



Regional Coordination Group
North Atlantic
North Sea & Eastern Arctic



Regional Coordination Group
Baltic

Intersessional Subgroup (ISSG) 2023-2024 Reports

RCG NANSEA AND RCG BALTIC REPORT

Part III

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I ISSG End-users and RCGs

I.1 Background

The aim of this ISSG is to review and streamline dialogue between data providers (RCGs) and end users (ICES) in order to identify effective processes to meet end-user needs and allow the RCG to prioritize its activity relating to future data collections, storage and transmission functions. The ISSG was established as a pan regional group in 2018. During the RCG NA, NS & EA and RCG Baltic Technical meeting in 2020 it was decided that this ISSG should have a more generic focus. It was therefore decided to keep the annual information meetings between ICES and the RCG chairs to ensure the good cooperation and to be able to follow the progress over time.

I.2 Work-plan

Main tasks defined for 2023-2024:

1. Communication channel between ICES and RCG chairs
 - Follow-up on the proposed route of recommendations.
2. Communication channel between the COM and RCG chairs.
3. Update the 'Mandates and Remits' document before the decision meeting in September.
4. Consider if the RCGs should have a more 'formalized' role in the Data Evaluation Workshops.
5. Start a dialogue with ICES regarding ISSG Overviews outputs to ICES WGs.

I.3 Progress during 2023/2024

During the season 2023-2024 the ISSG had several virtual meetings with end users to discuss various issues. The annual meeting with ICES and the Commission was held on the 14th March. At this meeting general issues were discussed (minutes of the meeting can be found in Annex I), including:

- Communication channel between ICES, DGMARE and RCG chairs:
 - RCG's Mandate and remits document,
 - Route of recommendations,
 - ICES recommendations database,
 - Follow-up on RCG recommendations 2020-2023,
- End user needs on a general scale,
- RDBES related topics,
- UK/ Third countries related issues,
- Follow-up on action points defined at the 2023 RCG ISSG End Users meetings,
- Update on RCG ISSGs work,
- Updates on regional work plans.

As intense work was being done to finalise the Regional Work Plans for 2025-2027, as well as issuing the first joint RCG-ICES data call to RDBES, additional meetings were organised to coordinate necessary actions. The ISSG members were invited by DG MARE and DG ENV to the meeting of the Joint special group supporting the implementation of the EU Action Plan. The list of meetings in the season 2023/2024 attended by ISSG members is as follows:

- ICES and RCG chairs meeting to follow-up on 2023 recommendations (28th August 2023),
- Liaison Meeting, Decision Meeting, NCs Meeting (26-28 September 2023),

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- 1st meeting of the Joint special group in support of the implementation of the Action Plan to conserve fisheries resources and to protect marine ecosystems (organised by the EC on 6th October 2023),
- COM and RCG chairs meeting to follow-up on recommendations (11th October 2023),
- WGRDBESGOV meeting (20th-24th November 2023),
- ICES and RCG chairs meeting to follow-up on recommendations (29th November 2023),
- COM and RCG chairs meeting on RWPs after evaluation by STECF (1st December 2023),
- ICES and RCG chairs meeting to plan the Joint RCG-ICES RDBES data call (10th January 2024),
- NCs meeting (7th March 2024),
- ISSG End Users and RCG meeting between ICES, EC and RCG chairs (14th March 2024),
- Workshop: Financing the Marine Action Plan (12th April 2024)

The ISSG was in regular contact with other ISSGs in order to coordinate activities related to regional work plans, recommendations, RDBES data, new legislation, etc.

In cooperation with ICES a new GitHub project has been created for exchanging recommendations between RCG and EC.

The RCGs Secretariat has provided invaluable support to the work of the ISSG, mainly by streamlining communication with NCs, End Users and other bodies, as well as taking and compiling notes from meetings.

I.4 Roadmap/follow-up

- 1) Communication channel between ICES and RCG chairs,
- 2) Communication channel between the COM and RCG chairs,
- 3) Communicate with ICES regarding ISSG Overviews outputs to ICES WGs,
- 4) Prepare a guide on creating recommendations and updating their status.

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I.5 SG Participants

Name	E-mail	RCG	Role	MS
Maciej Adamowicz	madamowicz@mir.gdynia.pl	Baltic	Chair	POL
Josefine Egekvist	jsv@aqua.dtu.dk	NANSEA	Chair	DNK
Rita Vasconcelos	rita.vasconcelos@ipma.pt	NANSEA	Chair	PRT



ANNEX I.I. Minutes Regional Coordination Group Intersessional Subgroup End-User meeting

Date	14 th March 2024	Venue	
Time	13:00 – 14:50	Venue	Online, MS Teams

Attendees

Name & Surname	Organisation	Role & position
Josefine Egekvist	RCG NANSEA	RCG Co-chair
Rita Vasconcelos	RCG NANSEA	RCG Co-chair
Maciej Adamowicz	RCG Baltic	RCG Co-chair
Lotte Worsøe Clausen	ICES	End-user
Jan De Haes	ICES	End-user
Henrik Kjems-Nielsen	ICES	End-user
Jette Fredslund	ICES	End-user
Neil Holdsworth	ICES	End-user
Lara Salvany	ICES	End-user
Monika Sterczewska	DG MARE	End-user
Leonie O'Dowd	DG MARE	End-user
Susana Rivero	RCG Secretariat	Observer

Objectives

- The main objective of this RCG ISSG meeting is to keep and maintain the communication channel between data providers (RCGs) and end-users.

Agenda

1. Communication channel between ICES, DGMARE and RCG chairs
2. Follow up on end-user needs on a general scale
3. RDBES related topics
4. Third countries related issues
5. Follow up on recommendations 2023, 2022, 2020
6. ISSG End User actions from 2023 season
7. Update on ISSG work
8. AOB



Specific issues addressed

I. Communication channel between ICES, DGMARE and RCG chairs – recommendations database

The communication between end users and the RCGs is good, it is shown by the number of dedicated meetings held during 2023/2024. The actions agreed at the various meetings are periodically followed, in particular at the bilateral meeting held between RCGs and end users.

COMMUNICATION CHANNEL BETWEEN ICES, DGMARE AND RCG CHAIRS MEETINGS 2023/2024			
Q1 2023	Q2 2023	Q3 2023	Q4 2023
NCs meeting 9 March	ICES RCG recs meeting 22 May	ICES RCG recs meeting 28 August	Marine Action Plan meeting 6 Oct (Observers)
End-user meeting 17 March	Technical meeting 25 May, 6-9 June	Liaison, Decision, NCs meeting 26-28 Sep	RCG Com I 1 Oct
			RDBESGOV 20-24 Nov
			ICES RCG End-user 29 Nov
			RWP Com I Dec
Q1 2024	Q2 2024	Q3 2024	Q4 2024
Joint RCG-ICES data call meeting 10 January	ICES RCG recs meeting ? April	ICES RCG recs meeting ? August	
NCs meeting 7 March	Technical meeting 4, 11-14 June	Liaison, Decision, NCs meeting 24-26 Sep	
End-user meeting 14 March			



The RCGs mandate and remits document defines the mechanism for streaming recommendations. The latest version, including the clarification regarding the role of RCGs vs ICES, is available online:

[Mandate and remits of RCG NANSEA and RCG Baltic](#)

Besides, the annual cycle and the route of the recommendations are clear.

ICES and the RCG NANSEA and RCG Baltic have agreed to follow up the comments and status of the recommendations on Github.

<https://github.com/orgs/ices-eg/projects/2>

The use of the Github has proven very useful and it was agreed that it is a good way of keeping each other updated (end users – RCG).

The RCG NANSEA and RCG Baltic, in collaboration with the RCGs Secretariat, are working on a similar solution to follow up the rest of the RCGs recommendations, including the recommendations addressed to COM. The advantage of this system is that is integrated in Teams on the RCG NANSEA and Baltic dedicated team. The system is still a work in progress and some of the functionalities are to be further explored.

Lotte (ICES) mentioned that it would be better if the follow up of the recommendations could be done on just one platform. There was a common agreement on the need to align systems. ICES commented that the recommendations addressed to COM could be included on ICES Github. It will be a matter of providing Github accounts or access rights for COM.

Action point RCG chairs: further explore the needs for following up all the recommendations, evaluate the advantages and disadvantages of the various system available and inform end users about the preferred system for this purpose.

2. Follow up end-user needs on general scale

- *Data transmission and data needs*

There has been a lot of efforts to harmonize and match the data. With the ongoing developments on RDBES the plan is also on that way, very good progress. A lot of work is going on.

Neil (ICES) commented on a couple of important developments. When registering the data incoming into ICES, there is a broader system in place now to avoid emails around data calls, the data is submitted electronically. The system is going operational in March 2024, the instructions around data calls will change, gradual change allowing people to adapt to the system. More like a “ticketing system”.

Regarding data format, efforts have been made to have descriptions of the data formats easily accessible and more structured, available online.

Mostly these changes apply to data call for data submitter, not so much for RDBES data call. Other data requests will follow the system described above.

Lotte (ICES) on a general term about data transmission, in early April MS will be consulted on the identified issues, then ICES will provide an overview for COM DTMT as in previous years. Monika (DG MARE) about consultation with MS, noted that Estonia has recently changed the NC contact details, but they are not publicly available yet on the DCF website. Monika will send to ICES Secretariat the new contact for acting Estonian NC.

- *Updates on a questionnaire by DG MARE to report data collection issues*

Monika (DG MARE) has made no significant progress on the questionnaire to report data collection issues, due to lower priority with reduced resources. However, other tools/channels are in place (such as the national coordination meetings) to identify serious issues on data collection activities if they were to occur. COM will inform ICES and other major end users in case data collection issues were identified.

- *Consider if the RCGs should have a more “formalized” role in the Data Evaluation Workshop.*

ICES Secretariat brought up the issue to the Benchmark Oversight Group (BOG); the Advisory Committee (ACOM) and the BOG are looking into developing a benchmark cycle and where to incorporate RCGs in this process. This is work in progress, work for the next BOG meeting.

Action point RCGs chairs/ICES Secretariat: organize a dedicated time slot at the technical meeting (TM) in June to present the outcomes of the BOG meeting.

3. RDBES related topics

The RCGs chairs participated in the RDBESGOV meeting in Nov. 2023 as there are a lot of RDBES related issues that affect the RCGs work. The RCGs have already identified some potential issues, such as what will happen with historical RDB data, update of data license, definition of user roles relevant to RCG work and who should be responsible for developing the scripts and procedures to get the FDI data format. The plan is to have a dedicated sub-group session during the TM in June to address/solve issues.

Henrik (ICES) commented that there are still some issues with the development of the FDI functionality that are dependent on the resources. Leonie (DG MARE) asked for more information on the FDI functionality. Henrik explained that the FDI functionality is on the long-term plan. The FDI export functionality is first of all dependent on the 4 identified needed FDI fields being added to the RDBES, (this development was originally in the short-term plan/project). ICES Sec. developed and modified the RDBES to include the 4 needed FDI fields this January 2024 to include the data in the RCG ICES data call 2024. Therefore, the development of the 4 FDI fields was taken out of the updated short-term plan/special request. The development of the FDI export module is also dependent on the results of raising of biological data on a national level and should be further discussed and agreed with EU MS submitting data to the FDI database. The functionalities that have been identified to be in the long-term plan/project are planned to be shared with third countries. Lotte added that this is an issue that ICES Secretariat is looking into and there have been bilateral meetings with DG MARE to find a common approach that suits everyone.

Action point WGRDBESGOV chairs: to circulate the Data license to NCs in March to get their feedback in April.

4. Third countries related issues

The ISSG Overviews brought to the attention of the RCGs an issue about the data *Quality checking*. The RCGs are responsible for data quality checks for EU MS, the RCGs cannot do the quality checks for the whole ICES community. Thus, the RCGs Mandate and remits document was updated to clarify this point.

Survey effort related issues, coordination is ongoing on ICES WG. In addition, the ISSG Surveys is aware of the surveys conducted by the UK for example. The ISSG Surveys had their annual meeting recently and more detailed feedback is pending on the finalization of the report.

5. TM 2023 RCG recommendations directed to end users

The colour coding shown in the presentation follows the status of the recommendations on Github database: Green for closed; Yellow in progress; No colour not sure of the status.

R01: ICES WGRDBESGOV to consider how ICES can take over the outputs created by ISSG RDB overviews for ICES (WGs, Benchmarks) ([ICES WGRDBESGOV](#))

The ICES Secretariat stated that, the WGRDBESGOV report was published last week, and it has been forwarded to the BOG. It is in progress now. ICES Secretariat is communicating between different parts of the ICES network. RCG chairs might need to follow up with ISSG Overviews chairs on this subject.

The Data license agreement is also in the report, Henrik commented that it should not be an issue getting access to data and signing off.

The status of R01 was updated on Github.

Action point ICES Secretariat: follow up with the BOG and provide feedback to RCGs of any progress regarding R01_2023

R02: The RCG recommends that when giving new legislative proposals on fisheries control, the European Commission considers that adequate estimation of bycatch rates to meet the conservation objectives of the CFP, requires adequate monitoring of PETS incidental bycatch, adequate data on fishing effort, as well as adequate monitoring of PETS species abundance and distribution (COM)

There has been an exchange of emails with COM, RCG chairs to make proposal to be included in the Implementing Act. The relevant ISSG chairs have been informed about this process and the possible request to review the Implementing Act. However, RCG chairs are not sure about the stage of the process at the moment.

Leonie (DG MARE) added that this issue has been followed with Estanis Mugerza (chair ISSG PETS).

Action point RCG chairs: organize a dedicated session at the TM to further work on the subject

R03: It is recommended that the WGRDBESGOV and ICES Secretariat work together to find funding to develop 'RDBES functionalities prioritized'. Among the most important for RCG NANSEA Baltic are FDI export module and inclusion of recreational data

The R03 status on the database is closed. However, Henrik (ICES) is surprised with the status. He explained that there were 18 functionalities that were prioritized at WGRDBESGOV, these were split into short- and long-term priority. FDI export module was not put in the short-term list of priorities. Henrik commented that ICES will work on the FDI functionalities when the long-term project starts. The development of the FDI export module has not started. To conclude: The development of the inclusion of 4 FDI fields, which originally was in the short-term prioritized functionalities are done. The FDI export module, which are in the long-term project is not done, so the R03 status is not closed.

Leonie (DG MARE) enquired about the FDI module and whether there is a technical issue because of the sequence and the steps needed. Leonie referred to the short-term RDBES request (as non-recurrent advice) which was intended to have the priorities directly linked to MARE and RCGs, while other functionalities should be considered jointly with other advice requesters to share the costs. Henrik (ICES) commented that there is no clear roadmap. So, the steps have not been taken yet to work towards the final process. The FDI data conversion has to be also taken into consideration.

R04: Request commercial landings and effort data from 2019-2023 in the 2024 RDBES data call (ICES WGRDBESGOV)

Status closed. Henrik suggested adjusting the dates, as data were requested for 2021-2023.

R05: Recommendation to the Commission to provide solutions for continuation of scientific monitoring in spatially restricted zones (DG MARE)

R05 was on the task list of ISSG surveys, more feedback will be available when the ISSG Survey report is released.

R08: Explore the feasibility and ensure the resources required for hosting the existing databases which are serving end-user needs of WGEEL in ICES servers

Neil (ICES) stated that this has been a long-standing discussion, WGEEL has developed their own system. Recently, they were granted a project, DIASPARA, the project is expected to make a lot of progress on that specific issue.

The WGEEL had shared some information about the Shiny app and database with ICES Secretariat, they told us what is needed. At the moment it is agreed that ICES Secretariat will put effort into checking the data and running the system, but WGEEL will keep their own database.

6. TM 2022 RCG recommendations directed to end users

R01: ICES give download rights of RDB/RDBES data to ISSG chairs for the ISSG work (ICES WGRDBESGOV)

Henrik (ICES) stated that at the moment the countries can download data, the export functionality of RDBES data has not been prioritized over other things, so it is not available. Up to now RCG and ISSG chairs have to rely on Henrik's data extraction to do the work. If countries are ok to share the data extraction ICES Secretariat is fine with that, only clarifications are needed in that regard. RCG chairs plan to have a discussion on the subject and roles and permissions needed for RCG work as well as data license and confidentiality rules at the RCG TM in June.

R04: Implement the collection of additional variables needed for SSF effort estimates in the control regulation (DG MARE, MSs)

Status closed as covered under R02

R05: Implement the collection of additional variables needed for bycatch estimates in the control regulation (DG MARE, MSs)

Status closed as covered under R02

R06: Provide prioritization of PETS species list (DG ENV)

Leonie (DG MARE) stated that, DG ENV participated in the 2023 LM and they provided more information. They also provided feedback on risk assessment and further documents were made available to the RCGs in a follow up email. In addition, DG ENV offered the possibility to hold bi-lateral meetings to have further discussions. Work is ongoing between DG ENV and WGBYC.

Lotte (ICES) stated that this is a concurrent request, with several discussions on the ICES advice groups. The list will be ready soon. Lotte suggested checking with ISSG PETS chair to advise RCGs on the status and discussions and how to use the ICES advice for the development of the new WPs. For example, for the optimization of monitoring effort.

Leonie (DG MARE) suggested to wait until the ICES advice goes public, and then plan a meeting with ISSG and possibly NCs.

Action point RCG chairs/COM: RCG chairs to follow up with Estanis about the progress on the prioritization of PETS species list and in collaboration with COM promote a meeting with all interested parties.

7. TM 2020 RCG recommendations directed to end users

R06: Revision of the survey effort and coverage of the IBWSS [ICES WGIPS]

The status of the recommendation is still in progress; ICES provided feedback to RCGs, RCGs will provide updates on GitHub once the ISSG Survey report is available.

Overview of action points defined in previous meetings

The RCG chairs presented an overview of the previously agreed action points; in general terms most of the action points have been done.

Hereunder we comment on the actions points that were identified as pending:

- *Provide feedback to ICES on the progress with the stakeholder's database (RCGs Secretariat)*
Susana (RCGs Secretariat) explained that the stakeholders database although is operational and it has been populated, the information on the database is still limited which in turn also limits the functionality of the database itself. The plan is, with SECWEB 2.0 project, to develop new modules that will allow a more automatized functioning.
Lotte (ICES) suggested to contact Jaylene at the ICES Secretariat who oversees developing the stakeholder's database to learn from each in this process.

Action point RCGs Secretariat: liaise with ICES Secretariat about new developments on the stakeholder database

- *Check with ISSG Surveys what is the situation with UK/ Get the feedback from ISSG Surveys and update on GitHub (R06_2020)*
RCG chairs contacted ISSG Surveys and will provide feedback about this point on Github recommendation database.
- *To think about how to fit the new recommendation from WKBCOD into the RCG system. Provide feedback into GitHub.*
ICES Secretariat, it has been communicated to the WG and it is work in progress.
- *Liaise with the BOG in the next meeting to consider if the RCGs should have a more 'formalized' role in the Data Evaluation Workshops*
Ongoing work internally in the BOG
- *Seek ways to make the information about benchmark groups and planned workshops more accessible.*
Lotte (ICES) This is also one thing that Jaylene is working on, one-stop-shop on the website where all people could find the information
- *Define a procedure within ICES Secretariat to restrict access to detailed data*
RCGs should sign the conditions agreement then only people who signed should have access. The new SharePoint system is not in place yet. Next year only those who signed the agreement will have access.
Henrik (ICES), in the meantime we can create a restricted folder, RCGs chair to name the people who should have access to the restricted folder.

Action point RCG chairs: provide ICES Secretariat with the list with of people who should have access to detailed data

Action point ICES Secretariat: create a restricted folder for detailed data and managed the permissions

8. AOB



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I. ISSG End-users and RCGs - Annex

Henrik (ICES) asked Leonie about the status of the special request to develop the functionalities on RDBES. Leonie mentioned that the process now is with the financial department, she will try to get further information. Lotte commented that ICES is sending the final comments to Aga, and the hopefully get the green light before Easter.

Action	Partner/Person in charge	Deadline
1. Recommendation database: further explore the needs for following up all the recommendations, evaluate the advantages and disadvantages of the various systems available and inform end users about the preferred system for this purpose.	RCG chairs	asap
2. RCGs role in Data Evaluation Workshop: organize a dedicated time slot at the TM in June to follow on the outcomes of from the BOG	RCG chairs/ICES Secretariat	30/05/2024
3. Circulate the data license to NCs in March and get feedback in April	WGRDBESGOV chairs	March-April 2024
4. Follow up with the BOG and provide feedback to RCGs of any progress regarding R01_2023	ICES Secretariat	asap
5. RCG chairs to follow up with Estanis about the progress on the prioritization of PETS species list and in collaboration with COM promote a meeting with all interested parties.	RCG chairs/COM	Mid-April
6. Liaise with ICES Secretariat about new developments on the stakeholder database	RCGs Secretariat	asap
7. Provide ICES Secretariat with the list of people who should have access to detailed data	RCG chairs	asap
8. Create a restricted folder for detailed data and manage the permissions	ICES Secretariat	asap

The meeting ends by 14:05 (CET).





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I. ISSG End-users and RCGs - Annex



2 ISSG RDB Catch, Effort and Sampling Overviews

2.1 Background

The intersessional subgroup on Catch, Effort and Sampling Overviews was established by LM 2018 to streamline and facilitate the work on the fisheries and sampling data of the MS and prepare data overviews in advance of the RCG meetings. Before the subgroup was set up, the different RCGs conducted data analysis and overviews separately with minimal exchange, resulting in redundancies and efficiency loss. Furthermore, a substantial part of the work was being carried out during the RCG meetings themselves and so not readily available to inform RCG preparation and meeting discussions. The intersessional subgroups are intended to work throughout the year, self-organising in terms of their work and having an RCG chair as point of contact. The pan regional subgroup on Catch, Effort and Sampling Overviews consists of members of all three RCGs (RCG NS&EA, RCG NA and RCG Baltic) and had Josefine Egekvis (chair RCG Baltic) as contact point during its activities.

It is chaired by Ana Cláudia Fernandes (IPMA, Portugal) and Lucía Zarauz (AZTI, Spain). The tasks and output from the subgroup fall into 2 main types of work:

- i. To develop tools for internal RCG work and
- ii. Preparatory work for decision making, including input for regional work plans and working groups.

2.2 Work-plan

ToRs and work plan (specific tasks) for 2023-2024:

1. To incorporate feedback from the RCG, NC, LM, and WGBFAS for further development of the overviews
2. To finish the adaptation to RDBES format for CE, CL (overviews) and CS (Shiny app)
3. Sampling overviews
 - To include the possibility to be fed with multiannual data
 - To include some information on bycatch sampling
 - i. to answer the request by ISSG PETs
 - ii. to show general information about the sampling
4. To incorporate feedback from benchmark templates
5. To include some graphs on the website

The group met in biweekly online meetings (via Teams) from December 2023 to June 2024, dealing with specific tasks, reviewing progress and adjusting workloads. Eight group meetings were carried out. Minutes were circulated after each meeting to keep a record on the progress achieved and the tasks ahead.

