métier is performed, and the dominant métier prevails. Moreover, each métier is determined by one or a group of target species, and each trip is categorised into only one métier. This algorithm classifies trips based on qualitative criteria using thresholds of the target species' contribution to the catch of each trip. In a second phase, the procedure is validated, taking into account the Fishing Licenses and (when available) the questionnaires.

For vessels with electronic logbook, there is a procedure based on SQL scripts that use the information recorded in the Electronic Recording and Reporting System (ERS) reports, 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 had to 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, for 2021 data, only one source was used for each vessel: logbook or sales notes depending on whether the vessel reports on the logbook. A new version is expected to be implemented in parallel with a new data model on which a data warehouse will be based, allowing an improvement in data quality.

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

Value of landings

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

Discards estimation

Discard values on tables C and D are estimated based on biological onboard sampling and were provided for bottom otter trawl fisheries in 27.9.A.

Regarding discard estimates for the trawl fisheries, these are the values reported to ICES for stocks assessment. In 2013-2019 they were based on data collected from the observers sampling program on-board demersal fish and crustacean trawlers in area 27.9.A. Using the procedure to raise discards from haul to fleet level in the Portuguese trawl fisheries (Jardim and Fernandes, 2013), species with low frequency of occurrence in discards (i.e., with a large number of zeros in the data set) cannot be reliably estimated at fleet level. The frequency of occurrence in discards of most of the species reported to ICES was below 30%.

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 quality of this data still needs to be assessed (e.g. comparison with data from previous years) in order to evaluate if it can be used for discards estimation purposes. As a result, it was not possible to use the standard discard raising procedure at fleet level to estimate discards (Jardim and Fernandes, 2013). 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) in 2020 and 2021. 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 patterns in discards in the sampling period 2004-2019, standardized discards per unit effort (DPUE) were obtained for that period, and the average value of the 2017-2019 period was multiplied by the total fishing effort of the fleet to obtain annual values of discards. Species with low frequency of occurrence in discards (below 30%) are not reported because discards cannot be reliably estimated (Jardim and Fernandes, 2013).

Consequently, annual trawl discard volumes and length frequencies at the fleet level are only estimated for some species and years.

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

The landings information by species included in Tables C and D for the métiers coded as OTB_CRU_>=55_0_0 and OTB_DEF_>=65_0_0 were the result of aggregation of landings of more than one trawl métier reported in Table A, according to Table 1. Discard estimates are reported for the same aggregated métiers, which are the groups covered by the sampling program.

Table A1.18.1: Métiers aggregated in Table A and used to produce the domains of the data reported in Tables C, D, E and F.

Métiers from Table A - CATCH	Métiers in domains of Tables C - F (biological data)
OTB_CRU_>=55_0_0	OTB_CRU_>=55_0_0
OTB_CRU_55-59_0_0	
OTB_CRU_>=70_0_0	
OTB_MCD_0_0_0 (NEP,DPS,DWS)	
OTB_DEF_0_0_0	OTB_DEF_>=65_0_0
OTB_DEF_>=65_0_0	
OTB_DEF_65-69_0_0	
OTB_DEF_>=70_0_0	
OTB_DEF_>=130_0_0	
OTB_DEF_100-129_0_0	
OTB_MCF_0_0_0	
OTB_MPD_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 and OTB_CRU), proportionally distributed according to the landings at metier level 6/quarter/vessel length. This is not the best procedure because OTB discards estimates were raised using effort as auxiliary variable and, for this purpose, we are assuming that landings and discards are correlated, which may not be true.

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 present in discards with frequency of occurrence in discards > 30%.

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 for hake and blue-whiting, species in which the frequency of occurrence in discards is higher than 30%, as previously referred. In each DOMAIN_LANDINGS, TOTWGHTLANDG weight was converted in number (dividing by the MEAN_WEIGHT_LANDG) and then distributed by age and/or length, using the proportions of each age or length class in the total distribution. The same procedure was applied for the discards. Refusal rates were recorded regularly since 2017.

Refusal rates

For onboard sampling in 27.9.A, there are five sampling schemes in the national work plans of 2013-2021: 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 2022 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 and 2021 the number of trips was extreme low due to the COVID-19 pandemic, 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 in the logbook, the estimated effort could not be correct. For SSF, it is assumed that one Sales Note corresponds to one trip and one fishing day.

Data availability

Portugal has submitted all tables requested before the deadline. It should be remarked that the final output for JRC database submission depends on different institutions involved (including Outermost Regions). This process is very time-consuming once not all data handlers have the same level of access to the data needed neither the same skills. In addition to these difficulties, there is also the fact that the Portuguese fleet is extremely extensive and diverse operating in a spread number of FAO areas.

Coverage

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. For years before 2021, there are some inconsistencies between effort and landings and between spatial and non-spatial landings and effort that were not solved as they resulted from the uses of different sources of data for different purposes. As already mentioned, it was considered the best solution to use the greatest amount of available information. In the 2021 data, inconsistencies between total landings weight and effort are noted, as no effort data were provided for the outermost region of the Azores.

The data submitted to FDI data call are mostly consistent with the Eurostat data, although FDI data base has not the Azores outermost region data for the year 2021. The difference observed in terms of the total number of vessels is because the total fleet (including inactive vessels) is reported to Eurostat while for the FDI, until 2020, only active vessels are considered. Some discrepancy between FDI and Eurostat landing data is observed in 2019 suggesting some double counting in the FDI data call.

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

Due the proximity of the data call deadline to the holiday period, which prevented on time amendment of the submitted data, it was necessary to add and correct some data during the meeting.