During the first meeting, the tasks planned for 2023/24 were revised. The group decided to prioritize the adaptation of the annual overviews to RDBES format, including the incorporation of the feedback received from different groups. The adaptation and development of the multiannual and the sampling overviews was left for a later stage. The group also planned to answer the request from ISSG PETs regarding the sampling coverage reported to the RDBES; and to collaborate with WGBFAS and WGBOG, to share the code and help them in the process of taking over the production of their respective overview.

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2. ISSG RDB Catch, Effort and Sampling Overviews

RCG dates determine the deadlines of the group work, which were set as the following:

- January – April: Time to progress in the different tasks
- 1st April: Deadline for the RDBES data submission. After this we need to prepare the input data and produce the reports
- 1st May – deadline for producing the ISSG report with description of the work performed and all overviews should also be made available to the RCG (Sharepoint)
- 10-14 June: RCG NANSEA & BA: The work developed by this ISSG will be presented in the RCG Technical Meeting

*The deadline for data submission was postponed until the 28th of April, which provoked a subsequent delay in the rest of deadlines

The group agreed to continue using GitHub (<https://github.com/ices-eg/RCG-RDBES-Overviews>) to organize the work and record the progress but this year a new GitHub repository was requested and created to accommodate the new code for the RDBES data format without compromising the history of the previous versions used for the RDB data. However, all the tasks to be performed by the group were still compiled and kept in the 'Projects' panel from the previous repository (<https://github.com/ices-eg/RCGs>). There are 4 different projects ('WG and Benchmark templates', 'Multiannual fisheries overviews', 'Sampling overviews' and 'Annual fisheries overviews') with the description of the tasks to be accomplished for each of them. The tasks were prioritised, and participants were assigned to different tasks, according to their availability and expertise. During the meetings, time was also used for clarification of the tasks and to discuss/agree on the way forward for the improvement of the overviews.

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2.3 Progress during 2023/2024

The format agreed for RDBES data extraction was used for the data uploaded in 2024. This data does not include UK countries as a flag country, but they may be present in the cases of landings abroad.

The SharePoint (SP) for [RCG Intersessional Work](#) was used to hold documents, protocols, minutes and final overviews (04. Working documents/ISSG RDB Overviews). The RDBES data extractions were placed in a restricted Sharepoint that only ISSG participants working with the data have access to ([RCG data](#)).

All the r-scripts were stored in GitHub. A new repo was created with the name of "RCG-RDBES-Overviews" <https://github.com/ices-eg/RCG-RDBES-Overviews>. This new repo will contain the new code and new functions to produce the overviews using the RDBES data, whereas the old repo (<https://github.com/ices-eg/RCGs/tree/master>) will be maintained to conserve the previous work based on the RDB data format. During the development of the script, participants are advised to use branches and pull requests. Commits on the latter are reviewed by other participants prior to merging the code changes to the main branch.

The guidelines to harmonize the coding style and best practices defined last year (some of them borrowed from WGRDBES-EST) were maintained:

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2. ISSG RDB Catch, Effort and Sampling Overviews

- We generally use the “Tidyverse” style <https://style.tidyverse.org/> except we use camelCase for variable names;
- Prefer nouns when naming your objects; use concise and meaningful names; avoid using names of existing objects.
- Use verbs as start of function names (e.g., import...; generate...)
- It is preferable to use base R but the following packages (and their dependencies) are also allowed: *data.table*, and *dplyr* (not the whole *tidyverse*). If contributors wish/need to use other packages this must be discussed beforehand.
- Captions for tables will be placed on the top, and for figures, on the bottom

The work accomplished by the subgroup is described below:

I: Annual catch and effort overviews: development and adaption to RDBES format

In relation to the conversion to RDBES data format, there was a discussion about whether to (1) adapt the scripts, so that they can run with the new RDBES format, or (2) adapt RDBES data into RDB format, so that we can keep the code as it is and maintain compatibility of the time series in the multiannual reports. The group decided to go for the first option and adapt the code so that it can be run with RDBES data. This will allow to take advantage of all the information contained in CL and CE tables, as new variables have been added.

The code and the functions utilised in the annual overviews are very complex and difficult to understand (i.e. the parametrization in the excel file), which limits the number of people actively involved in the work and hampers its development. The adaptation of the code was seen as a good opportunity to simplify the whole procedure.

The format of the overviews was also discussed. The *word* format used until now is easily referenced but increases the complexity of the code and produces long documents which are difficult to read without getting lost. Alternatively, *html* format with the information organized in multiple panels, can be created with a simpler script and produce more user-friendly documents, easier to navigate through. There were some doubts regarding how these documents can be referenced, but the group concluded that they can be cited (we still don't have a proposal for a cite but it can be discussed at the TM).

The group decided therefore to produce the new overviews in *html* format, with the following specifications:

- All the information that was in the *word* report will be included in the *html*
- The figures and tables will not be saved in a separate folder (as they were before)
- The code will use *ggplot* or base R, because it will be less heavy to produce the outputs.
- Preferably, interactive plots will not be used at this stage, as they increase significantly the size of the outputs and may cause problems when compiling the reports. This can be reviewed and improved at a later stage.
- The functions need to be rewritten or adapted to the new format. New functions will be documented in the header of the script, indicating what the script is doing, authors and contributors. If the function is based on a previous one, the text will also include some reference

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to the original function (name, authors and some developer notes with the history of main changes).

The group discussed whether to include further quality checks in the data preparation script, and decided to keep it simple at this stage, and focus on the adaptation to RDBES format. The data prepared will use the scientific values reported in the CL and CE tables (which are the mandatory ones in the RDBES format) and will keep the column 'EncryptedVesselsId', which lists the unique *vessel id* included in each aggregation and will allow to comply with the rule of a minimum number of 3 vessels in each aggregation in the results presented. If an aggregation has less than 3 vessels, data needs to be aggregated in a different level to be presented in the reports.

The feedback of the different RCGs, the Liaison meeting and the NCs was revised, and the main developments performed were the following:

- A whole new structure was created in `html`
- The code producing the overview was reviewed and simplified. The code was then structured into smaller and functional parts that are sourced from a main script in order to produce the overview. Each of these parts represents or contributes to a stage of the overview production. This structure was chosen to reduce the complexity of the code, make debugging easier in case of need, facilitate developments on single parts while reducing the risk of inadvertent changes to the code dedicated to others. A header reporting, among others, the aim of the code was added in the beginning of each of these scripts in order to facilitate understanding of their content and enhance collaboration between the developers. Messages were added in the code of each of the sourced parts so that the analyst receives a diagnostic of completion while running the main code and rendering the overview document.
- All functions (barplots and maps) were rewritten/adapted
- Consistency in the colours used for different countries is ensured
- The parametrization of the overview was simplified,
- The code was updated to run with the current R version. The texts were revised, and data policy links were updated.
- A function to get the data from the Sharepoint was adapted and improved
- Fleet register information was rearranged
- A single table containing the name of the species, the ASFIS and WORMS codes, the catch group and the ISCAAP code was created
- A new riverplot was created for the landings abroad. The group tried to find an alternative static version (`ggalluvial`, `ggplot(geom_sankey)`, `riverplot`) but they were neither readable for large amounts of data, nor in CRAN. Finally, it was decided to use an interactive plot as an exception.

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2: Multiannual catch and effort annual overview

The group decided to focus on the annual overviews in order to have a complete product finished (instead of two products in progress). The plan for the future is to adapt the previous scripts so that they can run with the new RDBES format and produce the multiannual overviews.

3: Sampling annual overview

The adaptation of CS data is more complex, as it includes several hierarchies with different sampling designs and a lot of new variables. Because of this complexity, the group decided not to work in this task during the current time period.

Recapping what was discussed last year, the plan for the future is to develop (or adapt) a new shiny app specifically for the new RDBES data format, that will allow the presentation of more different types of information about the sampling and the data. In order to avoid duplication of effort this work should be collaboratively performed between this ISSG's members and the ICES Working Group on Estimation with the RDBES data model (WGRDBES-EST) members that are contributing to the development of the R package *RDBESvisualise* <https://github.com/ices-tools-dev/RDBESvisualise>. Since the RDBES data format allows more detailed recording of sampling information, it will be important to spend time planning which data are the most useful for users to explore in an app. Previous discussions in the FishNCo project have highlighted that the coverage (e.g. spatial, temporal, technical) of sampling programmes is of interest, as are variance estimates.

4. Production of the overviews

The data preparation for producing the new reports was made after the deadline of the RDBES data call and the data extraction (28th April).

The different reports were then produced with the new data and minor changes of the code were still performed to improve the presentation of the results. These reports are available in the SharePoint for RCG Intersessional Work (Working documents/ISSG Overviews):

- Annual overviews for each region (NSEA, NA and BA) – *html* documents
- Annual overviews for the Small Scale Fisheries (SSF) for each region (NSEA, NA and BA) – *html* documents

5. Reports for ICES WG

During the last few years, this group has produced an overview report for ICES WGBFAS and a template for WGBOG, which were very well received by those WGs. However, in 2023, the RCG NANSEA & BA recommended ICES to consider how they can take over the outputs created by the RCG. The idea behind is that RCGs shall be responsible for the quality of the data and the production of the overviews needed for the RCG work (which includes only EU Countries). And similarly, ICES shall be responsible for the quality of the data and the production of the overviews needed for its own groups (which comprises non-EU countries). This recommendation was endorsed by WGRDBESGOV, highlighting that the reports are currently based on RDB data and can be used for data until 2022, and that work is needed to adapt the overviews to the RDBES

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data format. RCGs can provide WGBFAS and WGBOG with the current code as it is, but for data coming from 2023 and onwards they shall take over the task of adapting the code.

a. WGBFAS

The group communicated with WGBFAS to inform them that their report is not going to be further developed and adapted to RDBES data format. However, this ISSG is available to give support to the process of translating the code until they are more familiarized with the format and able to run it.

It is proposed that in a transitional phase (1 to 2 years), RDBES data for catch and effort may be converted to RDB format, so that the current script based on these tables can be run. The scripts to convert the RDBES CE/CL tables into RDB format can be found in the WKRDDBES RAISE&TAF2 GitHub repository ([link](#), containing functions respectively for conversion of CE and CL). For the sampling data it will be more difficult, as the format has changed very much, and WGBFAS will need to explore what type of sampling outputs they want to present and the best way to include them in the overview.

During the annual meeting, WGBFAS briefly discussed the overview documents and the suggested changes by the ISSG. The group wants to keep using the overviews in the report and as a discussion basis during the meeting (e.g. sampling intensity and -distribution, main gears or number of age readings per stratum). Some members of the ISSG are also members in WGBFAS, therefore the switch to a “self-organized” RDB(ES) overview for the Baltic Sea stocks should be possible until the next meeting. The work would be organized intersessionally with the respective people and with help from the ISSG.

In 2024, WGBFAS was granted access to RDBES data (restricted to selected people, confirmed by the chair of WGBFAS) and should therefore be able to achieve the change and to run the scripts for the working group. For the beginning, the group will likely use transformed data (from RDBES back to RDB format, for CL and CE and, where possible, CS data).

However, WGBFAS and the ISSG should keep close contact and exchange regularly to benefit from each other's work with regards to RDBES data analysis and knowledge on processing these data. The presently used InterCatch database will be replaced by RDBES in the coming years and tools like the RDB(ES) overviews should be running and in place by then as they will be an important part of the assessment work and a tool of identifying research needs and regional work plans.

b. BOG

The feedback received from the RCG NANSEA & BA was taken into account before sending the template to BOG. In the same email, the group informed that this type of report is not developed yet for the new RDBES format and needs a proper adaptation. If there is interest in this type of information, this ISSG can give support in the process of translating the code in a first stage. After that, the groups may be able to run the code by themselves as they get more familiarized with the new format.

Additionally, the group informed BOG that there is the option that RDBES data for catch and effort is converted to RDB format, so that the current script based on these tables can be run. The scripts to convert the RDBES CE/CL tables into RDB format can be found in the WKRDDBES RAISE&TAF2 GitHub repository ([link](#), containing functions respectively for conversion of CE and CL). For the sampling data it will be more

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difficult, as the format has changed very much, and BOG will need to know how to include this information in the overview.

BOG answered to or mail. They agree that these maps are very useful, not just for benchmarks but for the ongoing work of assessment working groups. They would like to have them available, but they need first to investigate the best way for ICES to take this on. They will get back to us when we have determined the way forward.

6. Other requests

a. ISSG PETS

The chair of ISSG PETS contacted this ISSG to ask if it would be feasible to identify all the at-sea sampling programmes reported to the RDBES in the NANSEA & Baltic regions. The aim is to identify high risk metiers for different groups of PETS species, and evaluate their sampling coverage. The ISSG is aware that MS may have other sampling programmes not reported to the RDBES, but it is interested to know what is actually reported. This was a request made by DGENV during WKPETSAMP2.

The ISSG prepared the information requested

2.4 Roadmap/follow-up

The work of the subgroup will be presented during the 2024 RCG TM. The tasks proposed for the next period will be decide during the RCG TM (this report will be updated accordingly with the tasks decided)

The subgroup will continue the work on a regular basis throughout the year to improve their achievements and give feedback to the RCG-chairs in regular intervals.

2.5 SG Participants

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3 ISSG Métier and transversal variable issues

3.1 Background

The aim of the group is to maintain the list of DCF métiers on level 6 and level 7 that is used for data calls in ICES and STECF and to serve as a forum to discuss harmonization of methods used for assigning métier codes and working with transversal data (i.e. fishing activity data) in EU Member States.

The group has been ongoing since 2018, starting with a workshop discussing the methods used to assign métier codes to transversal data, issues and best practices, and the following years as an RCG ISSG, reports can be found [here](#). Achievements from the ISSG over the years have been:

- Implementation of [new standardized and harmonized list of métier codes on DCF level6](#) regionalized by RCG (and DCF level7 for LP fisheries since 2023), which was approved by RCG's in 2020 and in the September 2020 Liaison meeting, it was agreed by the NCs that the new codes for métiers and reference lists is used and implemented by the MS. [A table links between new and old codes](#) (in cases that a mesh size range has been split up, a choice has been taken to link to one of them).
- Reference lists:
 - [Reference species list on how to group species \(into group of species on DCF level5\)](#)
 - [Reference areas list establishing the link to RCG area](#)
 - [Reference gears list on how to group gears \(into gear DCF level4 and gears' group\)](#)
- [Script](#) that can assign métier codes using a specified data input format. It also has functionalities 1) to propose an estimate of métiers where all needed information is not available and 2) to refine the "rare" métiers firstly assigned by the general algorithm focusing on the year*vessel main métiers, in order to limit the multiplication of métiers calculated.
- [Manual](#) explaining the background, script, input format and reference lists
- GitHub repository ([RCGs/Metiers at master · ices-eg/RCGs \(github.com\)](#)) where all the material is available (reports, métier list, reference lists, script, manual)

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The new métier codes are now being requested in ICES (*RDBES and VMS/Logbook*) and STECF FDI data calls.

In 2021, the group changed name to 'ISSG on Métier and transversal variable issues', also including a task to look at effort calculations for the small-scale fisheries (including the use of the fecR package) and a task to discuss harmonization of methods used to estimate fishing activity data in global (in particular to complete RDBES tables CE&CL). Since 2023, the group ensure continuity also with an initiative from RCG Econ to develop an alternative fleet segmentation in order to keep the link between the two approaches.

The ISSG is chaired by Sébastien Demaneche, Ifremer, France and Josefine Egekvist, DTU Aqua, Denmark.

3.2 Work - plan

ToRs and work plan (specific tasks) for 2023/2024:

1. Continue following and evaluating the implementation of the métier codes on a pan-regional level and maintaining métier codes and other reference lists and scripts.
2. Update métier descriptions from the 2023 RDBES data call (tables CE&CL). Consider the use of the métier description reports.

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3. Based on the information received from the questionnaires sent out in spring 2023, evaluate the use of cross-validation methods in MS to combine data coming from different declarative sources, the ongoing standard practices and develop, on this basis, best practices guidelines, with a specific focus on the RDBES CE and CL tables.
4. Work on a template to document CE and CL data uploaded to RDBES
5. Continue following up on the development of the fecR package and its efforts to calculate fishing effort metrics that are harmonized/homogenized between MS
 - Collaborate with ISSG SSF regarding the inclusion of SSF in fecR
6. Continue following the development under RCG-Econ of an alternative fleet segmentation and advice on it in order to keep the link between the two approaches (depending on RCG-Econ work on this, especially the feedback of the 3rd workshop held in May 2023)

3.3 Progress during 2023/2024

The ISSG had the following online 1.5 - 2 hours meetings during the last year:

09-02-2024	Meeting to plan ISSG tasks for the 2023/2024 term.
04-03-2024	Meeting to follow up on ISSG tasks. Requests to add new codes were discussed and following invited experts participated in the meeting: Torsten Schulze (Germany), Mathieu Depetris (RCG LP), Hugo Maxwell (RCG LP), Charis Charilaou (RCG MBS)
05-04-2024	Meeting to follow up on ISSG tasks
22-04-2024	Meeting to finalize ISSG tasks and report

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Task 1: Continue following and evaluating the implementation of the métier codes on a pan-regional level and maintaining métier codes and other reference lists and scripts.

In 2023 new métier codes were requested in the STECF FDI data call and in ICES data calls (VMS/Logbook and RDBES). Within this task, requests for new métier codes to add and revision of other reference lists (area, gear or species) are evaluated, approved and implemented. The ISSG will also follow the implementation of these new developed métier reference lists in data calls. The task in 2024 focused on reviewing requests for new métier codes, discussing them during the ISSG meetings, and maintaining the métier reference lists according to decisions. The current métier reference lists (DCF level6 & level7) and other reference lists (e.g. species reference list) elaborated by the group are available in the following GitHub: <https://github.com/ices-eg/RCGs/tree/master/Metiers>

Request to update species reference list with “*Ammodytes marinus*”

A request to update the species reference list with “*Ammodytes marinus*” (*QLH/Lesser sand-eel*) from ASFIS 2022 was followed up, and a global review and update of the species reference list ('Metier Subgroup Species 2020 cleaned version.csv', file available in the GitHub) was made:

- From the RDBES CL data from 2021-2022 all species that have been reported (Landings, BMS and Discards registered) were listed.
- Based on this review, species that were missing in the species reference list were identified.

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- For the missing species the same type of information as in the species reference list were defined (e.g Genus, EnglishName, TaxoCode, ISSCAAPcode, ISSCAAPdescription, Grouping_2) and added to the list associated to the combination 'FAOcode+ScientificName' related to the missing specie considered.
- Then the column "Grouping_3_DWS" was checked against the Deep water regulation (EC) 2016/2336 Annex I.
- The species '*Ammodytes marinus*' (*QLH/Lesser sand-eel*) that was requested to be added, was not reported in the previous RDBES CL data (2021 and 2022), but was added directly to the file.
- The output files were saved as '.rdata' and in '.csv', where the column names were slightly simplified for an easier R coding.
- Finally, the new species were added in the end of the original excel file and new version was uploaded on the GitHub. Then the group has a look into to validate the updates done. Furthermore, the species reference list on GitHub was renamed from 'Metier Subgroup Species 2020.xlsx' to 'Metier Subgroup Species.xlsx' and the reference to the species list in the métier R-script was updated.

Request to update métier reference lists to ICES and JRC

Métier codes listed below have been agreed by the ISSG and have been added to the métier reference lists (level 6 and level 7) available on the GitHub. ICES and JRC have been then contacted to include these new métier codes in their métier reference lists for data calls (e.g. *ICES vocabulary for Metier6_FishingActivity and NationalFishingActivity for ICES RDBES data call*)

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RCG area	Métier level 6 code	Description	Update
MBS	LA_LPF_<14_0_0	Lamprette, Large pelagic fish, see the code reg. mesh size and selectivity device	Removed extra _0 from the code. The code replaces LA_LPF_<14_0_0_0
MBS	LA_SLP_<14_0_0	Lamprette, Small and large pelagic species, see the code reg. mesh size and selectivity device	Removed extra _0 from the code. The code replaces LA_SLP_<14_0_0_0
MBS	LA_SPF_<14_0_0	Lamprette, Small pelagic fish, see the code reg. mesh size and selectivity device	Removed extra _0 from the code. The code replaces LA_SPF_<14_0_0_0
MBS	LLS_LPF_0_0_0	Set longlines, Large pelagic fish, see the code reg. mesh size and selectivity device	Added on request from Malta
NAtd	GNS_MPD_>0_0_0	Set gillnets, Mixed pelagic and demersal, see the code reg. mesh size and selectivity device	Added on request from Azores
NAtd	GNS_MPD_100-119_0_0	Set gillnets, Mixed pelagic and demersal, see the code reg. mesh size and selectivity device	Added on request from Azores
NAtd	GNS_MPD_120-219_0_0	Set gillnets, Mixed pelagic and demersal, see the code reg. mesh size and selectivity device	Added on request from Azores

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RCG area	Métier level 6 code	Description	Update
NAtd	GNS_MPD_>=220_0_0	Set gillnets, Mixed pelagic and demersal, see the code reg. mesh size and selectivity device	Added on request from Azores
LDF	OTM_CRU_>0_0_0	Midwater otter trawl, crustaceans, see the code reg. mesh size and selectivity device	Added on request from Norway
LDF	OTMCRU_16-31_0_0	Midwater otter trawl, crustaceans, see the code reg. mesh size and selectivity device	Added on request from Norway

RCG area	Métier level 7 code	Description	Update
MBS	LLS_LPF_0_0_0_SWO	Swordfish (<i>Xiphias gladius</i>)	Added on request from Malta

Below the ISSG discussions on requested métier codes are detailed also for the métier codes of which have not all been yet approved by the ISSG.

Request from Malta (Jurgen Mifsud). Charis (chair of RCG MBS joined the 2nd ISSG meeting as invited expert to discuss the request):

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The group discussed the introduction of two new métier codes in the reference list requested from Malta.

- LLS_LPF_>0_0_0
 - The group noted that the gear (LLS, level4) and target group of species (LPF, level5) codes are available in the EU-MAP commission delegated decision (EU 2021/1167), so they are in line with one of the ISSG establishing principles¹
 - Following ISSG establishing principles and for harmonization, the new métier code should be: LLS_LPF_0_0_0 (as LLS gear doesn't have a mesh size)².
 - **Following discussions, the group concluded and agreed to add, for the MBS RCG area³, the métier code LLS_LPF_0_0_0 to the métier DCF level6 métier reference list and the métier code LLS_LPF_0_0_0_SWO to the DCF level7 métier reference list** (for LP fisheries needs).
- GTN_MPD_>0_0_0
 - This requested métier code concatenates combined gears (*combined gillnets-trammel nets*) and mixed target group of species (*mixed pelagic and demersal species*)

¹ Principles used for defining métier codes: 1. Gear-target species assemblage combinations (métier level 5) follow table 5 from EU-MAP commission delegated decision (EU 2021/1167), ...

² Principles used for defining métier codes: ... 4. “_0_0_0” for gears with no mesh size (e.g., *longlines, hand lines, trolling lines*), “_>0_0_0” for unknown mesh size also for the following gears: traps, pots, beach seines and dredges (*gears with mesh size but for which no mesh size ranges have been defined*).

³ See métier codes “LLD_LPF_0_0_0” at DCF level6 and “LLD_LPF_0_0_0_SWO” at DCF level7 which already exist for MBS RCG



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- At this stage, there is no métier codes in the reference list which concatenate combined gears and mixed target group of species as 1) the métier script will not be able to calculate it directly and 2) more details are preferred.
- Nevertheless, combined gears and mixed target group of species have been included separately in some cases for some specific gears/fisheries in the métier reference list for national (regional) needs and could be specified directly in the input data for the métier script by countries which need it.
- The question is also what is the intention of the fishery: is it a real mixed fishery, or do they target e.g., demersal fish and accidentally catch pelagic? The group argued that normally the principal target group of species in value or weight should be preferred exception of when real mixed group of species are targeted. A question remains also if it is small or large pelagic which are eventually combined with demersal fish?
- The group noted also that the following métiers already exists in the métier DCF level6 reference list for RCG MBS: GNS_DEF, GNS_LPF, GNS_SLP, GNS_SPF & GTN_DEF with following mesh-size ranges “<16_0_0”, “>=16_0_0” & “>0_0_0”.
- The group noted that the gear (GTN, level4) and target group of species (MPD, level5) codes are available in the EU-MAP commission delegated decision (EU 2021/1167), so they are in line with one of the ISSG establishing principles⁴
- The group argued that, to seek consistency, if added, GTN_MPD métier code should be associated with the following mesh size ranges at DCF level6 “<16_0_0”, “>=16_0_0” & “>0_0_0” when the mesh size is unknown.
- **The group concluded that more information about this fishery is needed from Malta. This could be either provided for the ISSG to discuss, or to be discussed at the RCG MBS TM 2024. RCG MBS chair will contact Malta regarding this request.**

Request from Germany for two new gears/métiers codes. Torsten Schulze (from Germany joined the 2nd ISSG meeting as invited expert to discuss the request):

The group discussed the introduction of these two new gears codes in the reference lists.

- TBC used for Crangon/Brown shrimp fishery. Has a different impact on the sea floor than the TBB⁵. Germany would like to add the métier TBC_CRU_16-31.
 - The group highlights that this is not in line with the establishing ISSG principles⁶. The code TBC is not available in the EU-MAP commission delegated decision (EU 2021/1167) also not included in the ICES métier level 4 vocabulary.
 - The group question if this specific métier could not be already identified with the specific métier code “TBB_CRU_16-31_0_0” specifying especially specific mesh-size

⁴ Principles used for defining métier codes: I. Gear-target species assemblage combinations (métier level 5) follow table 5 from EU-MAP commission delegated decision (EU 2021/1167), ...

⁵ TBC: Trawl Beam/Bottom Crangon (i.e. brown shrimp, TBB_CRU_16-31). By value (one of) the largest single species fisheries in the North Sea. Has different impact on sea bottom - employs special gear (bobbin ropes) - than e.g. TBB_DEF>80 (tickler chains). Under discussion because of intensive use of Wadden Sea National Park areas (COM Action Plan; prohibition of mobile bottom contacting gears in marine protected areas until 2030).

⁶ Principles used for defining métier codes: I. Gear-target species assemblage combinations (métier level 5) follow table 5 from EU-MAP commission delegated decision (EU 2021/1167) ...





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- ranges regarded other métier as “TBB_DEF”. In this case, could be TBC only used as a national code?
- The group argued that a new gear code could be added but should correspond to a real different gear that the ones already included in the list and not only to a specific target species or a specific mesh-size range. If added, the gear code should be added to the EU-MAP gear reference list also ICES vocabulary.
 - The group argued that the métier reference list at DCF level6 aims to provide harmonization/homogenization of codes between MS, métiers at DCF level7 could be used for further specification/national-regional needs. The group fears that adding such specific gear will open the gate for a huge variety of gears in the métier reference list which is not the aim of the métier reference list at DCF level6. National codes / DCF level7 should be preferred to better distinguish gears.
 - Finally, the group discussed the introduction of the gear code TBC in the reference lists with Torsten and **concluded that the brown shrimp fishery can be identified with the code TBB_CRU_16-31_0_0 and therefore not to introduce the TBC gear code in the reference lists.** The code should continue to be used for national purposes. It was noted that previously the code TBS has been used by NL, but that is not anymore possible with the new métier list. NL should use also TBB_CRU_16-31_0_0 for its brown shrimp fishery for seek of consistency.
- FSN stow net⁷.
 - The group highlight that this new fishing technique is rarely employed at this stage. May-be should be discussed further if this new fishing technique grow up?
 - The FSN gear code is in the EU-MAP commission delegated decision (EU 2021/1167) table 5 list as stow nets, and in the FAO list [Classification and illustrated definition of fishing gears \(fao.org\)](https://www.fao.org/fishery/Classification-and-illustrated-definition-of-fishing-gears) but from these definitions it seems that this gear code is more related to a pots/traps fishery which is not in line with the Germany fishery described in the request.
 - Finally, the group discussed the suggestion with Torsten and, since this gear is currently used by very few vessels in Germany and it doesn't seem that it is used by other countries, **concluded and decided not to include the FSN gear code yet in the métier reference lists**, but to keep aware that it might become a larger fishery in the future. If needed, the gear code to use should be discussed as FSN gear code detailed in FAO seems more related to a pots/traps fishery that the one described by Germany.

Request from RCG LP to include information on School type/FADs in the métiers reference lists (Mathieu from RCG LP joined the 2nd ISSG meeting as invited expert to discuss the request).

- A short presentation was made by Mathieu regarding the importance of inclusion of information on School type (e.g. Fishing Aggregating Devices, FADs) for LP fisheries (key element for these fisheries).

⁷ FSN: stow net. Very different character of fishing technique and impact on the sea bottom than e.g. TBB. Rarely employed at the moment, but might become more interesting within the discussion of the COM Action Plan. Might be an alternative for the fishermen targeting brown shrimp (Cragon; TBB_CRU_16-31).





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- This information is currently used by France/Tropical purse seine fleets and is included in the FDI data call in the domain definition to provide quality biological information. Indeed, when estimating biological data, it is crucial to split fisheries regarding this information.
- This information is asked by the RFMOs ICCAT⁸ and IOTC⁹ for their specific data calls also included in WECAFC discussions on DCRF¹⁰. This information is then used for stock assessment and quotas evaluation.
- The group indicated that in RDBES CE table, “Number of FADs/Buoy” is a variable asked but the group noted that it should be associated to specific métiers considering only the ones which are performed on e.g. FADs.
- Artisanal fisheries in France/Other regions (*Réunion/Mayotte Islands in Indian Ocean; Guadeloupe/Martinique islands in West Indies*) used also FADs. For these fisheries, this information is crucial to estimate weight catch by trip (*LPUE*), species composition also for biological information (*fish size*).
- The group discussed the issue and the way to introduce this information in the métier codification with Mathieu also if it should be added at DCF level6 or DCF level7 and **concluded and agreed to include this new information as optional information in the DCF level 7 métier codes reference list for LP fisheries.**
- Sébastien/Mathieu suggested codes to add in the DCF level7 métier reference list. Proposal is in accordance with how this information is asked in ORGPs CTOI/ICCAT and WECAFC data calls. To keep consistency in historical time series, the métier codes available nowadays will be kept as it is. It means that no information about FADS/School types means the information is unknown. Then the proposal is to give the possibility (optional) to MS to inform further in the métier code DCF level7 (after the group of species targeted) about the “FADS/School type” used distinguishing three different cases: “Fishing on schools associated with anchored floating objects”, “Fishing on schools associated with drifting floating objects” and “Fishing on free schools (unassociated with floating objects)”. These codes proposal have to be then evaluated by the ISSG and the RCG LP before being added in the JRC and ICES métier reference lists for data calls. At this stage the proposal is to add this possibility only for LP fisheries in RCG LDF area but RCG LP has to discuss the possibility to add them also in other RCGs’ LP fisheries.

Feedback from RCG LDF

- There was a comment from RCG LDF that they do not see the relevance of including métier at DCF level7 for their RCG and think that it could be confused¹¹.
- The group discussed the feedback and agreed to send a clarification to RCG LDF chair.
- A clarification was sent to the RCG LDF chair where it is clarified that metiers on DCF level7 have been, at this stage, only added to answer specific needs of the RCG LP and will not be asked for other fisheries especially the fisheries monitored by RCG LDF. ISSG understand the

⁸ International Commission for the Conservation of Atlantic Tunas

⁹ Indian Ocean Tuna Commission

¹⁰ Western Central Atlantic Fishery Commission (WECAFC) – Data Collection Reference Framework (DCRF).

¹¹ The RCG was questioned about the added metiers on DCF level 7 which were established based on Spain's request for the Large Pelagic fisheries, as it was important for them to keep the target species for RCG LP. The RCG LDF considers that there is no need for metiers on level 7 to be assigned to this RCG even if some bycatch of large pelagic occurred in some areas. It was highlighted that the RCG LDF data-call requests submission of effort and landings data calculated on the metier level 6.





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fear of possible confusion as RCG LDF and RCG LP could have fisheries in the same area but, as far as ISSG known the two RCGs have no responsibility for same fisheries. Therefore, we highlight that RCG LDF will not have to work on fisheries where métier DCF level7 will be asked and we agree not to include any specific DCF level7 métier for the fisheries monitored by RCG LDF.

- **The reply was accepted by the RCG LDF chair.**

Issue with SX/SBV gear code

- **SX** gear codification (*combined beach and boat seines*) was added to the métier codes reference list for the cases where detailed gear is not available i.e. SB (*Beach seines*) or SV (*Boat or vessel seines*).
- This is coded as **SBV** in the ICES Vocabulary so confusing and not harmonized.
- The group noted that this mixed codification is not available in the EU-MAP commission delegated decision (EU 2021/1167) which is informed only for the gear codes SB (*Beach seines*) and SV (*Boat or vessel seines*).
- It is only Spain that has used the SX métiers in the STECF FDI data call, and only for the RCG MBS.
- In the FAO description, SX is described as something different i.e. a seine not included in the other seine category as SB or SV. <https://www.fao.org/fishery/en/geartype/204/en>. SBV is not a code available in FAO gear classification.
- **The group discussed the issue and agreed that it would be more correct to use the code SBV (i.e. SBV_DEF_>0_0_0 with the > added) for seek for consistency with ICES vocabulary and to better explain that it is a mixed code when SB or SV could not be detailed.**
- Spain was asked if they could update the full time series from “SX_DEF_0_0_0” to “SBV_DEF_>0_0_0” once the métier reference list will be updated. Spain asked that they could not update the full time series but can change the métier codes from 2023 onwards only if needed.
- **Following this answer**, (and the fact that it is only Spain who has used the SX métiers in the FDI data call, and only for the RCG MBS), **the group continued the discussions and agreed that it is better to accept the code as it is (SX_DEF_0_0_0) (and with a missing >) in order to keep the historical time series consistent.** Nevertheless, the group remembered that it would be more correct to use the code SBV (*i.e. SBV_DEF_>0_0_0 with the > added*) when possible to update the full time series to better explain that is a mixed code when SB or SV could not be detailed.
- ICES would be approached to see if it is possible for them to add SX gear (in addition to SBV) in their vocabulary (esp. for WGBYC data call).

Request from Azores for new métier code

Azores ask for the introduction of a new métier code GNS_MPD_>=100_0_0 (Set Gillnets, Mixed pelagic and demersal) at DCF level 6 in the métier reference list. The group discussed the proposal.

- Hugo (expert from Azores) explain that this is an important coastal fishery in Azores, at the shelf where they catch both pelagic and demersal fish. Hugo explain that in Azores this





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correspond to a real mixed fishery where both pelagic and demersal fish are targeted / caught without any preferences.

- The group noted that following métier codes: GNS_DEF, GNS_LPF & GNS_SPF with following mesh-size ranges “100-119_0_0”, “120-219_0_0” & “>=220_0_0” at DCF level6 already exists for RCG NAtl
- Therefore, following the discussions, **the group concluded and agreed that the following métier codes could be added to the RCG NAtl DCF level6 métier reference list to take into account the request and the specificity of this fishery: “GNS_MPD_100-119_0_0”, “GNS_MPD_120-219_0_0”, “GNS_MPD_>=220_0_0” and “GNS_MPD_>0_0_0” (for the cases where mesh-size range is not known).**
- The group noted that this mixed target group of species métier could not be inferred directly from the métier script, Azores should insert a national specificity in the R-script.

Correction of code

The métier codes **LA_LPF_<14_0_0_0**, **LA_SLP_<14_0_0_0** and **LA_SPF_<14_0_0_0** available in the DCF level6 métier reference list on the GitHub contained an extra zero, giving a warning in the script. They have been corrected to: **LA_LPF_<14_0_0**, **LA_SLP_<14_0_0** and **LA_SPF_<14_0_0** in the métier code reference list following the coding principles retained by the ISSG.

Request from Norway on métier codes used in FAO area 48

Norwegian catch statistics lists a large volume of catches in area 48 (Antarctic-Pacific) for which there are no appropriate metier codes in the métier reference list. For RDBES the valid codes in area 48 is listed hereunder:

OTB_MDD_70-119_0_0

OTM_DEF_70-119_0_0

The Norwegian catches in the area are krill, caught with either unknown trawl or pelagic trawl with mesh size 16 mm. Therefore, there is a need to add métier code with mesh size ranges adapted and targeting “crustaceans” i.e. “CRU”.

RCG ISSG suggestion:

- Area 48 is under LDF RCG.
- The RCG ISSG suggest to add the codes OTM_CRU_16-31_0_0 & OTM_CRU_>0_0_0 for the RCG LDF, to follow existing mesh size ranges and métier codification rules.
- The already existing code MIS_CRU_0_0_0 can be used when gear is unknown

Task 2: Update métier descriptions from the 2023 RDBES data call (tables CE&CL). Consider the use of the métier description reports.

In 2023 a script for creating métier description reports based on RDBES effort and landings data (tables CE&CL) was developed. Reports are generated in a hierarchical way to describe the métiers on the different levels (4, 5 and 6). In 2023 data was available for one year, while in 2024 three years of data were available regarding the ICES RDBES data call.



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The group highlights that first aim of such métier description will be to assist MS for defining métier, to gain in harmonization/homogenization between MS and also to support end-users when they have to combine/concatenate métiers for their needs.

A data extraction from RDBES CE and CL tables has been made available to the ISSG in beginning April (deadline RDBES data.call 2/04; 3 years of data 2021-2023 asked for tables CL and CE), and after some updates from MS made available again in early May.

Then the script developed last year was used to update the métier description html report. The script run annually, a task for 2024/2025 could be to adjust it to run multiannually. In the reports it is possible to see which countries and vessel lengths are using the métiers on the levels 4, 5 and 6. On métier levels 6, the landed weight and value of top 15 species are illustrated, and a map by ICES rectangle is showing where the fishery is taking place.

Following conclusions were made by the group:

Baltic Sea:

- OTM is ranked highest with both weight and value of landings in 2021, 2022 and 2023, and is used mainly by vessels larger than 18 m.
- GNS is ranked highest in fishing days and number of trips in 2021, 2022 and 2023, and is used mainly by vessels less than 12 m.

North Sea and Eastern Arctic:

- OTM is ranked highest in landings weight in 2021, 2022 and 2023, and the highest landings are from vessels larger than 40 m.
- OTB is ranked highest in landings value in 2021, 2022 and 2023.
- In 2021 and 2022 TBB is ranked highest in fishing days, while it is OTB that is ranked highest in 2023.
- In 2021, 2022 and 2023 OTB is ranked highest in number of trips.

North Atlantic:

- OTM is ranked highest in landings weight in 2021, 2022 and 2023, and the highest landings are from vessels larger than 40 m.
- OTB is ranked highest in landings value in 2021, 2022 and 2023.
- FPO is ranked highest in fishing days and in number of trips in 2021, 2022 and 2023

Example of overview on level 4 from 2023:

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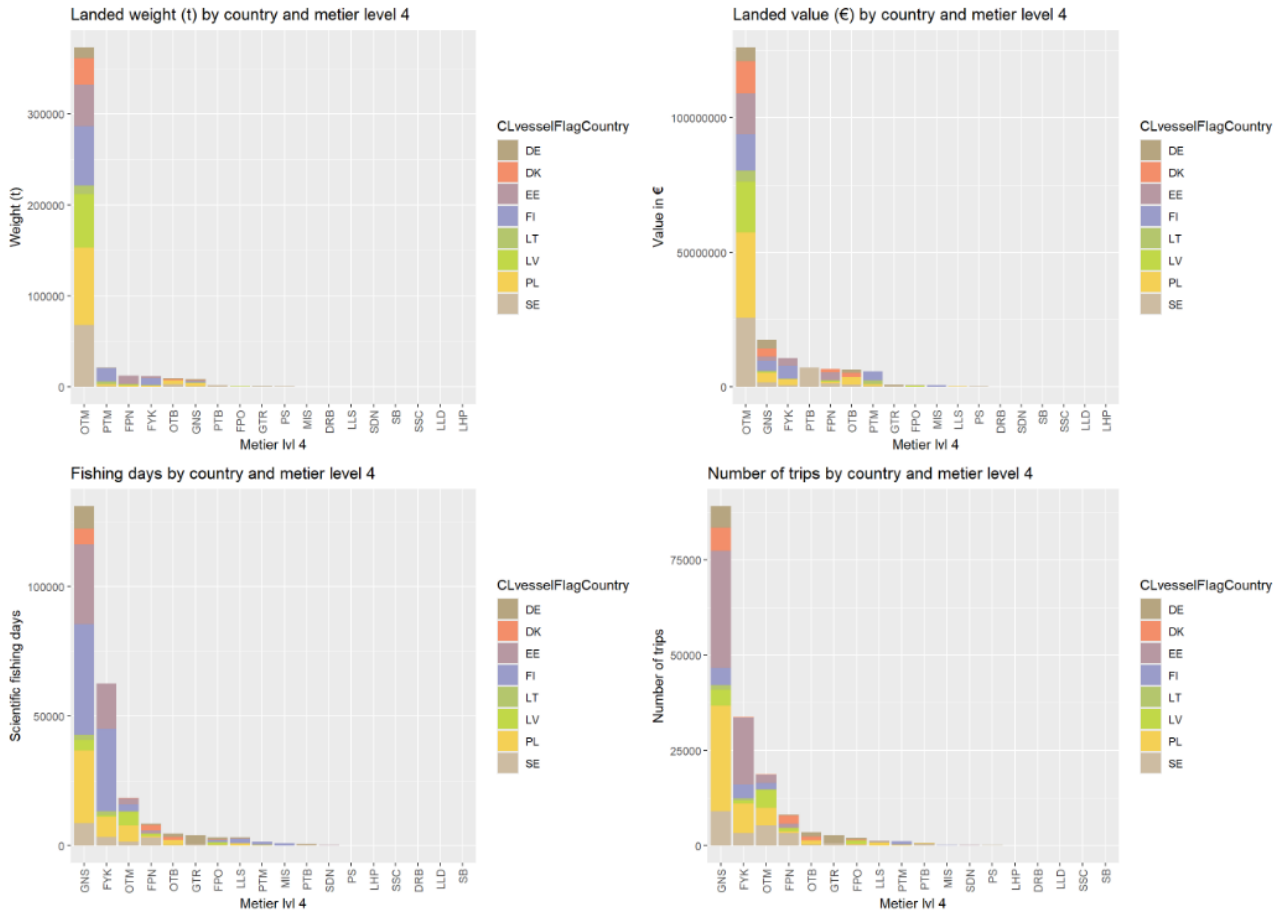


Figure 3.1: example of overview on level 4 by vessel flag country from Baltic Sea 2023 metier description report, based on RDBES data.

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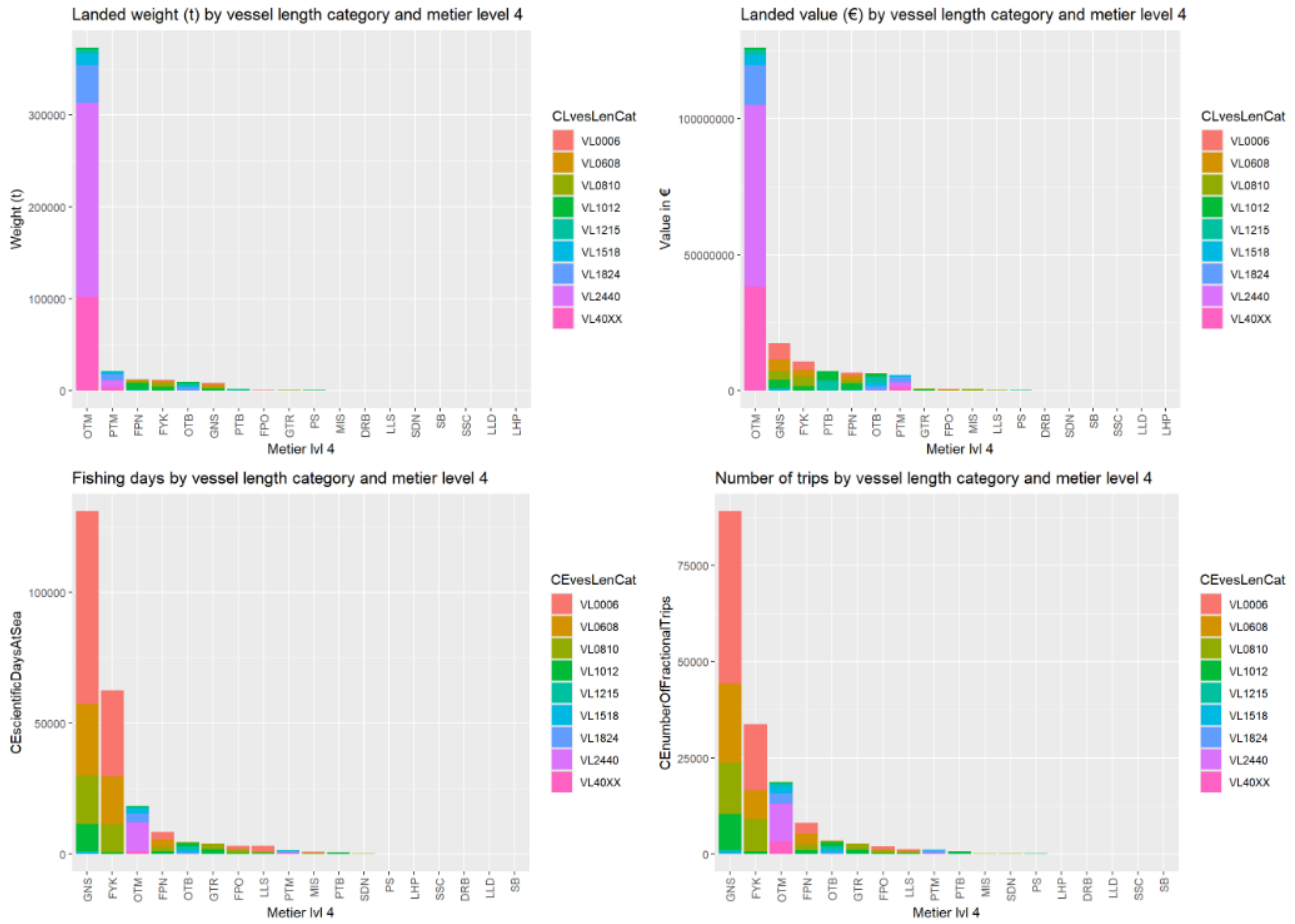


Figure 3.2: example of overview on level 4 by vessel length group from Baltic Sea 2023 métier description report, based on RDBES data.