In the outermost region of the Azores, it's not possible to correctly access the database, which compromises full compliance with the data calls. This problem started in early 2020. At that time, a new contract with a database developer was about to begin when the whole COVID-19 problem happened. Since then, it has not been possible to reinstate the Database developer contract. For the 2020 data, due to the pandemic situation and the lack of personnel (also derived from the pandemic), it was impossible to collate data from both sources, electronic logbooks, and sales notes. In addition, historical data was also compromised, so it was only possible to make available to the Azores the information for 2018 and 2019 since they were the only years accessible in the database with the proper format.

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, plus the changes from year to year 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 and 2021 transversal, spatial and biological data from the Mainland. Madeira OMR had provided 2021 transversal, spatial and biological data. The Azores OMR only provided 2021 landing and capacity data. For this region, historical data from 2018 and 2019 were provided in 2021 data call, while the mainland and Madeira OMR submitted data from 2015 to 2021. This led to data for the Azores from 2014 to 2017 being deleted from the FDI database. It was not possible to resubmit the Azores data from 2015 to 2018 that had been uploaded in the previous data calls since the structure of the tables was not the same as in the 2021 data call.

The high disaggregation of data raises issues relating to data confidentiality once the institution that collect and process the data is covered by statistical confidentiality to safeguard the privacy of citizens, so that direct or indirect identification of the natural and legal persons concerned is not 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 the person. The rule we apply is that each data aggregation must have at least 3 records.

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

The number of fishing days is difficult to estimate for SSF once there are no logbooks for vessels < 10m LOA. A common approach is used to estimate the fishing days from the sales notes, assuming that 1 sale note corresponds to 1 fishing day.

The calculation process for the EEZ indicator is not fully developed so the data submitted may not be entirely correct.

Due either to errors in the reporting of fishing operations by shipowners 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 those 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 in the national data submitter.

Other comments if relevant

The proximity of the deadline of the data call to the holiday period turns it difficult to correct the data after data submission.

Impact of Covid on DCF sampling programme in 2021

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 quality of this data still needs to be assessed (e.g. comparison with data from previous years) in order to evaluate if it can be used for discards estimation purposes. As a result, it was not possible to use the standard discard raising procedure to estimate discards at fleet level (Jardim and Fernandes, 2013) and the reference period 2017-2019 was used to obtain discard estimates for 2020 and 2021.

In the outermost region of the Azores, the COVID-19 pandemic negatively affected maintenance and access to the database. Although the sampling program (and consequently the data collection) was not significantly affected in 2021, problems with the database persist, compromising the completed delivery of the data requested in the data call.

A1.19 ROMANIA – no information provided

A1.20 SLOVENIA

Methodology

The metodology 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. Discard 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.

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 2021

No impact on surveys or results.

A1.21 FINLAND

Methodology

Transversal data (Logbook and sales notes)

Landings and discards catches were retrieved from logbook database maintained by national control agency. Fishers using a vessel less than 10 meters in length declare their monthly catch by a coastal fishing journal. Estimation procedures have not been used. These 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. Discards, for example fish damaged by seals, are not included in the nominal catch. The major cause for discarding in the Finnish commercial marine fishery is damage caused by seals, cormorants and other predatory species on the fish trapped or entangled in the fishing gear.

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 control agency database. Average prices are multiplied by weight.

Biological data (species composition, length, weight, age, sex, and maturity)

Biological data is collected following three sampling methods. There is no regular onboard sampling program.

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. The number and weight of anadromous fish caught are reported by fishers to logbooks.

Workflows merging biological data to catch domains are implemented using R. (https://github.com/PerttuR/FIN-FDI-data-call)

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 maintained in Luke. Sampling data is available online after each sample is taken. Age determination information is available 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 2013-2021 including all species are uploaded to FDI database within data call deadline.

Spatial landings vs Spatial effort, Spatial effort vs effort If the 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 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. In the future, the calculation will be refined in this regard.

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. Vessel numbers in Eurostat are all registered vessels. For that reason, vessel numbers are higher in Eurostat data.

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. Reporting of discards is based on information provided by fishers, no regular onboard observation exist in Finland.

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 was derived from positions in logbooks/coastal journals.

Effort was calculated using the fecR package.

Refusal rates were calculated as the industry refusal rates, i.e. proportion of vessels contacted that did not agree to take observers on-board. Non-response rates were calculated as the proportion of vessels contacted that did not provide an observer trip, for different reasons. Most common reasons for a failed trip were that the vessel was not fishing in the desired time period or other logistical reasons such as bad weather conditions. 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 2013-2021.

Discard estimates were provided for all species caught in fisheries sampled under the Swedish on-board sampling programme 2013-2021, 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 2013-2021.

Refusal rate was provided for the main sampling frames for 2016-2020, while other parameters in Table B were provided for 2013-2021.

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 2022 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

Before the data submission in 2022, Table J (capacity) did not include inactive vessels in the Swedish fleet. This was amended in 2022 and the whole time series (2013-2021) was resubmitted.

8 LIST OF ELECTRONIC ANNEXES

Electronic annexes are published on the meeting's web site on:
http://stecf.jrc.ec.europa.eu/reports/fdi

List of electronic annexes:

EWG-22-10 - Annex 2 – **Data extract associated with anticipated exemptions for 2022**

EWG-22-10 - Annex 3 – **Percentage of fish above and below MCRS by métiers and Member States**

EWG-22-10 - Annex 4 – **Script for merging biological data with catches table**

EWG-22-10 - Annex 5 – **Maps of effort and landings**

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STECF

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

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