The métiers were ranked by RCG region, and overviews were made of the top 10 métiers by weight of landings, value of landings and fishing effort measured as fishing days. The tables were made as a total for the years 2021-2023 (table 1-3) and for 2023 separately (table 4-6). By weight, it is the OTM_SPF métiers that is ranked highest in all 3 regions. By value, OTM_SPF is ranked highest in the North Sea and Eastern Arctic and Baltic Sea regions, but in North Atlantic PS_SPF ranked highest. By effort the picture is different with the TBB_CRU_16-31 ranked highest in North Sea and Eastern Arctic, DRB_MOL_>0_0_0 in North Atlantic and GNS_FWS_>0_0_0 in the Baltic.



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Table 3.1: Top ten métiers ranked by total catch weight, for the period 2021 to 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the weight in tonnes and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total weight (t)</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	OTM_SPF_32-69_0_0	977067	7
	OTB_DEF_<16_0_0	301703	4
	OTM_SPF_16-31_0_0	246012	5
	DRB_MOL_>0_0_0	183418	5
	OTB_DEF_>=120_0_0	159008	10
	TBB_CRU_16-31_0_0	73452	4
	HMD_MOL_>0_0_0	57990	1
	OTM_DEF_16-31_0_0	53926	3
	PTM_SPF_32-69_0_0	45687	4
OTB_CRU_32-69_2_22	37743	2	
North Atlantic	OTM_SPF_40-54_0_0	558893	5
	PS_SPF_>0_0_0	453824	3
	PTM_SPF_40-54_0_0	318593	2
	OTM_DEF_40-54_0_0	174984	2
	HMS_SWD_0_0_0	166163	1
	OTB_DEF_100-119_0_0	106978	4
	OTB_DEF_70-99_0_0	94523	4
	DRB_MOL_>0_0_0	84751	4
	LLS_DEF_0_0_0	82910	3
PTB_MPD_55-64_0_0	79389	1	
Baltic	OTM_SPF_16-31_0_0	911864	7
	OTM_SPF_>0_0_0	201367	1
	PTM_SPF_16-31_0_0	74439	6
	OTM_SPF_32-89_0_0	63720	7
	FPN_SPF_>0_0_0	35980	6
	FYK_FWS_>0_0_0	18985	7
	OTB_DEF_>=120_3_120	17461	3
	GNS_FWS_>0_0_0	13461	8
	FYK_SPF_>0_0_0	12858	5
GNS_DEF_110-156_0_0	7981	8	





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Table 3.2: Top ten métiers ranked by total economic value, for the period 2021 to 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the economic value in euros and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total value (€)</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	OTM_SPF_32-69_0_0	638107384	7
	OTB_DEF_>=120_0_0	441232802	10
	TBB_CRU_16-31_0_0	367392385	4
	DRB_MOL_>0_0_0	312083986	5
	TBB_DEF_70-89_0_0	190360401	3
	TBB_DEF_70-99_0_0	153097867	3
	OTB_CRU_32-69_0_0	126375212	5
	OTB_DWS_>=120_0_0	112303450	2
	OTM_SPF_16-31_0_0	107705341	5
OTB_DEF_<16_0_0	93829535	4	
North Atlantic	PS_SPF_>0_0_0	533191220	3
	OTB_DEF_100-119_0_0	394970881	4
	LLS_DEF_0_0_0	373644782	3
	OTB_DEF_70-99_0_0	326876970	4
	FPO_MOL_>0_0_0	254711412	4
	DRB_MOL_>0_0_0	248569894	4
	MIS_MIS_0_0_0	204290911	5
	OTM_SPF_40-54_0_0	202133680	5
	GNS_DEF_100-119_0_0	197963773	4
PTM_SPF_40-54_0_0	192325103	2	
Baltic	OTM_SPF_16-31_0_0	259745607	7
	OTM_SPF_>0_0_0	41779322	1
	GNS_FWS_>0_0_0	27867568	8
	OTM_SPF_32-89_0_0	21702367	7
	FYK_FWS_>0_0_0	21041967	7
	PTB_FWS_>0_0_0	20341398	2
	PTM_SPF_16-31_0_0	17755374	6
	GNS_DEF_110-156_0_0	12590675	8
	FPN_SPF_>0_0_0	10609565	6
OTB_DEF_>=120_3_120	10371399	3	



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Table 3.3: Top ten métiers ranked by total fishing effort, for the period 2021 to 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the effort measured in fishing days and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total effort</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	TBB_CRU_16-31_0_0	143811	4
	DRB_MOL_>0_0_0	71073	5
	FPO_CRU_>0_0_0	58830	7
	GNS_DEF_120-219_0_0	26038	6
	OTB_DEF_>=120_0_0	24358	10
	OTB_MCD_90-99_1_300	22297	2
	OTB_DEF_70-89_0_0	21875	4
	TBB_DEF_70-99_0_0	21616	3
	TBB_DEF_70-89_0_0	21264	3
FPO_MOL_>0_0_0	20440	5	
North Atlantic	DRB_MOL_>0_0_0	397951	4
	FPO_MOL_>0_0_0	271718	4
	MIS_MIS_0_0_0	261019	5
	LLS_DEF_0_0_0	177698	3
	GTN_DEF_>0_0_0	152387	2
	FPO_CRU_>0_0_0	129686	4
	PS_SPF_>0_0_0	99815	3
	GTR_DEF_60-69_0_0	96688	2
	GTR_DEF_>0_0_0	90476	2
OTB_DEF_70-99_0_0	72232	4	
Baltic	GNS_FWS_>0_0_0	259951	8
	FYK_FWS_>0_0_0	126006	7
	GNS_DEF_110-156_0_0	88645	8
	OTM_SPF_16-31_0_0	41821	7
	FYK_ANA_>0_0_0	36602	4
	GNS_SPF_32-89_0_0	35431	7
	FYK_SPF_>0_0_0	16585	5
	GNS_ANA_>=157_0_0	14356	7
	GNS_DEF_>=157_0_0	13887	6
FYK_CAT_>0_0_0	11220	2	



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Table 3.4: Top ten métiers ranked by total catch weight, for the year 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the weight in tonnes and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total weight (t)</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	OTM_SPF_32-69_0_0	347321	7
	OTB_DEF_<16_0_0	129525	3
	OTM_SPF_16-31_0_0	103530	4
	OTB_DEF_>=120_0_0	59088	9
	DRB_MOL_>0_0_0	54490	5
	OTM_DEF_<16_0_0	26678	3
	TBB_CRU_16-31_0_0	21147	4
	OTB_CRU_32-69_2_22	13604	2
	OTB_CRU_32-69_0_0	13150	5
HMD_MOL_>0_0_0	12803	1	
North Atlantic	OTM_SPF_40-54_0_0	206081	5
	PS_SPF_>0_0_0	148349	3
	PTM_SPF_40-54_0_0	100613	1
	OTM_DEF_40-54_0_0	93422	2
	HMS_SWD_0_0_0	49601	1
	OTB_DEF_100-119_0_0	34557	4
	OTM_DEF_32-39_0_0	33316	2
	DRB_MOL_>0_0_0	28303	4
	PTB_MPD_55-64_0_0	27566	1
OTB_DEF_70-99_0_0	27312	3	
Baltic	OTM_SPF_16-31_0_0	289164	7
	OTM_SPF_>0_0_0	65479	1
	PTM_SPF_16-31_0_0	20761	5
	OTM_SPF_32-89_0_0	17946	4
	FPN_SPF_>0_0_0	11786	6
	FYK_FWS_>0_0_0	6205	7
	FYK_SPF_>0_0_0	5054	5
	OTB_DEF_>=120_3_120	4512	3
	GNS_FWS_>0_0_0	4202	8
OTB_SPF_16-31_0_0	2826	4	





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Table 3.5: Top ten métiers ranked by total economic value, for the year 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the economic value in euros and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total value (€)</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	OTM_SPF_32-69_0_0	239662357	7
	OTB_DEF_>=120_0_0	197502124	9
	TBB_CRU_16-31_0_0	124883622	4
	DRB_MOL_>0_0_0	114173297	5
	TBB_DEF_70-89_0_0	85687132	3
	OTM_SPF_16-31_0_0	55589755	4
	OTB_CRU_32-69_2_22	54387956	2
	OTB_DWS_>=120_0_0	53792265	2
	OTB_CRU_32-69_0_0	47725077	5
OTB_DEF_<16_0_0	40067310	3	
North Atlantic	PS_SPF_>0_0_0	179562537	3
	OTB_DEF_100-119_0_0	145929870	4
	LLS_DEF_0_0_0	121104727	3
	OTB_DEF_70-99_0_0	114041075	3
	MIS_MIS_0_0_0	86584438	4
	DRB_MOL_>0_0_0	82889653	4
	FPO_MOL_>0_0_0	77297902	4
	OTM_SPF_40-54_0_0	73134849	5
	GNS_DEF_100-119_0_0	70780552	3
PTM_SPF_40-54_0_0	65333348	1	
Baltic	OTM_SPF_16-31_0_0	104081919	7
	OTM_SPF_>0_0_0	13538757	1
	GNS_FWS_>0_0_0	8780323	8
	OTM_SPF_32-89_0_0	8264771	4
	FYK_FWS_>0_0_0	7260213	7
	PTB_FWS_>0_0_0	7065170	2
	PTM_SPF_16-31_0_0	5708321	5
	FPN_SPF_>0_0_0	3991173	6
	GNS_DEF_110-156_0_0	3892316	8
OTB_DEF_>=120_3_120	2962429	3	





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Table 3.6: Top ten métiers ranked by total fishing effort, for the year 2023 across three regions: North Sea and Eastern Arctic, North Atlantic, and Baltic. Each métier's entry includes the effort measured in fishing days and the number of countries contributing to these metrics.

<i>Regions</i>	<i>Métier level 6</i>	<i>Total effort</i>	<i>Number of countries contributing</i>
North Sea and Eastern Arctic	TBB_CRU_16-31_0_0	39814	4
	DRB_MOL_>0_0_0	22795	5
	FPO_CRU_>0_0_0	18643	7
	TBB_DEF_70-89_0_0	8720	3
	GNS_DEF_120-219_0_0	8203	4
	OTB_DEF_>=120_0_0	7104	9
	OTB_CEP_70-89_0_0	6716	2
	OTB_MCD_90-99_1_300	6595	2
	FPO_MOL_>0_0_0	6235	3
OTB_DEF_70-89_0_0	5910	4	
North Atlantic	MIS_MIS_0_0_0	120104	4
	DRB_MOL_>0_0_0	115505	4
	FPO_MOL_>0_0_0	85119	4
	LLS_DEF_0_0_0	57203	3
	GTN_DEF_>0_0_0	49245	2
	FPO_CRU_>0_0_0	37129	4
	GTR_DEF_>0_0_0	34871	2
	PS_SPF_>0_0_0	32120	3
	OTB_DEF_70-99_0_0	22763	3
OTB_DEF_100-119_0_0	21343	4	
Baltic	GNS_FWS_>0_0_0	75980	8
	FYK_FWS_>0_0_0	42229	7
	GNS_DEF_110-156_0_0	27350	8
	OTM_SPF_16-31_0_0	13669	7
	GNS_SPF_32-89_0_0	11929	7
	FYK_ANA_>0_0_0	11883	3
	FYK_SPF_>0_0_0	5281	5
	GNS_ANA_>=157_0_0	4957	6
	GNS_ANA_110-156_0_0	3573	6
GTR_DEF_110-156_0_0	3478	2	



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The métier description reports will be made available on the RCG sharepoint and accessible for experts who have access to it.

Future work:

- Create a multiannual métier report, with averages over the years, and a graph showing the annual variation, in addition to an annual report for the last year.
- When the RDBES data license/confidentialities issues has been updated, develop (in addition to the internal version) a public version of the report where, for example, all figures with less than 2 vessels are removed i.e. show information only where there are more than 2 vessels (3 vessels at least). Such rules should be evaluated to see how it will impact the report, what will be missing.

Task 3: Questionnaire on cross-validation methods used by MS to combine data from different sources

This task work has been based on the replies from last year questionnaire (sent from the ISSG to NCs in spring 2023) regarding methodologies used by MS to calculate fishing activity estimates. The questionnaire evaluates especially the use of cross-validation methods in MS to combine data coming from different declarative sources.

As the replies to the questionnaire were both very comprehensive and diverse, they were first summarized in the ISSG Métier and transversal variables issues last year' report. This year, work has been devoted to a selection of questions in order to identify common/standard practices used in MS and to highlight practices which could have the potentiality to enhance data quality. The focus this year has been on the three following topics:

1. What is the type of declarative data considered to calculate/assess fishing activity data?
2. The algorithms/methods used to cross-validate/combine the different types of declarative data available to consolidate/optimize national fishing activity data (e.g. bringing together fishermen logbooks and sales notes data).
3. The algorithms/methods used to estimate/assess the value of landings (esp. for landings not sold at auctions).

Overview of conclusions for these different topics are summarized hereunder.

Topics	Description	Potential to enhance data quality
Type of declarative data considered to calculate/assess fishing activity data.	Logbooks and Coastal logbooks, principal data sources. Sales note and geo-location data, major other data sources.	Following the implementation of obligation on keeping an electronic fishing logbook by all Union vessels (<i>deadline 2028</i>) including <10m SSF vessels, develop coastal e-logbooks adapted to their specificities to monitor SSF fishing activity. Consider e.g. a sales event and/or a VMS position also when not assigned to a declared fishing trip to improve data completeness and develop concomitantly SSF geo-localization data.

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Topics	Description	Potential to enhance data quality
		<p>Consider sales note and geo-location data to be cross-checked with declared fishing trips.</p> <p>Consider complementary data (e.g. <i>fishing licenses</i>) to further improve data quality.</p>
<p>Algorithms/methods to cross-validate/combine the different types of declarative data available to consolidate/optimize national fishing activity data.</p>	<p>Two major approaches:</p> <ol style="list-style-type: none"> 1) Same identifiers shared 2) Algorithm developed based first on vessel & dates and eventual other information (e.g. <i>species composition</i>) 	<p>Develop use of a common identifier and share MS' algorithms to improve data combination.</p> <p>Avoid using unique data source. Encourage implementation of cross-validation methods to enhance data quality and completeness.</p>
<p>Algorithms/methods to estimate/assess the value of landings (esp. for landings not sold at auctions).</p>	<p>Three different approaches:</p> <ol style="list-style-type: none"> 1) Directly issued from sales note data considered as complete 2) "Global" average-based approach derived from a general average price from sales note data 3) Specific algorithm combining linked sales note data if available and calculated average price when needed 	<p>Encourage developing specific algorithm combining information directly deducted from linked sales notes data if available and calculated average price when needed.</p> <p>Consider spatial (e.g. <i>landing harbor</i>), temporal (e.g. <i>month</i>) and vessel characteristics (e.g. <i>vessel length ranges</i>) information to calculate average price per species when needed.</p> <p>Use of expert knowledge or additional information could be needed to complete information.</p>

More details can be found in annex 2, where for each question, the first paragraph "Summarized information" presents information detailed in the last year' report to introduce new readers and in the second paragraph some of the practices are discussed more in depth especially regarding their potential to enhance data quality. Finally, the replies by country related to the topic have been summarized and are presented in the appendix of the annex (*one appendix by topic*).

The other topics/questions will be included in next year's work of the group. The final aim of this task, in intermediate term, would be to suggest and develop best practices guidelines for cross-validation methods to calculate/improve fishing activity data with a specific focus on the RDBES fishing activity data (i.e. variables asked in the RDBES tables CE&CL) and an objective of enhancing fishing activity data quality and completeness.

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It will take the form of a stand-alone document compiling all the conclusions done during the ISSG years' work on this issue.

Task 4: Work on a template to document CE and CL data uploaded to RDBES (documentation of methods)

In 2023, it was considered that ISSG is now dealing with transversal variables in general which are especially reported in the RDBES CE and CL tables. Based on questionnaire information, the group is working on best practices guidelines, and considers useful to have a common format to document the transversal data (effort and landings) that are submitted to the RDBES (i.e. having a good and comprehensive documentation of the methodologies used to calculate fishing activity estimates for data calls). Such documentation will be essential to enhance harmonization between MS and will be a necessary first step in the move towards the development of best practice guidelines that ultimately consider the large diversity of data sources and methodologies being used (e.g., with regards to SSF).

A template to document methods used for processing the CE and CL data uploaded to the RDBES have been elaborated and is available in Annex I¹². Part of the information can be retrieved directly from the data or 'upload logs', but the ISSG considers that here more details can be given and that it is useful to have a common descriptive format that can also be publicly shared with users of data that doesn't have access to data and upload logs.

The template was created based on the STECF FDI national chapters, FDI methodology meeting report, AER/FDI workshop report and AER/FDI questionnaire developed in 2023 by the ISSG.

The ISSG suggests that the usefulness of documenting the data in this format should be discussed at the RCG NANSEA & Baltic TM in June 2024 in the planned subgroup on RDBES.

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Task 5: FecR package

The aim of this task is to continue to follow up the development of the fecR package and its effort to calculate fishing effort metrics that are harmonized/homogenized between MS. Specific focus should be done, in collaboration with ISSG SSF, to include SSF in fecR calculation.

The fecR package provides a set of functions that implement the so called "Nicosia principles for fishing effort calculation" with the aim to standardize the calculation of the fishing effort metrics "fishing days" and "days at sea" by MS to answer data calls (e.g. STECF FDI data call). The development of fecR started during the 2nd Workshop on Transversal Variables (22-26 February 2016) and a first version was put online in a public repository (CRAN) in early November 2016. The use of the package for MS effort calculations was then promoted in the 2017 and 2018 FDI data calls but in December 2018 the package was put offline and archived by CRAN after its code failed to pass a few internal checks. CRAN registered difficulties in contacting the maintainer of the package. From that moment to present, the package remained offline with only archived versions being available to MS a situation that complicated its usage in the answering of data calls. In 2023 the ISSG agreed not to have the ambition to put the package on CRAN again, but to make it available in a public

¹² The group discussed the eventual overlap of such task with the new WGRDBESGOV Quality ISSG subgroup and agreed that ISSG task will focus on the methods when Quality ISSG will focus on data.

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repository. From that, the fecR package R scripts have been made available, since last year, through a GitLab hosted at the JRC: <https://dcallnet.jrc.ec.europa.eu/gitlab/transversal/fecR> (which requires an approved EU login). The package can be found also at <https://rdrr.io/cran/fecR/>. The ISSG suggest that the updated code should be publicly available, and not requiring an EU login.

Through this task, the group has the ambition to continue to help and assist fecR package development to enhance harmonization/homogenization between MS when calculating fishing effort metrics. Furthermore, the group considers that following improvements could be made of the fecR package:

- Updated the package to the newest version of R.
- Make the script suitable for the RDBES aggregation.
- Consider that increasingly the logbook data are reported on haul level.
- Handling of small-scale fishery, considering their specificities also regarding specific type of data sources available.
- Check the FecR package against the new control regulation and minimum logbook requirements which will be asked in it.

The group agreed to postpone most of the tasks of this work to next years as there was already a lot of topics to deal with by the ISSG and as most competent, for this task, group members were not available this year. The unique ambition of the group for this year work was to see if the R package can be updated to the newest version of R and doing that trained some more members to the fecR package to be able to help to improve it in the future.

The first conclusions after checking the operability of the fecR package were favorable with regard to the correct performance of the main functions. Following the decision not to include it in CRAN, the package does not need to pass any internal checks and calculates the fishing effort without any version issues. A grammar issue within the code was addressed related to the fishing areas list format. A publicly available code can be downloaded from the GitLab repository (<http://dcallnet.jrc.ec.europa.eu/gitlab/r-packages/fecR.git>).

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Task 6: RCG Econ alternative fleet segmentation' initiative

The aim of this task for the group is to continue to follow up the development under RCG Econ of an alternative fleet segmentation and advice on it in order to keep the link between the two approaches (*métiers and fleet segmentation*). The work to do on this task by the group was fully dependent of the feedbacks of the 3rd workshop (held in May 2023) on this topic which has considered also some development made by the ISSG in 2023.

The ISSG chairs were in contact with the chairs of the RCG Econ fleet segmentations workshops, and got following feedback regarding the ongoing process and the expected workplan:

- No workshop or any coordinated action is planned at the moment, but the alternative approach is steadily developing.
- The method has been tested in Iceland, to characterize their demersal trawl fleet and in Romania.
- The approach is tested on the German fleet with an AI-extension.

As there was no plan developed at this time on how to proceed to advance on this task from RCG Econ fleet segmentations workshops chairs, as there was no task expected from ISSG to advance it and as there was no

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work/tasks listed for ISSG (expected from the ISSG) in the RCG Econ report and Alternative fleet segmentation workshop reports (which was checked by the ISSG), no further work on the approach was done from the ISSG side but the issue was kept in its roadmap for the next years.

It should be discussed at the Liaison meeting in September if the ISSG should continue following the RCG Econ fleet segmentation and the tasks on which the ISSG could have some input. Anyway, the two approaches are linked and a new alternative fleet segmentation should take into consideration the different métiers practiced by the vessels during the year (especially for the pre-segmentation step discussed during the last workshop). For example, such alternative fleet segmentation could consist in bringing together in fleet segments, vessels having relatively homogeneous annual exploitation strategies of métiers.

New Control Regulation and revision of the Implementation Act

The new control regulation (EU 2023/2842) has been agreed, and can be found here: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302842

The ISSG has been informed that the main features of the new control regulation are:

1. Full digitalisation with tracking and catch reporting for all fishing vessels
2. For small scale fisheries, there will be electronic catch reporting (also fishing without a vessel) and position data
3. For recreational fisheries there will be electronic catch reporting and data collection
4. The rules regarding data access and protection will be clearer

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The ISSG was also informed that over the next two years, the existing implementing act (EU 404/2011) (<https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32011R0404> ; where all the details for the implementation of the regulation are explained) will be reviewed (which e.g., details logbook reporting). DG-MARE encouraged the group to make review from the data collection (RCG) side on this, e.g., on effort variables reporting and to provide feedback.

As a first comment, the group highlight that, currently, there is a mis-match in transversal variables listed in table 6 of the EU-MAP (EU 2021/1167) that MS should be able to report and what is optional in the current Implementation Act of the control regulation (difference between control regulation – what is mandatory and scientific/DCF regulation). The ISSG recommends that the variables that are mandatory to report in the EU-MAP table 6 are also mandatory in the new Control Regulation Implementation Act, focusing on annexes X, XI and XII.

Examples of variables that are listed in the EU-MAP table 6 not mandatory in Control Regulation Implementation Act.

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Variables in EU MAP (EU 2021/1167) table 6	Control Regulation Implementation Act (EU 404/2011)	Comment
Days at sea	Annex X Day, month, hour (local) and port of departure and return (M)	OK
Hours fished (optional)	Fishing time (O). Total time spent searching (e.g. using sonar) or fishing shall be given and equals the number of hours spent at sea minus the time spent in transit to, between and returning from the fishing grounds, dodging, inactive or waiting for repair.	In DCF hours fished would normally be interpreted as only fishing, while the fishing time in the Control Regulation involves searching.
Fishing days	Date (M). Date for each day at sea shall be recorded in a new line and shall correspond to each day at sea.	OK
kW * Days at sea	Annex X Day, month, hour (local) and port of departure and return (M). kW is recorded in fleet register.	OK
GT * Days at sea	Annex X Day, month, hour (local) and port of departure and return (M). GT is recorded in fleet register.	OK
kW * Fishing days	Date (M). Date for each day at sea shall be recorded in a new line and shall correspond to each day at sea. kW is recorded in fleet register.	OK
GT * Fishing days	Date (M). Date for each day at sea shall be recorded in a new line and shall correspond to each day at sea. GT is recorded in fleet register.	OK
Number of trips	Annex X: Logbooks are filled by fishing vessels and trip dates.	OK
Number of fishing operations	Annex X: Number of fishing operations (M)	OK
Length of nets (m) * soak time (days)	Annex X Gear dimensions (O). Gear size and dimensions shall be given according to the specifications in column 2 of Annex XI. Annex XI for gillnets and entangling nets: Length, height	Optional in control regulation
Number of nets/length	Annex X Gear dimensions (O). Gear size and dimensions shall be given according to the specifications in column 2 of Annex XI. Annex XI for gillnets and entangling nets: Length, height	Optional in control regulation
Number of hooks, number of lines	Annex X Gear dimensions (O). Gear size and dimensions shall be given according to the specifications in column 2 of Annex XI. Annex XI for hooks and lines: Total number of hooks/lines shot each day	Optional in control regulation
Number of pots, traps	Annex X Gear dimensions (O). Gear size and dimensions shall be given according to the specifications in column 2 of Annex XI. Annex XI for traps: Number of pots shot each day	Optional in control regulation
Number of FADs/boys		
Number of support vessels		

3.4 Roadmap/follow-up

Main outcomes and communication between the ISSG and other groups

- Reviewed requests for new métier codes to add in the reference lists from countries and RCGs
- Created métier description reports from 2024 RDBES data call for 2021-2023 CL and CE data
- Analysed questionnaire on cross-validation methods on data sources, methods to combine different types of data and methods used to estimate value of landings to identify methods used and suggest best practices
- Suggestion for a template to document methods used for creating the RDBES CE and CL data.
- Tested fecR package with new version of R
- Made an overview of what is required in the EU-MAP table 6 and what is optional/mandatory in the existing Control Regulation Implementation Regulation.

Communication:

- For task 1, the ISSG chairs were in contact with ICES and JRC to update the métier codes reference lists (DCF level6 and level7) for data calls (e.g. ICES RDBES and STECF FDI data calls).
- For task 1, the ISSG chairs were in contact with the RCG LDF chair to answer a request regarding the added métiers on DCF level7 asked for LP fisheries
- For task 1, the ISSG chairs invited MS representatives to meetings if they requested on updating the métiers list.
- For task 4 communications with JRC on the GitLab that stores the fecR package code.
- For task 6, the ISSG chairs were in contact with the chairs of the RCG Econ fleet segmentation workshops to get an update on the status of the work.

Suggestions for the next step in intersessional work (future tasks)

1. Continue following and evaluating the implementation of the métier codes on a pan-regional level and maintaining métier codes and other reference lists and scripts.
2. Update and further develop métier description report, so that it can produce a multiannual report and can take the RDBES data license into account for making a public report.
3. Continue the analysis of questionnaires sent out in spring 2023, to evaluate the use of cross-validation methods in MS to combine data coming from different declarative sources, the ongoing standard practices and develop, on this basis, best practices guidelines, with a specific focus on the RDBES CE and CL tables.
4. Evaluate eventual feedback on the draft template elaborated in 2024 to document methodologies applied to inform RDBES CE & CL tables
5. Continue following up on the development of the fecR package to calculate fishing effort metrics that are harmonized/homogenized between MS.



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3.5 SG Participants

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ANNEX 3.1. Template to document methods applied to prepare commercial landings (CL) and effort (CE) data submitted to RDBES

This document aims to collect information on the preparation of data submitted in response to the joint RCG-ICES data call. Some of this information is already contained in specific fields of RDBES data format or in the upload logs. However, this can only give a general overview of the methodologies used, while this document asks to provide more detailed information.

- 1. Describe data origin for scientific values of transversal variables. This can be either official or estimated. Official data can be based either on census or official sampling. If official sampling is in place, please provide a brief description or a reference to the documentation. If values are estimated, please describe methods used for estimation or re-evaluation. In case when different methodology are applied to different fleet segments, please specify.**

Group of variables	Variable name	Methodology applied
Landings	Scientific weight	
	Landings value	
Vessel effort	Scientific days at sea	
	Scientific kW Days at sea	
	GT Days at sea	
	Number of fractional trips	
	Number of dominant trips	
	Number of unique vessels	
Gear effort	Scientific fishing days	
	Scientific kW Fishing days	
	GT Fishing days	
	Scientific vessel fishing hour	
	Scientific kW fishing hours	
	GT Fishing hours	
	Scientific soaking meter hour	
	Scientific number of hauls/sets	
	Gear dimensions	

- 2. Describe data sources for scientific values of transversal variables. The most common are logbooks, sales notes, other declarative forms, sampling data, etc. Please provide a brief description of data sources and indicate if they vary according to vessel length categories (small-scale fleet vs large scale fleet), areas or other factors.**

Group of variables	Variable name	Data sources
Landings	Scientific weight	
	Landings value	
Vessel effort	Scientific days at sea	
	Scientific kW Days at sea	
	GT Days at sea	
	Number of fractional trips	
	Number of dominant trips	
	Number of unique vessels	
Gear effort	Scientific fishing days	



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Group of variables	Variable name	Data sources
	Scientific kW Fishing days	
	GT Fishing days	
	Scientific vessel fishing hour	
	Scientific kW fishing hours	
	GT Fishing hours	
	Scientific soaking meter hour	
	Scientific number of hauls/sets	
	Gear dimensions	

3. Scientific vs official landings weight.

Were differences between official and scientific landings weights identified? If yes, please provide a brief explanation of the differences and describe the calculations that caused the differences

4. Provide information on data completeness and availability.

Were all data on fishing activities available for responding to the RDBES data call? If not, specify the missing data.

Has information on all species landed been submitted to the RDBES? If not, please indicate which were not submitted.

Has information from all vessels been submitted to the RDBES? Is there any part of the fleet that has not been included in the data submitted?

5. Describe methods used to determine métier level 6 codes.

Do you use the script developed by the ISSG Transversal issues? Does the script require national adaptations or additions? If you do not use the script by ISSG, do you use similar algorithms to assign metier codes? If you do not use similar algorithms, specify.

Does your source data contain all the information needed to assign metier codes? If not, specify.

Is the target assemblage determined post factum using dominance criteria as in the script by ISSG or is it known from declarative forms?

How do you deal with a situation when a metier code could not be assigned?

Do you use vessel patterns to reassign rare metiers? If yes, please specify the thresholds applied.

Other information.

6. Describe methods used to calculate effort variables.



Is fishing effort calculated according to the principles specified at the 2nd Workshop on Transversal Variables, Nicosia, 2016?

Do you use the fecR package to calculate fishing effort? If not, do you use similar algorithms to those implemented in the fecR package? If you do not use similar algorithms, specify how you distribute effort to areas and gears?

Does your source data contain all the information needed to calculate effort of small scale fleet? If not, specify.

7. Describe methods used to provide spatial information on landings and effort.

What is a source of information on statistical rectangle? Is it registered in logbooks or other declarative forms? If it is estimated, please provide description of methods.

How is the exclusive economic zone determined?

Do you validate spatial information (statistical rectangles, FAO areas, EEZ) using other data sources, e.g. VMS, AIS, etc.?

Is the spatial information from small scale fleet available in declarative forms? If not, are there any geo-localisation systems used to identify location for small scale fleet activity?

8. Provide information on FDI related fields.

In the data model, there are fields required by FDI database, i.e. 'Fishing Technique', 'Mesh size range', 'Supra Region', 'Geographical indicator', 'Specific conditions to technical measures', 'Exclusive Economic Zone (EEZ)', 'Exclusive Economic Zone Indicator (EEZI)', 'Deep Sea Regulation', 'Official vessel hours at sea', 'FDI confidentiality code'. Do you provide data in all FDI related fields in the data submitted to the RDBES? Please briefly describe the methodology used to complete the FDI fields.

Are values of the relevant FDI fields (Supra Region, Geographical indicator, Fishing Technique) aligned with the values provided to the AER data call?



ANNEX 3.2. Questionnaire on cross validation methods used by MS to combine data from different sources

In 2023 a questionnaire regarding methodologies used to calculate fishing activity estimates was sent out to MS. It evaluates especially the use of cross-validation methods in MS to combine data coming from different declarative sources.

As the replies to the questionnaire were both very comprehensive and diverse they were first summarized in the ISSG Metier and transversal variables issues last year' report. This year, work has been devoted to a selection of questions in order to identify common/standard practices used in MS and to highlight practices which could have the potentiality to enhance data quality.

The focus this year has been on the three following topics:

- What is the type of declarative data considered to calculate/assess fishing activity data?
- The algorithms/methods used to cross-validate/combine the different types of declarative data available to consolidate/optimize national fishing activity data (e.g. *bringing together fishermen logbooks and sales notes data*).

The algorithms/methods used to estimate/assess the value of landings (*esp. for landings not sold at auctions*).

Below, for each question, the first paragraph “Summarized information” presents information detailed in the last year' report to introduce new readers, and in the second paragraph some of the practices are discussed more in depth especially regarding their potential to enhance data quality. Finally, the replies by country related to the topic have been summarized and are presented in the appendix (one appendix by topic).



Type of declarative data considered to calculate/assess fishing activity data.

1. Summarized information

All MS reported the use of the logbooks for vessels over 10 m for effort data. For effort calculation for vessels below 10 m monthly declarative form is used by 3 countries, sales notes are used by 2 countries, logbooks/monthly journals are used by 6 countries and 1 country has not specified the sources. However, in some cases sources are available for part of the fleet. Additional resources are: self-sampling program, observers at sea program and port sampling program which have been used by one MS. One MS raised the issue to report and calculate the fishing from ice. Questionnaire for sales data is used by one country, other obtained data from sales notes. When MS provides information on the geo location data, they reported the VMS data use as required in the Control Regulation. AIS data is collected only by one country. In general, data on SSF vessel position is missing.

2. Description of practices and discussion on potential to enhance data quality

Logbooks ($\geq 10\text{m}/8\text{m}$ in Baltic) or coastal logbooks ($< 10\text{m}/8\text{m}$ in the Baltic) constitute predominantly the principal (sometimes the unique) data sources considered to calculate/assess fishing activity estimates (eventually completed with landing declarations). In the majority of cases, a fishing trip will not be considered if no logbook/coastal logbook is available. Thus, the potential to complete fishing activity data by considering other data sources is little considered. E.g. a sales event and/or a VMS position (estimated with the “fishing” status) not assigned to a declarative fishing trip could constitute an evidence of a missing declaration. Developing such possibility is viewed as a way to improve data completeness.

Coastal logbooks (named differently in each country e.g.: monthly catch reports, monthly declarative fishing forms, coastal monthly logbooks, monthly journals, coastal logbooks) have been developed in several countries to monitor $< 10\text{m}$ SSF vessels’ fishing activity. Providing similar information as European logbooks, they present the advantage to be better adapted to the SSF specificities but, in the same time, are often less comprehensive (e.g. reporting is done by month and not by fishing trip). Nevertheless, development of such adapted declarative forms constitutes a way to improve data quality in particular for SSF fisheries. This is especially the case when SSF only have been monitored via sales notes data. Sales notes data provides insufficient information to meet end-users’ needs even when (but it is not always the case, several countries present non-auction sales not registered) there is an obligation to fill it in for first-buyers (e.g. no gear or spatial information is provided).

Sales notes and geo-location data (esp. VMS data for $\geq 12\text{m}$) constitute the two major other data sources considered. In a larger part, they are used to complete or to check information coming from logbooks/coastal logbooks. Sales notes data is used to estimate landings value and to check landings weight by species and geo-location data is used to check spatial information. Such uses should be promoted and could be used even more not only to check information but to further consolidate/improve data on for example species composition using sales notes data.

Finally, several countries integrate complementary data (e.g. fishing licenses, geo-location data trials for specific fisheries, ...) to complete/enhance fishing information available. This constitutes another way to improve data quality.

Algorithms/methods to cross-validate/combine the different types of declarative data available to consolidate/optimize national fishing activity data.

1. Summarized information

4 MS of 12 do not have cross-check/validation systems in place. The most extended cross-checks are between logbooks and VMS data and/or sales notes. Also, MS focused on data quality checks. The data quality checks are implemented by comparison of registered coordinates with VMS data and logbooks information and difference in caught/landed amount by species in logbooks and sales notes. To get the correct weight/catches combination and value on trip level, the logbooks and landing declarations or the logbook and sales notes data/ transfer information are combined by trip number/logbook number/combination of vessel-id and landing date. To combine the data R scripts are often used. In one case the coastal journals information is combined with logbooks data by merging the trip identifiers supplied by the data provider. The monthly days-at-sea are considered equivalent to the number of fishing trips.

2. Description of practices and discussion on potentiality to enhance data quality

To join/combine the different type of declarative data available (*esp. logbooks and sales notes data or logbooks and VMS data*), two major approaches are favoured: **1)** the same identifiers are shared between the different types of declarative data sources and used to join them, therefore the link is straightforward or **2)** a specific algorithm is developed to combine data (*algorithms put in place have been sparsely detailed in the questionnaires*) first based on vessel information, dates (*i.e. fishing trip departure and return date, landings date, sales date and VMS date*) and eventually harbour name, species composition and/or landings weight (*total and/or by species*). Sharing algorithms between MS should be promoted to improve them as they have been more or less developed depending of the country. Nevertheless, the use of a common identifier shared between all the declarative data available remain the best manner to combine in an effective way the different data source.

Finally, several countries indicate that mainly only one data source is considered to calculate fishing activity data as it has all the information needed. In this case, implementing cross-validation methods could still be encouraged to enhance data quality (*allowing some complementary checks or data consolidation*) and completeness.

Algorithms/methods to estimate/assess the value of landings (*esp. for landings not sold at auctions*).

1. Summarized information

The sources of the value of landings are typically sales notes register or landings declarations. For some countries the sales notes cover the full fleet, for others, when part of the landings is not reported through sales notes, estimates based on e.g., average prices are made. Some MS are estimating the value of landings based on averages.

2. Description of practices and discussion on potentiality to enhance data quality

Several countries do not implement any estimation procedure and directly deduce the value of landings from the sales note data or the landing declarations. These countries indicated that information available in these sources is complete because there is an official requirement for first-buyer to declare.

Some other countries used a “global” average-based approach derived from an average price calculated by species notwithstanding the fact that in many cases value could be directly derived from sales note data once they have been well assigned to the declared fishing trip considered.



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Finally, some countries developed a specific algorithm where value of landings are: **1)** issued from sales notes directly when they could be assigned to the fishing trip considered or **2)** if not, estimated on the basis of an average price per species. Such approach seems to be the most appropriate and should be encouraged.

Regarding the calculation of the average price per species to consider for the estimation, when it is needed, spatial (e.g. *landing harbour or maritime district*), temporal (e.g. *month or quarter*) and vessel characteristics (e.g. *vessel length ranges*) should be soundly considered, eventually in a hierarchical manner.

For some very specific species (e.g. *species never sold in auction market*), the use of expert knowledge or complementary information could be needed.



Appendix I – What is the type of declarative data considered to calculate/assess fishing activity data (summary and extract by country)?

Germany

4 types of data: logbooks ($\geq 10m$), landings declarations (*all*), trips register (*all*) and fishing fleet register (*all*)

Fishing fleet register = vessels register.

For $\leq 10m$, landing declarations are presented as monthly catch reports.

Denmark

6 types of data: sales notes (*all since 1987*), logbooks ($\geq 10m$ – $\geq 8m$ in Baltic since 1987), VMS data ($\geq 12m$ since 2012 – $\geq 15m$ in 2005-2011), AIS data ($> 15m$ since 2006), BlackBox data (*mussel fisheries*) and fishing fleet register (*all since 1987*)

AIS: mandatory for $> 15m$ vessels but also available on many smaller vessels. Increasing data coverage.

Blackbox: geolocalization data with sensor information mandatory for mussel fisheries and available for some EM trial fisheries.

Spain

3 types of data: sales notes (*all*), logbooks ($\geq 10m$) and VMS data ($\geq 12m$)

Sales notes are the only declaratory form of catches in vessels $< 10m$.

Estonia

All the information available: sales notes, logbooks, landings declaration, geo-localization data, fishing vessel register, etc. are centralized in the “Commercial fishing register”.

Fishermen are obliged by law to provide the requested information.

Finland

6 types of data: logbooks ($\geq 10m$), coastal logbooks of non-quota species (*monthly report issued from monthly fishing journal*) and of quota species (*fishing trip-level diary*) ($< 10m$), sales notes data (*all but mainly quota species*), vessel history and capacity data, discards data and incidental bycatch data.

Purchased catches reported by the first-sale buyers of fish. The data is mostly covered by the sales of the quota species only.

France

6 types of data: French fishing fleet register (*all*), European logbooks ($\geq 10m$), National monthly declarative fishing forms ($< 10m$), sales note data (*all*), Geolocation data ($\geq 12m$ VMS + requirement for specific fisheries and on-going trials for some other fisheries), and Scientific census survey of annual fishing activity calendars (*all*).

Sales note data. Landings statistics from auction markets. Do not cover all the French landings as non-auction sales could occur.

VMS devices (hourly basis, mandatory under EU regulation for over 12m' vessels also under national requirements for several specific fisheries e.g. Seine bay' scallop dredgers) and available for some trial fisheries.

Scientific census survey of annual fishing activity calendars. Exhaustive survey (vessels registered in the fishing fleet register) characterizing the inactivity or activity of all the vessels each month of the year and, in the latter case, the métiers practiced and the main fishing areas with the corresponding range of operation.

Ireland

4 types of data: VMS (>12m), logbooks (>=10m), sales notes (<10m) and complementary data (SSCF, <15m vessels).

A sentinel fleet representing about 8% of the under 12m fleet provide effort and catch at daily resolution.

A skipper self-sampling programme started in 2021 where skippers report effort, catch, landings, discards, biological data at operational level.

Inshore VMS, high resolution spatial data are collected for some dredging fleets that provide effort and fishing distribution data.

Lithuania

5 types of data: Landings declarations and logbooks (all since 2019, >=8m before), monthly declarative forms (<8m -> 2018), sales notes (all) and VMS data (>15m for the last 3 years).

For calculation/assess fishing activity data the landings declarations and logbooks have been used for all vessel's segments since 2019. Until 31 December 2018 the vessel segment which length is <8m and operated in the coastal area the monthly declarative form was used as source of data. The sales notes are obligately for all fleet and even if catch is one kilo of any species.

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Latvia

5 types of data: E-logbooks (open sea fishery, >=10m), coastal monthly logbooks (coastal fishery, <=12m), questionnaire "I-Fishery" (<12m -> 2018), sales notes and Latvian Fleet register.

... questionnaire "I-Fishery", which is compulsory for all enterprises.

The Netherlands

3 types of data: logbooks (all), sales notes (all) and VMS data (>=12m since 2012- >=15m - 2005).

Since 2005 all vessels longer than 15m are equipped with a Vessel Monitoring System (VMS) ... From 2012 all vessels longer than 12m are obliged to carry VMS.

Since 2018 vessels smaller than 12m are obliged to report electronic logbooks (e-lite). ... The logbook dataset follows the standard format and is considered completed for all other vessel lengths. This is the main source of landed value and what is used for all data provisions.

Poland

6 types of data: E-logbooks (>=12m), Paper logbooks (10-12m), Coastal logbooks (<10m), Sales notes (all), Fishing licences (<10m) and Geo-localisation system -VMS (>=12m).

Sweden



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5 types of data: Logbooks ($\geq 10m$ + trawlers/seiners $< 10m$ & 8-10m fishing in specific areas), Monthly coastal journals ($< 10m$ other vessels), Landings declarations ($\geq 10m$ + trawlers/seiners $< 10m$ & 8-10m fishing in specific areas), Sales notes (all), and VMS information ($\geq 12m$).

All vessels, 10 meters or more, are required to provide information in logbooks for all fishing activities in the sea. Vessels less than 10 meters fishing with trawls or seiners or land in another country than Sweden and vessels that are 8 meters or more and fish in ICES areas 22-28 and if the vessel has cod onboard that is caught in ICES areas 20-32 also have to fill in logbooks. Other vessels are obliged to fill in monthly coastal journals.

All vessels that fill in logbooks shall after landing of fish fill in a landings declaration.

Sales notes shall be filled in by a registered first-hand buyer after a sale has been closed.



Appendix II – The algorithm/methods used to cross-validate/combine the different types of declarative data available to consolidate/optimize national fishing activity data (e.g. bringing together fishermen logbooks and sales notes data) (summary and extract by country).

Germany

No algorithm. “Identifiers” are shared between the different types of data and used to join them.

For $\geq 10m$, “logbooks” & “landings declarations” are joined by haul number and species.

For all, “logbooks/landings declarations” & “trips register” are joined by trip number.

Denmark

Same “identifier” is shared between “sales notes” and “logbooks” and used to join the two types of data. Back in time, joint was based on vessel-id and landing date.

2001-recent years the “identifier” (logbook number) shared between the two types of data was defined by an algorithm (no detail available) but now it is given directly at the auctions.

The “logbook number” is not available for 1987-2000 data, algorithm used to join the two types of data is based on vessel-id and landing date (no detail available).

No detail about how VMS, AIS and BlackBox data are joined to “logbooks / sales notes” data.

Spain

Cross-validation of the different type of data (logbooks, sales notes and VMS) performed for the $\geq 10m$ vessels. No detail of the algorithm implemented to join the different type of data.

Spain cross-validate different types of data available. An algorithm, called “consumption algorithm”, is used.

The data between logbook and sales note are crossed, to identify inconsistencies between landing declaration and sales notes. VMS system is used to consolidate the “vessel fishing effort” or “spatial information”, when this information is available.

Estonia

No algorithm implemented. All the needed information, related to commercial fishing, are directly centralized in the “Commercial fishing register”.

However, no cross-checking is done on a regular basis. Only occasionally misreporting is assessed by comparing the official logbook data to the data from national control authorities.

Finland

No algorithm implemented. The different types of fishing data available are merged via database key identifiers.

Different data can be merged via database key identifiers, e.g. vessel ID, fishing diary ID, form ID, sales ID and the like.

France

The different type of declarative data sources (*European logbooks, national monthly declarative fishing forms, sales note data and geolocation data*) are linked vessel by vessel following an algorithm based firstly on dates (*fishing trip return date, fishing sequence date, landings data, sales date, ...*) and consolidated considering species composition and landings weight associated.

All these different data sources are cross-validated/combined in order to provide the best possible fishing statistic data.

SACROIS algorithms run by Ifremer allow to combine the different declarative data sources based firstly on dates and vessels. The possibility to sell the landings of a fishing trip during several sales' operation is considered also the contrary i.e. the possibility to sell during a day the landings of several fishing trips. Species composition and landings weight associated are considered to assess/strengthen the links especially between fishermen declarative and sales notes data.

Ireland

No cross-validation performed, only one data source (<10m sales notes & >=10m logbooks) considered by vessel-length ranges.

For each vessel length category, we use only one data source: for <10m sales notes and for >=10m logbooks.

Lithuania

Automatic crosscheck algorithm put in place to join the different type of data (*landings declaration and sales notes*). No detail of the algorithm implemented.

National Fisheries Data Information system (FDIS) automatically crosscheck landing declarations (before 1 January 2019 data from declarative form as well) with the sale notes species volume. The obtained discrepancy causes are investigating and looking for issue solving.

In Lithuania data base the cross-validate is established for cross checks between the sales notes and logbooks volume of species. Obtained discrepancy causes are investigating and looking for the issue solving. The main focuses of the cross-validation are on fixing the primary data.

Latvia

No formal cross-validation tool implemented. E-logbooks (>=10m) and coastal monthly logbooks (<10m) are the main data sources considered. Sales notes data used to adjust average price. VMS data used to compare with registered coordinates. Comparison catches and landings declaration in E-logbooks

E-logbooks and coastal monthly logbooks are registered in Latvian Fisheries Integrated Control and Information System (LFICIS) which is synchronised with Latvian Fleet register. In the system many of cross-checks are implemented, like: comparison of registered coordinates with VMS data, difference in caught and landed amount by species and other. Sales notes are used to adjust the average price provided by CSB if it's necessary.

The Netherlands

Logbooks and sales notes data are matched (*for quality checks only*) following an algorithm considering first vessel ID, dates and harbour. Species composition, total weight and weight by species is also examined to consolidate the linkage. Logbooks and VMS data are linked using the vessel identifier and date-time stamp.

Logbooks and sales notes data: the two data sources are matched by vessel ID, date and harbour and if the conditions are met a trip number from the logbooks is assigned. To ensure the right trip number is assigned to each sales note the species composition, the total weight, and the weight by species is examined. When the conditions (quality thresholds) are not met, the sale note does get assigned a trip number automatically and a manual examination of the



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data takes place. These quality checks are in place for internal use and the sales notes are not used for any data provision.

Logbooks and VMS: the methodology for cross checking the logbooks and VMS data is described in <https://edepot.wur.nl/248628> (Appendix B). Link VMS and logbook data • VMS and logbook datasets are linked using the vessel identifier and date-time stamp. In other words, records in the VMS dataset that fall within the departure-arrival timeframe of a trip described in the logbook are assigned the trip number from the logbook record.

Poland

Logbooks (coastal logbooks, paper logbooks and electronic logbooks) are the main data sources considered. No formal cross-validation with sales notes or complementary data (VMS data, national reference lists, vessels' patterns and fishing licences). All these data sources are used primarily to validate logbooks data.

Data from vessels under 12m are validated with national reference lists, vessels' patterns and fishing licences. Data from vessels $\geq 12m$ are validated with VMS data and national reference lists.

Sweden

All the different declarative data available (logbooks, monthly coastal journals, landings declaration, sales notes and VMS information) are combined with a unique identifier (trip id) and vessel information.

All of the documents above and VMS information is combined with a unique identifier (trip id).

These datasets all contain vessel information and trip identifier that SLU uses to combine them.

On some occasions information in landing declarations is merged in using trip identifiers supplied by SwAM in the data.



Appendix III – The algorithms/methods used to estimate/assess the value of landings (esp. for landings not sold at auctions) (summary and extract by country).

Germany

No Algorithm. Value of landings directly issued from the landing declaration.

All landings are presented in the landing declaration.

Denmark

No algorithm. Value of landings directly issued from the sales notes (landing declaration for BMS landings).

All sales are recorded in the sales notes register. For BMS information received from landing declaration.

Spain

No algorithm. Value of landings directly issued from the sales notes.

Sales notes are the only available source of value data, so no data cross-validation/combination is needed.

Estonia

No algorithm. No value provided?

Not done.

Finland

Average based approach (*average prices calculated*) used to estimate the value of quota species. Estimated by sample for non-quota species.

Notwithstanding the value of a particular landing could be calculated in some cases directly via merging SN (sales notes) and the source data (LB (logbook) and CLBQ (coastal logbook of quota species)), we utilize an average based approach. ... We use this approach because the coverage of the SN data is not (at least not yet) good enough for merging each landing with its corresponding first-sale event.

Therefore, value of landings in CLB (coastal for non-quota species) (also for some quota species) must be estimated by leveraging external data sources, i.e. purchase information obtained from a sample of 20-30 enterprises collected by the Natural Resource Institute of Finland (Luke).

France

Value of landings are estimated through a specific algorithm based on sales note data. For trip associated, value is directly deducted from sales notes and for other value is estimated through an average price or an estimated price based on expert knowledge for species with no sales available.

SACROIS algorithms include a specific algorithm to estimate the value of landings by species based on existing sales note data (sometimes directly deducted from them) or on an average price' estimation. For some fleet segment, estimated price based on expert knowledges is also used.

*... For the other landings (non-auction market sales), an average price by commercial species is assessed from sales note data by “day*landing harbour*fleet segment” considering eventual dynamic hierarchical aggregation: “day->month->quarter->year” or “landing harbour-> maritime district -> region -> seaboard”. When no sales for a specie*

during a year on a seaboard raised then estimated price based on expert knowledges are considered. For abroad landings, vessel maritime district registration could be considered in replacement of landings harbour.

Ireland

Estimated value for each logbook declaration based on an average price (€/kg) calculated by species and other parameters.

The procedure for calculating these average values is hard-coded into the system and is not considered very accurate. This system of allocating values is currently being improved by the national control agency (SFPA) to better account for outliers and variability.

Lithuania

Value of landings based on the sale notes data.

There is a link between fishing trip or declarative form and specific sales note. The discrepancies of value are showing in separate report and forward for fixing issue.

Latvia

Value of landings based on an average price calculated by Central Statistical Bureau (based on the compulsory questionnaire “I-Fishery”) and eventually adjust with sales notes. Also the value provided by first purchases is used.

Landings in value – average price, calculated by Central Statistical Bureau, based on the questionnaire “I-Fishery”, which is compulsory for all enterprises.

Sales notes are used to adjust the average price provided by CSB if it’s necessary.

In LFCIS system the Report of First Purchases is available where is possible to trace the sold fish up to the logbook.

The Netherlands

Value of landings based on the sale notes data.

Vessels are only allowed to sell to registered buyers at registered auctions.

Poland

Value of landings based on average price per species calculated from sales notes data. For economic data call, average price calculated consider: year and month, port of landing, species and vessel length group (>12m and >=12m).

Value of landings for economic data call is estimated based on averages, calculated taking into account:

- Year and month
- Port of landing
- Species
- Length group (<12m and >=12m)

Value of landings for RDB/RDBES and FDI data calls is estimated based on annual average price per species.

Data on fish prices comes from sales notes.

Sweden



Value of landings are 1) issued from sales notes directly when they could be assigned to the fishing trip considered or 2) estimated on the basis of a monthly average price per species calculated from sales notes data via an algorithm or directly provided by SwAM (price matrix calculation using spatial, temporal and vessel information).

Value by trip (for logbook data) are extracted from matching sales notes using trip identifiers supplied by SwAM. For trips (logbooks data) and coastal journals without matching sales notes, values are assigned based on monthly averages supplied by SwAM or aggregated directly from sales note data.

Sales directly to consumers from the fishermen is not required to report, for landings without sales notes SwAM calculates the value using a price matrix. The price matrix estimates average prices using spatial, temporal and auxiliary information regarding the vessel.

*When sales records do not exist for certain trips, the value is estimated based on an algorithm. ... Values (by usage/treatment/size class for some species) from matching trips or matching vessel-months from unique subdivisions and gear types are aggregated and used to assign values to fishing events in hierarchical order; by vessel * month, by month * region * fleet, by quarter * region * fleet, by year * region * fleet and finally by year. For some species, typically those for which mainly roe is landed or wrasses sold live, fixed mean values are supplied by SwAM.*



4 ISSG Electronic Monitoring Technologies

4.1 Background

The ISSG EMT (Electronic Monitoring Technologies) was created in 2021. The ISSG was formed in response to the rapid growth of electronic monitoring technologies (EMT) in recent years in the field of fisheries monitoring. The goal of this ISSG is to cast a light on the initiatives taking place in nearly all EU MS in relation to EMT, highlight the most promising technologies, gather knowledge, and share it with MS and, where possible, promote new collaborations between MS. These EMT include e.g. video acquisition systems coupled with position trackers and gear sensors (EM – Electronic Monitoring) that can monitor the entire fishing activity of vessels over extended periods (to collect data on fishing activity data and biological data on catches), electronic measuring boards (to collect biological data) used by scientific observers, mobile phone apps that facilitate reporting of catches by fishers, as well as genetics tools – such as environmental DNA (eDNA) to monitor species presence and abundance, and other genetics tools to define stocks, assign individuals to stock in mixed stock situations, detect hybrids, and estimate spawning stock biomass. In addition, a lot of work is ongoing in different MS to automatise the identification of catches from annotated video/images using machine learning algorithms (i.e. computer vision). Such models require a large amount of training data to reach acceptable levels of accuracy and the cost to produce such massive training datasets may be prohibitive for individual MS. This ISSG could constitute the appropriate platform to promote a future development of a shared database of annotated data between participating MS that respects intellectual property rights, and which would allow the rapid development of ML models tailored to the monitoring of fisheries.

The ISSG EMT is chaired by Gildas Glemarec (since 2022) and Pieter-Jan De Temmerman (since 2024).

4.2 Work-plan

The Terms of Reference for the year 2023-2024 were defined as:

1. Continue the inventory of data collection technologies used in different member states, e.g. electronic monitoring (EM), Machine Learning development, and electronic measuring boards.
2. Start the discussion on elaborating a methodology to collect and annotate pictures and/or video footage of catches (fish, shellfish, and other organisms) onboard research vessels that may be used to develop machine learning algorithms for species identification/classification. Such a methodology would need to be developed in collaboration with the MS institutions implementing research surveys and ICES WG coordinating those surveys (when applicable).
3. Discuss and examine the possibilities that these annotated data are shared between Member States without breaching privacy and ownership concerns.
4. Initiate coordination with groups working on related topics, such as ICES WGTIFD, WGCATCH, potentially WGMLEARN, WGRFS; RCGs NANSEA and Baltic ISSGs (SSF, PETS, and MRF); and RCG Large Pelagics (subgroup dedicated to this topic). Namely, as a starting point, set up a joint meeting at in 2023-2024 where responsibilities from each group would be mapped and discussed.
5. Consider how genetic tools can be useful in the context of DCF. This task is also assigned (with a more specific focus) to other RCG ISSGs: ISSG Surveys (e.g. focus on eDNA for species composition and abundance, several techniques for population size, population structure, hybrids, ageing); ISSG Stomach sampling - eDNA for prey species composition and abundance).
6. Cooperate pan regionally where relevant.

4.3 Progress during 2023/2024

Compared to the previous session in 2022/2023, few things have progressed in this ISSG, owing to a very late general meeting of the subgroup in April 2024. Nevertheless, contacts with other ISSGs and ICES Working Groups were established intersessionally to start a more active coordination between the groups and be better at delimitating the prerogatives of each ISSG/WG (see Task 4 below).

The work initiated by the ISSG EMT in 2022/2023 on gathering information from the participating MS and addressing point 1 (and partially point 2) of the ToR did not progress significantly (Table 4.1 and **Error! Reference source not found.** from the previous report are reproduced here and updated where needed). The ISSG EMT members met online once in April 2024 to discuss the current state of progress of the ToR and the future directions this ISSG should take.

4.3.1 Task 1 of the ToR: EMT inventory

The EMT inventory originally presented in the previous report of the ISSG EMT was updated with the few additional monitoring programmes using electronic technologies having taken place in the participating MS in the past year (Table 4.1).

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Table 4.1: Inventory of EMT usage for data fisheries collection from the responding Member States (same table than in the EMT report 2023)

MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
FI	27.3	EM Video System	Pilot study within the scope of DCF	Bycatch monitoring onboard	2023	ongoing	To be decided						Pilot study started, details to be decided in 2024
FI	27.3 ~ Finish inland waters	Mobile device App	Citizen-science monitoring programme	OmaKala: "Electronic logbook" for recreational anglers	2022	ongoing		~4000 people contributing with data		~6000 reported trips with catches	L3LH	LHM	https://omakala.fi/
FI	27.3	Electronic measuring board	DCF	Fish sampling: e.g. herring and sprat measurements	2010	ongoing	All	NA	NA	NA	L3GN, L3PT, L3FIX	FYK ~ GNS ~ OTB ~ PTB ~ PTM	Rufco measuring boards in fish sampling at ports and on a research vessel.
FI	Rivers (flowing into 27.3 & 27.1.b)	Multibeam sonar (with UW cameras)	DCF	Monitoring of migratory fish species (Atlantic salmon, European eel) in rivers	2009	ongoing	NA	Currently 4 river locations	NA	NA	NA	NA	Stationary in-river multibeam (Soundmetrics ARIS and DIDSON) sonar + in some locations, underwater cameras for species identification. Monitoring in four rivers and approximately from May to October each year; exact days depending on the location
FI	27.3	Sonar surveys	DCF	Baltic International Acoustic Survey (BIAS): herring and sprat survey	2007	ongoing	VL40XX (survey vessel)	1 (survey vessel)	~14 annually	1 annually	L3PT ~L3TB (survey vessel)	OTM ~ OTB (survey vessel)	Annual surveys on the Baltic Sea.
DK	27.3 ~ 27.4.a ~ 27.4.b	EM Video System	Pilot study	PETS bycatch monitoring	2010	2020	VL0608 ~ VL1518	17			L3GN	GNS ~ GTR	https://www.aqua.dtu.dk/-/media/institutter/aqua/publikationer/rapporter-352-400/389-2021-bycatch-of-marine-mammals-and-seabirds.pdf

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
DK	27.3 ~ 27.4.a ~ 27.4.b	EM Video System	DCF	PETS bycatch monitoring	2021	ongoing	VL0608 ~ VL1518	9			L3GN	GNS ~ GTR	https://dcf-denmark.dk/
DK	27.3 ~ 27.4.a	EM Sensor System	Compliance	Compliance of bivalves dredging in Denmark	2012	ongoing	All	<50			L3DR	DRB	https://doi.org/10.1016/j.marpol.2020.104357
DK	27.3 ~ 27.4	DNA sampling	Pilot study	Quantitative bycatch estimation in herring in the North Sea and sprat fishery in the Baltic Sea	2020	ongoing	VL40XX	5			L3PT ~ L3TB	OTM ~ OTB	Method is still in development Industrial pelagic fishery: 4 vessels, consumption fishery: 1 vessel https://doi.org/10.1002/edn3.377 https://doi.org/10.1093/icesjms/fsad027
DK	27.3 ~ 27.4.a	Mobile device App	Citizen-science monitoring programme	Fangstjournalen: "Electronic logbook" for recreational anglers	2016	ongoing		~3600 people contributing with data		~53000 since 2016	L3LH	LHP	Volunteering participants; Recreational anglers; Mostly freshwater; >15000 registered users https://fangstjournalen.dtu.dk/ https://orbit.dtu.dk/files/266144532/Casper_Gundelund_Irgensen_thesis.pdf Additional papers that might be relevant ICES opinion paper about the current and future use of angler apps in fisheries management 10.1093/icesjms/fsaa243

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4. ISSG Electronic Monitoring Technologies

MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
													<p>Angler citizen science: evaluation of method https://orbit.dtu.dk/en/publications/evaluation-of-a-citizen-science-platform-for-collecting-fisheries https://orbit.dtu.dk/en/publications/insights-into-the-users-of-a-citizen-science-platform-for-collect</p> <p>Angler citizen science: Covid, Catch and release, Angler behaviour and satisfaction https://orbit.dtu.dk/en/publications/catch-and-release-angling-for-sea-trout-explored-by-citizen-scien https://orbit.dtu.dk/en/publications/investigating-angler-satisfaction-the-relevance-of-catch-motives- https://orbit.dtu.dk/en/publications/changes-in-angler-demography-and-angling-patterns-during-the-covi</p>

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4. ISSG Electronic Monitoring Technologies

MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
DK	27.3 ~ 27.4.a	EM Sensor System	Pilot study + DCF	Monitoring of the fishing activity of SSF vessels for mapping the areas of potential conflict between Danish coastal SSF and any other marine industrial activities	2020	ongoing	VL0006 ~ VL1012	13		>2500	L3GN ~	GNS ~ GTR ~ SDN ~ OTB	Volunteering participants Some vessel owners dropped at the end of the initial project so there are only 9 vessels left in 2024. Report of the project (KORTFISK) is still unpublished as of May 2024.
DE	27.3.c.2 2 ~ 27.3.d.2 4	Mobile device App	Compliance	Monitor German commercial fishing vessels during the Western Baltic cod spawning closure from 01.02.-31.03.2018	2018	2018	VL0006 ~ VL1012	107	not applicable	1600	L3GN ~ L3TB	GNS ~ GTR ~ OTB	Meyer et al. 2022, https://doi.org/10.1016/j.ocecoaman.2022.106186 Ongoing experience within the scope of several smaller pilot studies in Germany using the Mofi app
DE	27.4	eDNA sampling	EU Tender project (FishGenome)	FishGenome: Quantification of cod biomass	2019	2021	research vessel	1		1	L3TB	OTB	The FishGenome project report will be available during the 2nd half of 2023 https://www.thuenen.de/en/cross-institutional-projects/fishgenome-fish-stock-surveys-using-genetic-methods
DE	all	Electronic measuring board	DCF	openSMB (open Scientific Measurement Board) for data sampling onboard	2017	ongoing	all	all	all	all	all	all	http://opensmb.net/

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4. ISSG Electronic Monitoring Technologies

MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
				commercial and research vessels									
BE	27.4 27.7 27.8	Electronic measuring board	DCF	Data sampling onboard commercial and research vessels	2014	ongoing	all	all	all	all	all	all	In house developed measuring board – directly linked with toughbook / database/ quality control & vessel report.
BE	27.4 27.7 27.8	EM Video System	VISIM pilot study and DCF	Bycatch and Catch Monitoring	2020	ongoing	VL2440	Pilot study	NA	NA	NA	TBB	
BE	27.4 27.7 27.8	EM Sensor System	Vistools	Monitoring fishing activity	2018	ongoing	VL2440	35				TBB	Fishing industry - ILVO Vlaanderen Vissersvaartuig als dataplatform: het VISTools project - ILVO Vlaanderen
BE	27.4.a	Mobile device App	Citizen-science monitoring programme	App and website for electronic logbook for recreational anglers	2018	ongoing	NA	NA				angling	See Mijn vangsten - Recreatieve Zeevisserij
BE	27.4	eDNA sampling	Pilot study	EMFF projects soleDNA and POPeDNA	2019	2021	research vessel & commercial vessels	NA		NA	NA	TBB	SoleDNA: Characterising a data poor sole stock using DNA and eDNA — ILVO

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
NL	27.4b ~ 27.4c	EM video system + AI catch monitoring device for discard registration	Pilot study	Discard registration	2019	ongoing	VL2440	8	>200 DAS per vessel per year	> 30 trips per vessel per year		TBB, OTB, SSC	
NL	27.4c	Camera registration system	Pilot study	Catch registration	2024	ongoing	VL0012	5		>30		FIX (traps)	Develop automated catch registration system for length and sex data on the Dutch lobster fishery
IE	27.6.a ~ 27.7.a ~ 27.7.b ~ 27.7.j ~ 27.7.g	iVMS (Inshore Vessel Monitoring System)	Compliance	Compliance of bivalves dredging in Ireland	2014	ongoing	VL0012	100+			L3DR	DRB	https://inshoreforums.ie/wp-content/uploads/2021/01/Inshore-VMS-Pilot-Project_Marine-Institute.pdf
IE	27.6.a ~ 27.7.a ~ 27.7.b ~ 27.7.j ~ 27.7.g	Mobile device App	Citizen-science monitoring programme	IMREC Diary: "Electronic Logbook" for recreational anglers	2021	ongoing					L3LH	LX	https://www.fisheriesireland.ie/what-we-do/research/marine-recreational-fishery-in-ireland-mrec To use the App the angler must fill in this form via the website https://www.fisheriesireland.ie/imrec-diary-sign-up?referral=182
IE	27.6 ~ 27.7	EM Video System	Pilot Study	Bycatch and Catch Monitoring	2023		VL1218 ~ VL1824 ~ VL2440				L3PT	OTM ~ OTB	https://www.sfpa.ie/Who-We-Are/News/Details/sea-fisheries-protection-authority-seek-participants-for-pilot-remote-electronic-monitoring-project

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
ES	FAO area 51 and 57 ~ FAO areas 47 and 34	EM Video System	Voluntary fleet-driven program	Verification of the correct bycatch handling and FAD (Fishing Aggregating Device) design.	2017	ongoing	VL40XX	~22			L3PS	PS	Documents that might be relevant: https://iotc.org/documents/WGEMS/01/04
ES	FAO area 27	EM Video System	Voluntary fleet-driven program	PETS bycatch monitoring	2021	ongoing	VL2440	6			L3LH	LHP ~ LTL	Documents that might be relevant: https://iotc.org/documents/WGEMS/01/04
ES	FAO areas 47 and 34 ~ FAO area 77 and 87	EM Video System	Voluntary fleet-driven program	DCF and RFMO data requirements	2018	ongoing	VL2440	14			L3LL	LLD	Documents that might be relevant: https://iotc.org/documents/WGEMS/01/04
ES	27.8bc	EM Video System	Voluntary fleet-driven program	Pingers effectiveness testing and monitoring for PETS bycatch reduction	2021	ongoing	VL2440	4 (2 pairs)	>600 days		L3TB	PTB	EU additional request on mitigation measures to reduce bycatches of common dolphin (<i>Delphinus delphis</i>) in the Bay of Biscay and Iberian Coast https://ices-library.figshare.com/articles/report/EU_additional_request_on_mitigation_measures_to_reduce_bycatches_of_common_dolphin_Delphinus_delphis_in_the_Bay_of_Biscay_and_Iberian_Coast/21946634
ES	27.8.bc	AIS B	Voluntary fleet-driven program	Effort data	2017	ongoing	VL0815	50	100-150 per vessel/year	100-150 per vessel/year	L3GN~L3LL	GNS ~ GTR ~ LLS	These devices are used to monitor the Basque SSF. Mostly fishing with nets and longlines, although they can also use other gears.

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
ES	27.8.bc	Tablet	Voluntary fleet-driven program	Effort and catch data	2017	ongoing	VL0815	10	100-150 per vessel/year	100-150 per vessel/year	L3GN~L3LL	GNS ~ GTR ~ LLS	These devices are used to monitor the Basque SSF. Mostly fishing with nets and longlines, although they can also use other gears.
ES	27.8.bc	Mobile device App	Voluntary driven program	Recreational Catch, effort, and fishers profile data	2023	ongoing					REC	REC	This app is going to be used to collect marine recreational fisheries data. The app has been developed and the plan is to start using it in summer 2023.
ES	27.8abcd ~ 27.9a ~ 27.5b ~ 27.6 ~ 27.7	EM Video System	Voluntary fleet-driven program	PETS bycatch monitoring	2022	ongoing	VL2440 ~ VL40XX	16 (2 pairs)	727		L3TB ~ L3LL ~ L3GN	OTB ~ PTB ~ LLS ~ GNS	Report to Spanish secretariat, not accessible online.
ES	27.8	eDNA sampling	BIOMAN/JUV ENA surveys	fish diversity monitoring; anchovy/sardine / <i>Maurolicus spp.</i> biomass quantification	2017	ongoing	research vessel	2	~30				
PT	27.9.a	EM Picture System	Pilot study within the scope of DCF	Species identification and length sampling of landings at fishing ports	2019	2021							Subcontract of IPMA to company "Fishmetrics"
PT	27.9.a	EM Picture System	Pilot study within the scope of DCF	Species identification and length sampling of landings at fishing ports	2022	2023							Subcontract of IPMA to company "Fishmetrics"

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
PT	27.9.a	EM Video System + EM Sensor system + Electronic reporting	Pilot study not within the scope of DCF	Bycatch monitoring onboard	2021	2023	E	2	195		L3TB	OTB	2 vessels: 1 commercial fishing vessel operating bottom otter trawl targeting crustaceans, 1 research vessel. Project funded by EEA Grants "The development of Electronic Monitoring and Reporting (EMR) technology for fisheries in Portugal (EMREP)", with the collaboration of OLSPS International, University of Algarve, Imenco AS, IPMA. https://eeagrants.org/archive/2014-2021/projects/PT-INNOVATION-0007
PT	27.10.a	EM Picture System	DCF	Species identification and length sampling of landings at fishing ports	2022	2024							Subcontract of DRP with the company "Fishmetrics".
PT	27.10.a	Mobile device App and webpage	DCF	Recreational Catch, effort, and fishers profile data	2021	ongoing							A webpage (and mobile APP) was developed for recreational fishing catch and effort data (including fishing location). Due to few engagements a new system (Pescador) was developed and is available since 2024.
LT	27.3.d rivers	Camera based fish counter	DCF	Monitoring of Atlantic salmon and Salmo trutta in rivers	2021	ongoing	NA	NA	NA	NA	NA	NA	Stationary Riverwatcher Fish Counter in fishway at the dam. Monitoring migrating Salmon and sea trout from September to December. We are monitoring one river at the moment.

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MS	Area	EMT	Monitoring programme	Purpose of monitoring	Year start	Year end	Vessel size (m)	Vessels	DAS	Trips	Metier L3	Metier L4	Comments
LT	27.3.d	Mobile device App	DCF	Recreational catch, effort, and fishers profile data	2024	ongoing	NA	NA	NA	NA	NA	NA	App eLaimikis allows recreational fishermen to record and report their catch in the area of the Baltic Sea which belongs to the Republic of Lithuania. https://play.google.com/store/apps/details?id=ai.vilantis.elaimikis
LT	27.3.d	EM Video System	Pilot Study	To monitor fishing operations on fishing vessels.	2024	ongoing	24-40	1	All DAS from one vessel	All trips from one vessel	L3PT	OTM	The project is carried out by Fisheries Control on a voluntary vessel.
All	27	Image Analysis Software	Quality assurance platform	SmartDots: Calibration of biological parameters for improving data for stock assessments	2017	ongoing							SmartDots is a set of software tools supports the user in managing all data of ICES biological reading (like age, maturity, larvae identification) workshops and exchanges, which development is guided by the ICES working group on SmartDots Governance (WGSMART) https://www.ices.dk/data/tools/Pages/smartdots.aspx

4.3.2 Tasks 2 & 3 of the ToR: Labelled data for catch detection model training & data sharing concerns

The exploitation of labelled data for training computer vision models in the context of fisheries monitoring is a challenging task. Although the technologies for automatic detection and classification of objects from video feeds exist and can sometimes work in near real-time with a high level of accuracy, the fisheries monitoring sector has yet to come with such tool(s) to help monitor catches and discards of fish, as well as bycatches of Endangered, Threatened, and Protected (ETP) species. For the most part, the difficulty stems not so much in the existing technologies and computer-vision models as in the amount and the quality of the data available locally to train the algorithms (Li *et al.*, 2022). The diversity of species to identify, as well as the diversity of fisheries and metiers in which they are captured means that there is currently no exhaustive training dataset that can be used to train a universal identification (and/or classification) model. Moreover, labelled datasets are tailored to the needs of their data owners and no standardisation is currently warranting interoperability between these datasets. The quality of the data may also be subject to high variability as video and image data taken at sea are often facing difficult conditions such as illumination (sun glares), deformation (droplet on the lens), or occlusion (fisher in the field of view) that reduces the proportion of objects that can effectively be labelled.

In the past years, several initiatives led by European research institutes have proposed to take on the challenge to collect and standardise labelled (image & video) data for model training purpose. These initiatives have usually faced the reluctance of data owners to share their data, due to privacy concerns (vessel or crew members visible on the footage), and concern that other than themselves (i.e. the ones who did the hard work of labelling), would bear the fruits of their own work by publishing potentially highly citable papers (in the case of other fellow scientists) or by making a profit out of the commercial exploitation of the labelled data (in the case of EM companies). The former could be mitigated by involving all existing labelled data owners that have an interest in such computer vision models to collaborate to a common research article or series of articles, based on a common, shared, and standardised dataset. Regarding the latter point on the commercial exploitation of these labelled data, it is not possible in the EU to commercialise data that have been produced through publicly funded research. Such data are regulated by the Open Data Directive (Directive 2019/1024) and the FAIR Principles (Findable, Accessible, Interoperable and Reusable data). This means that one cannot charge others for the use of one's data whether the intended use is commercial or non-commercial. Thus, all published research data must be available and reusable for others who wishes to use these data.

The ISSG EMT discussed the points above and the interest for the group to collate information on the existing datasets of labelled images for computer vision model training available regionally. This could constitute a first step toward future collaborations between data owners either through this ISSG or through the initiatives and research projects ongoing on the subject in Europe (see Section on tasks 4 and 6 of the ISSG EMT ToR).

4.3.3 Task 4 of the ToR: Coordination with working groups related to ISSG EMT

The ISSG EMT work is linked to various other ICES working groups (WG) and RCG intersessional subgroups (ISSG), either through direct communication between the groups' chairs, or because some EMT members participate to these WG and ISSG. Here, we listed the main contributions of these groups that are relevant to the ISSG EMT.

WGTIFD (Working Group on Technology Integration for Fishery-Dependent Data)

Several tasks taken upon by WGTIFD relate to EMT. WGTIFD has notably created and maintains a glossary of electronic technologies, collates information on past and current ET usage for monitoring and compliance throughout the North Atlantic, works on setting standards for EM data integration into ICES databases (RDBES), and develops recommendations for ensuring interoperability of raw EM data.

WGCATCH (Working Group on Commercial Catches)

One of the tasks of WGCATCH is the listing of data collection practices, including those using EMT. WGCATCH also works on improving current data collection by sharing knowledge and best practices between participating member states.

ISSG PETS (Intersessional Subgroups on Protected, Endangered, and Threatened Species)

The ISSG PETS met shortly before the ISSG EMT meeting in April 2024 and the expected changes in terms of PET species bycatch monitoring from the new EU Control Regulation (EU 2023) were discussed. Some of them are related to the fishing effort information that could be improved thanks to the mandatory installation of geospatial high-resolution data devices. Moreover, the mandatory usage of EM onboard vessels in bycatch high-risk fisheries was also discussed, as this would provide valuable information to monitor and eventually understand the level of PET species bycatch in these fisheries. The schedules implementation phases mentioned in the new Control Regulation was also discussed.

Other

Although arguably important in the development of EMT, the Large Pelagics ISSG was not contacted during the 2023/2024.

In relation to the new EU Control Regulation, a large amount of geospatial data will be available in the next years from the (upcoming) mandatory usage of geotrackers onboard all fishing vessels. These data can be used to model fishing activities and several recent peer-reviewed publications demonstrate the feasibility of these methods to detect the fishing effort of passive gears in small-scale fisheries (SSF). The ISSG EMT could follow up on this development in connection with the ISSG SSF and other ICES WG interested in these questions.

Also, the new EU Control Regulation imposed on member states from January 9th of 2024 the use of apps to collect recreational fishing data. The MS can use certificated apps as Fishfriender or use an app developed by the MS that will be integrated in the RecFishing Platform an integrated catch reporting system (<https://recreational-fishing.ec.europa.eu/apps>). The ISSG EMT could follow up on this development in connection with the ISSG recreational and the ICES WGRFS interested in these questions.

4.3.4 Task 5 of the ToR: Genetic tools

No significant progress was made on the front of genetic tools usefulness in the context of DCF during the past year. The interest of keeping genetic tools in the ISSG EMT was discussed, as the members of this group usually only have limited expertise on these. No conclusion was reached, and the ISSG EMT proposes to leave this open to the RCG meeting in June.

4.3.5 Task 6 of the ToR: Regional coordination and cooperation

Other than ICES and RCG working groups, several large projects are ongoing in Europe, which use and/or develop methods or electronic technologies that can be pertinent for data collection within the DCF. The ISSG EMT has interest following up on the work these projects are carrying and to report on the most promising outcomes. This section lists some of the most noteworthy projects.

OptiFish: Optimisation of digital catch monitoring and reporting in European Fisheries

Jade Maes was invited by the ISSG EMT chairs to present Optifish, a new project co-funded by Horizon Europe, as this initiative strives to provide technological solutions that will simultaneously improve the sustainability of fisher's operations, enhance control processes, and strengthen society's trust in their products. OptiFish will develop, test, and recommend a set of innovative technologies and tools supported by artificial intelligence (AI) to provide the management, the fishing sector, and the scientist with data on catch volumes, catch compositions and the fishing environment. The goal is to unlock the full potential of technologies such as electronic and genetic monitoring for automated species recognition based on AI and computer vision to reduce discards, unreported landings, and unreported fishing activities, ultimately establishing a fisheries control and enforcement system fit for the digital age. The technologies are not enough alone, it is also critical to consider the combination of technologies and the integration of computer vision models, the wide range of data sources and their subsequent formats, while also addressing stakeholders needs and acceptance. This goal cannot be achieved by a single project, which is why the aim of OptiFish is to lay a solid foundation for full technological development from which other projects and initiatives can be built. The project will place a strong focus on species recognition in different fisheries equipped with distinctly different catch handling facilities and in different European sea basins. To ensure that these innovations are relevant to fisheries management, OptiFish has participation from the Norwegian Directorate of Fisheries, and has received written support from the European Fisheries Control Agency (EFCA), the Basque, Danish and Belgian Fisheries authorities.

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The work packages within OptiFish, including the planned activities and expected outputs were presented to the EMT ISSG during the online meeting in April 2024. OptiFish will work on methodological, and were possible software, and hardware development aiming *inter alia* to improve catch reporting technologies and catch monitoring capabilities to prevent catch tampering. The project will be supported by pilot studies in key fisheries in the NANSEA areas and in the Mediterranean Sea, which will test various "catch handling facilities" (CHF), corresponding to technologies to improve certain aspects of the monitoring of the fishing processes directly onboard fishing vessels (Figure 4.1).

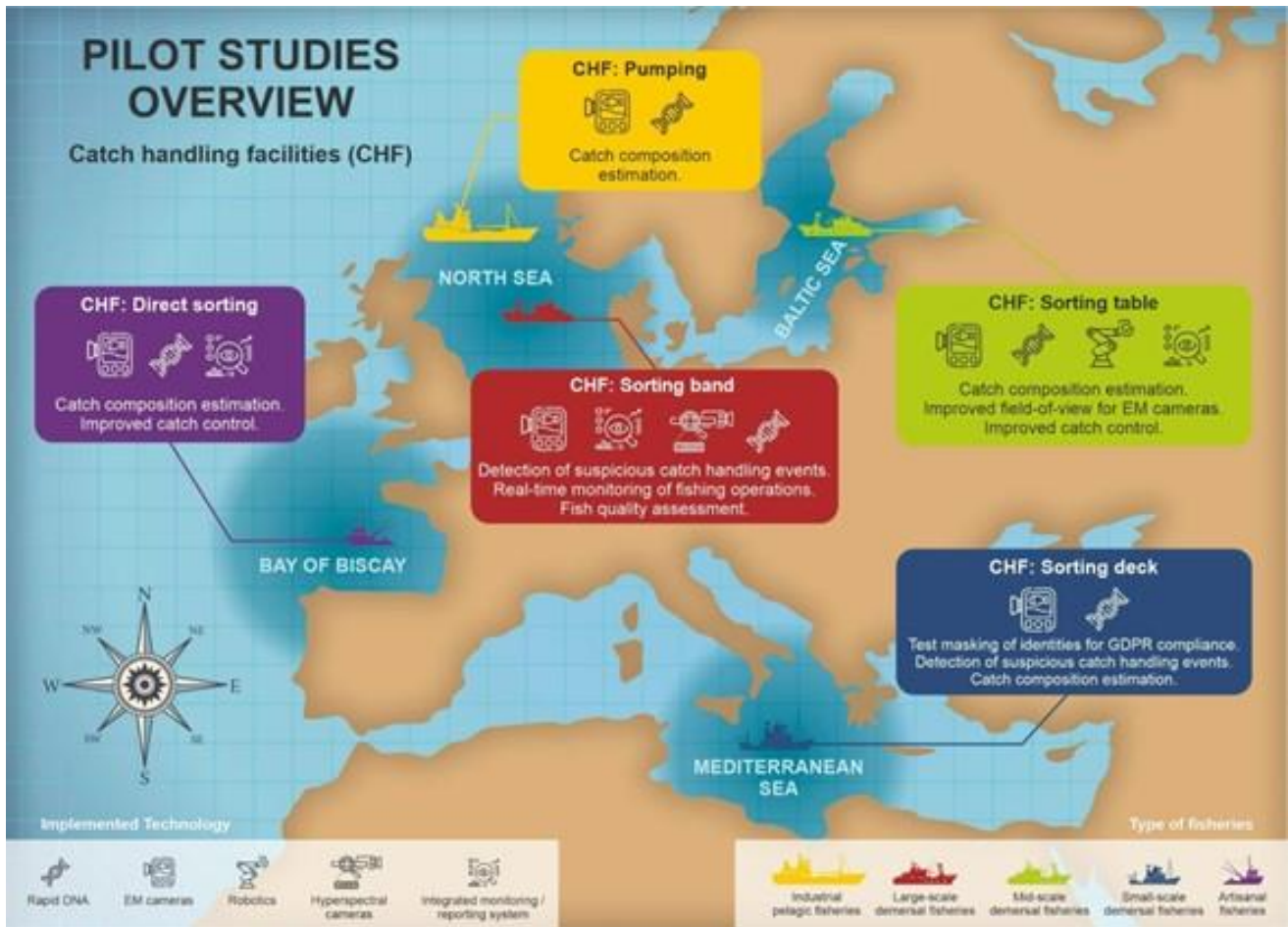


Figure 4.1. Pilot study locations and planned CHF (Catch Handling Facilities) trials in the OptiFish project.

Of high relevance to the ISSG EMT is also the work planned in relation to data management and system architectures. Among others, OptiFish plans to develop decision support systems for fishing operation optimisation, including real-time geospatial information on catches and discards, gross revenue and fuel consumption cost analysis, and quotas consumption overview.

Other ongoing initiatives relevant to the ISSG EMT

At least two other large pan-European projects are of great interest in terms of electronic technologies for monitoring purposes. **EveryFish** (<https://everyfish.eu/>) is a European Union’s Horizon Europe research and innovation programme which aims at using existing and developing new technologies to achieve fully documented fisheries by 2030. The accent is put on control and compliance, but the technological developments in the EveryFish project – which include camera technologies, machine learning and big data analysis, or computer vision algorithms – are (will be) widely applicable to data collection programmes within the DCF. **CIBBRiNA** (Coordinated Development and Implementation of Best Practice in Bycatch Reduction in the North Atlantic, Baltic and Mediterranean Regions) is a European Union’s LIFE-funded programme which looks at the problem of ETP bycatch in Europe through an ambitious cross-disciplinary project. Part of the project focusses on implementing standardised bycatch data collection with the support of EMT where possible.

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In addition, it is noteworthy that the ICES Annual Science Conference (ASC) in September 2024 will have at least two theme sessions that are of significance to the ISSG EMT: theme session J “Moving the latest developments from machine learning and AI closer to exploiting mountains and lakes of data” and theme session H “How can camera-based electronic monitoring improve bycatch management?”. Both sessions are likely to spark the interest of scientist and actors of the fishing industry working with EMT.

4.4 Roadmap/follow-up

The EMT ISSG discussed the needs for future work. These are:

1. to create and maintain an inventory of the labelled data owned by the MS that could be used now or in the future for training identification/classification models.
2. to continue to fill out an inventory of the EMT in usage in the different MS.
3. to continue exploring the possibilities aiming at building a shared annotated image and video dataset to train ML identification/classification models.
4. to strengthen the links between the ISSG EMT the various ICES working groups and ISSGs working on/with EMT, and to follow up and report on the progress made in the large EU-funded projects working on computer vision development and other EMT at regional scale.

Just as it was last year, keeping the work on genetic tools within the ISSG EMT remains potentially problematic, as the ISSG EMT lacks the expertise in this domain. During the session 2023-2024, no significant progress was made on the question of how genetic tools can be useful in the context of DCF. Acknowledging the likely importance of these tools for monitoring, the ISSG EMT reiterates that this topic requires more attention, but that it is likely not well suited for this subgroup, unless more genetic tool specialists can join the ISSG EMT and take over this task. We propose to discuss in plenary in June 2024 the options.

Moreover, the group noted that there is still some MS with no representative in the ISSG EMT. Considering the important development of EMT in at least some of these MS, it is important to remedy this to in the coming year.

Based on the above, the next steps in intersessional work for the ISSG EMT in the year 2023/2024 are to:

1. Start the inventory of labelled data owned by the MS that could be used now or in the future for training identification/classification models.
2. Continue the discussion and examination of the possibilities that these labelled data are shared between MS without breaching privacy and ownership concerns.
3. Continue the inventory of data collection technologies used in different member states: e.g., electronic monitoring (EM), Machine Learning development, electronic measuring boards.
4. Continue the discussion on the elaboration of a methodology to collect and annotate pictures and/or video footage of catches (fish, shellfish, and other organisms) onboard research vessels that may be used for the development of machine learning algorithms for species identification/classification.

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4.5 SG Participants

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References

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5 ISSG Surveys

5.1 Background

The RCG NANSEA & Baltic 2020 specified the scope of the RCGs regarding surveys as follows: “Given the expectation that survey designs, planning and task-sharing might change in the foreseeable future, RCGs are expected to play a more substantial role in the decision-making process when it comes to budget and/or national implications. The scope of the RCG will continue to focus on the budgetary aspects and national obligations in relation to proposed changes to a survey. It may be needed to rubberstamp and approve the current survey effort by MS to act as a baseline to measure and evaluate future modifications against. RCG mandates are described in the respective RoPs and these cover survey subjects as well.”

Following this scope, the ISSG on surveys underpins the substantial role of the RCGs regarding DCF surveys in the future.

Current chairs of the ISSG on Surveys are Sieto Verver (NLD) and Christoph Stransky (DEU).

5.2 Work-plan

ToRs and work plan (specific tasks) for 2023/2024:

1. Renew the multilateral agreements on cost-sharing of the International Ecosystem Survey in the Nordic Seas (IESNS=ASH) and International Blue Whiting Survey (IBWSS).
2. Identify candidate surveys for future cost-sharing based on the Gothenburg 2022 meeting and subsequent updates.
3. Monitor and discuss implications of the influence of external factors on surveys from a DCF perspective and react when appropriate and requested.
4. Monitor the regionalisation process within ICES (e.g. ICES NETSEA) and act as the focal point for RCG contact.
5. Review proposed substantial changes to the design, set-up or other aspects of the survey impacting MS's Work Plan, effort and/or budget allocation, or obligations. Consider requirements to facilitate future review processes.
6. Review emerging techniques, potentially improving or expanding data collection during surveys. In particular, the FishGenome project's (roadmap) outcomes will be considered.
7. Respond to requests and recommendations addressed to RCGs relevant for this ISSG (e.g. from ICES EGs on IBWSS effort reduction, expanding participation in Downs Recruitment Survey, a continuation of ECOCADIZ survey).
8. Compile some concrete examples where issues with scientific surveys in spatially restricted zones have been encountered but also if and how they have been resolved.

5.3 Progress during 2023/2024

The ISSG on Surveys met from February 28th to March 1st 2024 in Lyngby, Denmark.

ToR I:

The multilateral agreements for the IESNS and IBWSS in 2025 were updated and forwarded to the relevant NCs for further consideration. The final decision needs to be taken at the September decision meeting.



ToR 2:

Follow-up on proposals for options to cost-share surveys based on the ISSG work 2023-2024

During the ISSG survey workshop, regional areas (Baltic, North Sea & Eastern Arctic, and the North Atlantic) updated earlier survey contribution overviews to highlight the different Member States' (MS) contributions to the mandatory surveys compared with the MS TAC share or landings within the survey area.

To provide the update, Table I in the EU-MAP (COM Dec. 2021/1168) was used. Table I includes only surveys where the indices have been used in the stock assessment for a given species. For each survey in the table, a column with the target species for that particular survey is included.

A table was hereafter produced where the target species by survey were listed, and each MS quota share or, if a quota was not available for that species, the average landings (2020-2021) from Table 2.1 in the regional work plan was used. If a given MS had a quota/ landing above 3% for one of the targeted fish species mentioned in Table I (Dec. 2021/1168), the MS was marked with green, independent of the level above 3% or if it was one or many species where the MS had landings/quotas. If the same MS did not contribute to the survey covering the species and the same area, the MS was coloured shaded red.

This was not to state that the MS should participate in the survey, but it could be discussed by the NC. If a given MS is participating in other relevant surveys covering the same stock or if the survey is only covering a minor area of the total distribution area for the stock, this could be a relevant reason for not participating for a MS. It could also be that a given MS is participating cost sharing, either by direct financing or by staff members on the survey, this is indicated by a green shading in the table.

If a given MS did not have any relevant landings/quota for a targeted species within the survey area, it is coloured grey.

As a follow-up, the tables and related information will be forwarded to the relevant NCs through the NC ISSG. The NC's will be requested to identify candidate surveys for cost-sharing or to agree not to cost-share certain surveys and document these decisions. The survey ISSG may help out further detailing of cost-sharing arrangements if needed.

Updates to EU-MAP

While conducting the exercise described above, several inconsistencies were discovered in EU-MAP Table I. The ISSG will further explore these inconsistencies; future updates to Table I may at least consider the following proposed revisions:

- Remove herring as target species for BITS
- Include IBERAS (Iberian Acoustic Survey) and DRS (Downs Recruitment Survey) as mandatory surveys
- Update species codes to correct typos and to align with common FAO codes

ToR 3:

During the last couple of years, increased demand and use of the sea has made it more complicated to conduct mandatory DCF surveys-at-sea, as access to areas has been more restricted. This can be caused by areas closed for many different reasons, such as Natura 2000 sites, offshore wind farms, energy pipelines etc.

In 2020, the EU committed to protecting 30% of its seas by 2030, including 10% under strict protection for areas of high biodiversity value. The target to protect 30% of the world's marine habitats by 2030 can only be reached if sustainable fishing practices are put in place and Marine Protected Areas are truly protected and properly managed. However, there is no indication on how these areas should be monitored or if scientific surveys, with another aim than investigating the closed area, are still allowed to be conducted within the given area.

Conducting an international survey often means that station allocations have been internationally selected to ensure that the stations are spatially randomly distributed. However, when an MS applies for permission to survey within a given country's EEZ, MS do not seem to have a standard way of allowing scientific vessels to carry out mandatory scientific surveys on fishing stations within these areas, which is an increased challenge for maintaining the required survey coverage.

An alternative direction could be to conduct mandatory surveys with no or low impact on the closed area. For example, a pelagic survey could still be allowed if a given area is closed to protect the bottom habitat. It could also be a down-scaling of a similar survey (to be able to enter a wind farm area) or that MS / ICES / RCGs come up with alternative survey measures (e.g. non-invasive methods such as camera observations) within these areas.

The ISSG reiterates the suggestion for an additional paragraph in the EU-MAP regarding access for scientific surveys appearing in the (EU) Decision 2021/1168 Table I.

ToR 4:

To address ToR 4, the ISSG discussed the upcoming ICES NETSEA meeting as this group is relevant for the regionalisation process of surveys under the remit of the RCG. No additional requests were received.

Background NETSEA meeting

NETSEA (Network for surveys towards ecosystem advice) was proposed as an outcome of a workshop taking place in November 2022 (WKPilot NS-FIRMOG), which was a follow-up from WKREO in 2019.

The current idea is to focus on the North Sea Region and bring expertise from the survey planning groups, stock assessment, and ecosystem working groups, together with statistical / sampling design expertise. The group aims to combine fishery-independent data for the North Sea in such a manner that is useful for data end-users. Fishery-independent survey data are generally dealt with on a survey level and not evaluated regionally across surveys.

The NS-NETSEA will meet for the first time in November 2024 to:

- Synthesize and compare survey information on a regional level for integrated ecosystem and stock assessment or benchmark processes.
- Provide quality assured fishery-independent survey information to data end-users on a regional level.
- Improve alignment on common issues for all fishery-independent survey types in the Greater North Sea.

The group will meet annually in person. Expertise needed for the NS-NETSEA annual meeting depends on the topic and will be further specified when the first meeting is prepared, but in broad sense, it is: end-user expertise from stock assessment and ecosystem assessment working in the North Sea area (e.g. WGINOSE, WGNSSK, HAWG, WGCRAN) as well as expertise in data analysis, survey design (e.g. WGIPEM, WGISUR, WGISDAA) and cruise leaders / scientists-in-charge from all surveys in the area (representation from WGIPS, WGSINS, IBTSWG, WGBEAM, WGMEGS, WGNEPS).

A core group of max. 10 people will meet online four times a year to keep track of the actions and to prepare the annual meeting. The core group members represent an expertise field in the region. It is therefore required that people with good insight in the surveys of a certain type in the North Sea as well as a network within ICES community, participate in the core group.

Although an increase of workload may appear on the short term, the additional effort should directly lead to added value on a regional scale. On the longer term, it is foreseen that installation of a NETSEA will lead to different task allocation in survey, ecosystem assessment and/or stock assessment groups.

Discussions in the ISSG:

In the ISSG on Surveys, it was discussed how to reach out and populate the NETSEA with the desired expertise. The normal procedure for attending ICES meetings is the obvious way forward and ACOM members must be aware of the establishment of this group. Also, the message should preferably be put forward in the upcoming ICES meetings during spring 2024, e.g. the survey planning groups, stock assessment and ecosystem working groups as well as the sampling design groups.

Realistically, the core group might not be up and running until late 2024 / early 2025.

Although many good initiatives have taken place to align or expand data collection for the ecosystem approach, no real changes have taken place in fishery independent monitoring.

The effort spent since 2011 on marine monitoring in relation to the ecosystem approach has not led to any significant changes in fishery-independent monitoring. This is mainly caused by the groups' lack of decision-making mandate.

NETSEA's results and recommendations should be presented to the relevant Regional Coordination Group (RCG), where there is a decision-making mechanism, while the NS NETSEA group may suffer from a (initial) lack of mandate. The ISSG can act as a focal point/contact point and bridge between NETSEA and the RCG. For EU Member States, the possible decisions for changes would then be reflected in the NWP or RWP for the region, and the changes would be legally binding.

It was mentioned that a similar approach could be taken for the Baltic ("Baltic-NETSEA") in the years to come. Since the Baltic survey planning group (WGBIFS) is already handling all surveys in the area (e.g., acoustic and

demersal surveys), the NETSEA concept could be reached by adding some experts in survey design and from the ecosystem assessment group (WGIAB).

ToR 5:

Under ToR 5, the ISSG further contributed to the relevant tables of the draft Regional Work Plan. The survey tables were fine-tuned based on the latest information and specific requests for adaptation.

Furthermore, the ISSG received the response received from WGIPS on the potential survey reduction for the Blue Whiting Survey. In general, the response to a proposed reduction was negative, based on the current survey structure, stock development and ample additional survey effort from participating countries. More work needs to be done and the ISSG will follow-up regarding potential survey reductions as a general task. The topic will receive a lot of attention in the upcoming years, also due to emerging attention towards survey effort reduction in the light of shared costs and carbon footprint reduction.

ToR 6:

Genetic analysis

Recent work on genetic analyses was presented to the group:

A recap about the three types of samples that could be collected for genetic analyses:

- Stomach content samples. This discussion is now included as part of the work of the Stomach sampling ISSG, where several presentations have been made. AZTI has also an EU-MAP funded test study, whose aim is to “Set the basics of a routine food-web monitoring program through genetic analyses of stomach contents”.
- Environmental DNA samples. Environmental DNA is collected by filtering water samples and contains traces of the organisms inhabiting the water column, including large ones such as fish and elasmobranchs. This approach, being considered a biodiversity monitoring approach, could be included as part of the Electronic Monitoring Technologies ISSG, but this is still under discussion.
- Fish tissue samples. These samples can be used for stock delimitation and identification studies, close-kin mark-recapture (CKMR) projects for biomass estimation or epigenetic analyses for age determination. During the NEANSEA and Large Pelagics RCGs, it was discussed that this tissue sampling for genetic analyses could be integrated into the Surveys ISSG.

Presentation of the utility of tissue samples for stock assessment:

The presentation focused on the importance of collecting tissue samples, in particular for stock delimitation and identification, but which are also critical for upcoming CKMR studies, which might also require age estimation through epigenetics.

The Bluefin tuna case could be used as a potential success case study:

Early genetic information-based population connectivity analyses supported natal homing behaviour in the ABFT and allowed for developing a 96 SNP based stock identification tool (Rodriguez-Ezpeleta et al., 2019). Yet, additional analyses based on more samples, including larvae from the Slope Sea, revealed existence of

mixing between individuals from the two main spawning grounds, resulting in individuals with admixed genetic profiles, mostly concentrated in the Slope Sea. It is still not clear how genetic differentiation is maintained in the presence of gene flow. Two hypotheses are possible: 1) a recent expansion (either mediated by an increase in population size or by an improvement of conditions in the Slope Sea for reproduction) of the Mediterranean population into the West, after which there has not been enough time for homogenisation, and 2) a selection against admixed individuals. For testing these hypotheses, genetic monitoring is needed, for which an additional monitoring tool has been developed, that is, an SNP array including 8,000 SNP markers, which was designed and validated to obtain population structure relevant information (such as complete genetic profile and potentially adaptive markers), kin finding, sex determination and mitochondrial variant analysis. More than 2000 individuals have been genotyped using this tool, including individuals from the Mediterranean Sea, the Gulf of Mexico and feeding aggregations in the Atlantic, whose genetic profiles were obtained. Kinship analysis performed on these individuals revealed the suitability of this tool for kin detection and could detect several half and full sibling pairs among the analysed samples. ICCAT has embarked on an Atlantic Bluefin Tuna CKMR analysis, for which a large part of the discussion is the logistics required for sample collection and analyses.

It has been discussed that the use of genetic samples for stock delimitation, ID, CKMR, or ageing should be need-driven. For example, hake and anglerfish are being evaluated for CKMR, for which tens of thousands of samples will need to be analysed. SNP arrays are critical for these types of studies. AZTI has developed one for bluefin tuna, hake, and anglerfish, and Identi-GEN has one for small pelagics.

Example application of eDNA

Pelagic fishlike herring, sardines and mackerel constitute an essential and nutritious human food source globally. Their sustainable harvest is promoted by the application of precise, accurate, and cost-effective methods for estimating bycatch. In DTU Aqua, a study was conducted where the new concept of using eDNA for quantitative bycatch assessment was experimentally tested on the example of the Baltic Sea sprat fisheries with herring bycatch. The full pipeline from sampling of production water on vessels and in processing factories to the estimation of species weight fractions was investigated. Using a series of controlled mixture experiments, it was demonstrated that the eDNA signal from production water shows a strong, seasonally consistent linear relationship with herring weight fractions, however, the relationship is influenced by the molecular method used (qPCR or metabarcoding). In four large sprat landings analysed, despite examples of remarkable consistency between eDNA and visual reporting, estimates of herring bycatch biomass varied between the methods applied, with the eDNA-based estimates having the highest precision for all landings analysed. The eDNA-based bycatch assessment method has the potential to improve the quality and cost effectiveness of bycatch assessment in large catches of pelagic fisheries and in the long run lead to more sustainable management of pelagic fish as a precious marine resource ([Urban et al. 2024](#)).

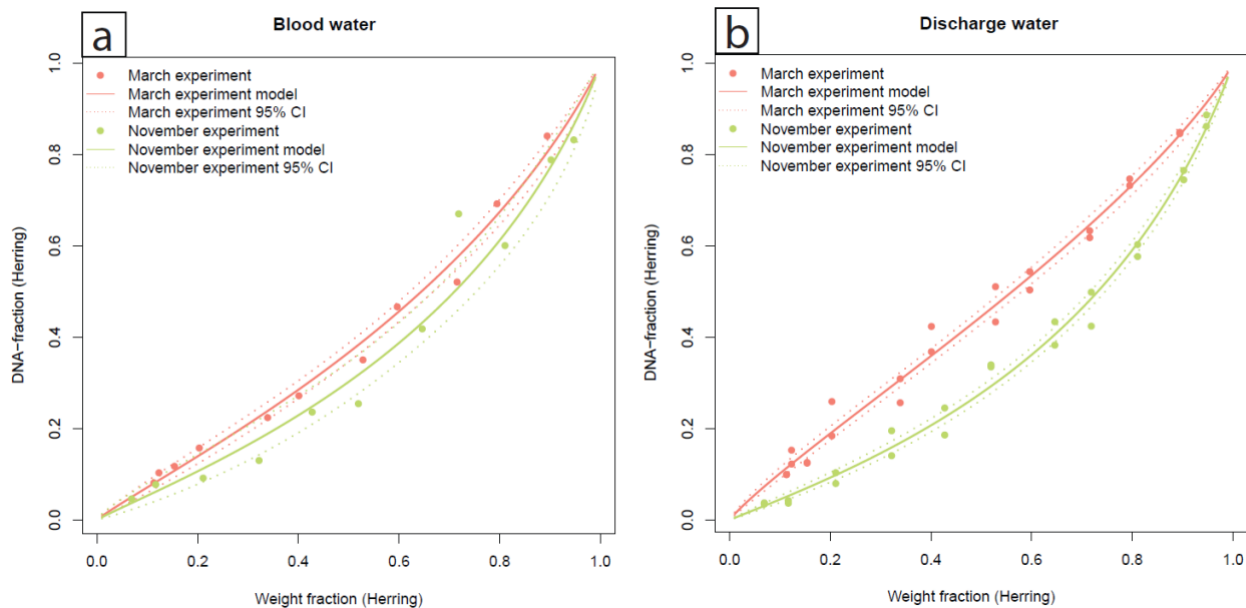


Figure 5.1. The correlation between DNA fraction and weight fraction in herring during the trial (Urban et al. 2024).

Discussion

Following the updates on genetics work to the group, the ISSG discussed the options for further including this work. The bottom line is the need for a specific request from the end user and the data being used for advice in a wider sense. Embedding genetic sampling during surveys and the subsequent analysis would require substantial additional resources as many samples need to be collected and processed. On the other hand, it was signalled that genetic analysis of stomach contents may be cheaper (and of better/more consistent quality) than visual analysis. Also, species misidentification (in particular when valuable species like anglerfish are involved) may have an economic impact as there may be an influence on the stocks involved. This would also advocate for the allocation of additional resources.

Pending further developments and emerging needs stemming from, e.g., the Marine Action Plan, the ISSG continues to monitor the developments and options for embedding new techniques in surveys.

ToR 7&8: See ToR 5.

5.4 Roadmap/follow-up

The work plan for 2024/2025 is almost similar to the previous one. The ToRs have been updated to reflect all tasks and follow-up of the work done in 2023-2024.

1. Renew the multilateral agreements on cost-sharing of the International Ecosystem Survey in the Nordic Seas (IESNS=ASH) and International Blue Whiting Survey (IBWSS).
2. Follow-up on proposals for options to cost-share surveys based on the ISSG work 2023-2024
3. Monitor and discuss implications of the influence of external factors on surveys from a DCF perspective and react when appropriate and requested.
4. Monitor the regionalisation process within ICES (e.g. ICES NETSEA) and act as the focal point for RCG contact.
5. Respond to requests, recommendations and proposals addressed to the RCG regarding surveys, including proposals for substantial changes to the design, set-up or other aspects of the survey impacting MS's Work Plan, effort and/or budget allocation, or obligations. Consider requirements to facilitate future review processes.
6. Review emerging techniques, potentially improving or expanding data collection during surveys.
7. Compile some concrete examples where issues with scientific surveys in spatially restricted zones have been encountered and if and how they have been resolved.

At least one physical/hybrid meeting is foreseen early 2025 to progress with the abovementioned tasks.

5.5 SG Participants

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5. ISSG Surveys

Table 5.1: North Sea and Eastern Arctic survey days in RWP

	Area	BEL	DEU	DNK	FRA	IRL	LTU	NLD	POL	SWE	Total survey days	(EU) 2021/1168
ASH	2		0	29		0		0		0	29	only HER
BTS	4b, 4c, 7d	10	15					35			60	multi species
CODS_Q4	3aS			12						12	24	only COD
DYFS	4b, 4c	8	30					65			103	Only SOL
IBTS_Q1	3a, 4		33	19	21			25		14	112	multi species
IBTS_Q3	3a, 4		20	18						13	51	multi species
IHLS	4,7d		20					15			35	only HER
NHAS	3a, 4, 6a		21	16				20			57	HER, SPR
UWTV3-4	3a			8						8	16	only NEP
UWTV6	4										0	UK is conducting the survey
UWTV7											0	UK is conducting the survey
UWTV8											0	UK is conducting the survey
UWTV9											0	UK is conducting the survey
SNS_NLD	4b, 4c							10			10	SOL, TUR
NSMEGS	4			12							12	MAC
NSSS	4a, 4b			25							25	SAN
DRS	4,7d		4					10			14	

Surveys listed according to the EU (2021/1168). MS are coloured shaded red if they have had quota/ landings in the area covered by the survey but is not contributing to the survey. If a MS is coloured green, it indicates it is participating in the surveys and the numbers shows the days at sea the MS is contributing with. Grey indicates that a given MS do not have quota or landings for the survey targeted species within the area.

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Table 5.2: North Sea and Eastern Arctic. TAC shares by survey/species/Member State

Area	Species	BEL	DEU	DNK	FRA	IRL	LTU	NLD	POL	SWE	Grand Total
ASH	2 HER	0%	8%	44%	2%	11%	0%	16%	2%	16%	99%
BTS	4b, 4c, 7d										
	DAB	5%	5%	34%	1%			55%	0%	0%	100%
	PLE	10%	7%	25%	11%	0%	0%	47%	0%	0%	100%
	RJC	22%	7%	5%	9%			57%	0%	0%	100%
	RJE										
	RJM	14%	5%	4%	1%			75%	0%	0%	100%
	SDV										
	SOL	12%	6%	4%	9%	0%	0%	69%	0%	0%	100%
	SYC	17%	0%	0%	31%			52%	0%	0%	100%
	SYT										
	TUR	6%	10%	19%	0%			64%	0%	0%	100%
CODS_Q4	03AS.	COD	0%	2%	61%	0%	0%	0%	0%	37%	100%
DYFS	4b, 4c	SOL	9%	7%	4%	2%	0%	79%	0%	0%	100%
IBTS_Q1	3A, 4	COD	0%	2%	67%	1%	0%	0%	0%	29%	100%
		FLE	11%	3%	7%	1%		78%	0%	0%	100%
		GUG	2%	3%	44%	0%		49%	0%	1%	100%
		HAD	0%	4%	61%	2%	5%	0%	0%	28%	100%
		HER	5%	14%	30%	13%	0%	29%	0%	8%	100%
		NOP			100%						
		PLE	1%	0%	80%	0%	0%	15%	0%	4%	100%
		RJC	22%	7%	5%	9%		57%	0%	0%	100%
		RJM	14%	5%	4%	1%		75%	0%	0%	100%
		RJN	0%	0%	100%	0%		0%	0%	0%	100%
		RJR									
		SPR	1%	1%	90%	1%	0%	1%	0%	6%	100%

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Area	Species	BEL	DEU	DNK	FRA	IRL	LTU	NLD	POL	SWE	Grand Total	
IBTS_Q3	3A, 4											
		SYC	17%	0%	0%	31%			52%	0%	0%	100%
		TUR	6%	10%	19%	0%			64%	0%	0%	100%
		WHG	0%	0%	90%	0%	0%	0%	0%	0%	10%	100%
		WIT	1%	1%	88%	0%			3%	0%	6%	100%
		COD	0%	2%	67%	1%	0%	0%	0%	0%	29%	100%
		FLE	11%	3%	7%	1%			78%	0%	0%	100%
		GUG	2%	3%	44%	0%			49%	0%	1%	100%
		HAD	0%	4%	61%	2%	5%	0%	0%	0%	28%	100%
		HER	5%	14%	30%	13%	0%	0%	29%	0%	8%	100%
		NOP			100%							
		PLE	1%	0%	80%	0%	0%	0%	15%	0%	4%	100%
		RJC	22%	7%	5%	9%			57%	0%	0%	100%
		RJM	14%	5%	4%	1%			75%	0%	0%	100%
		RJN	0%	0%	100%	0%			0%	0%	0%	100%
	RJR											
	SPR	1%	1%	90%	1%	0%	0%	1%	0%	6%	100%	
	SYC	17%	0%	0%	31%			52%	0%	0%	100%	
	TUR	6%	10%	19%	0%			64%	0%	0%	100%	
	WHG	0%	0%	90%	0%	0%	0%	0%	0%	10%	100%	
	WIT	1%	1%	88%	0%			3%	0%	6%	100%	
IHLS	4,7d	HER	6%	16%	27%	15%	0%	0%	32%	0%	4%	100%
NHAS	3A, 4, 6a	HER	5%	14%	30%	13%	0%	0%	29%	0%	8%	100%
		SPR	1%	1%	90%	1%	0%	0%	1%	0%	6%	100%
UTW3-4	3A	NEP	0%	0%	73%	0%	0%	0%	0%	26%	100%	
UTW6	4	NEP	36%	1%	43%	1%	0%	0%	19%	0%	100%	
SNS_NLD	4b, 4c	SOL	9%	7%	4%	2%	0%	0%	79%	0%	100%	
		TUR	6%	10%	19%	0%			64%	0%	100%	

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	Area	Species	BEL	DEU	DNK	FRA	IRL	LTU	NLD	POL	SWE	Grand Total
NSMEGS	4	MAC	0%	0%	95%	0%	0%	0%	0%	0%	5%	100%
NSSS	4a, 4b	SAN	0%	0%	96%	0%	0%	0%	0%	0%	4%	100%
DRS	4,7d	HER	6%	16%	27%	15%	0%		32%	0%	4%	100%

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5. ISSG Surveys

Table 5.3: North Atlantic survey days in RWP

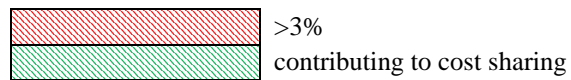
	Survey Area	BEL	DEU	DNK	ESP	FRA	IRL	NLD	PRT	SWE	Total Survey Days	Comment
GGS	14, NAFO SA1		40					0			40	Conducted in Greenland
IBTS_Q1	6a, 7a		33	19		21		25		14	112	
IBTS_Q4	6a, 7, 8, 9a				80	75	47		30		232	
IBWSS	6, 7				12		21	18			51	
MEGS	6, 7, 8, 9a		37		38		42	30	40		187	
REDTAS	Va, XII, XIV; NAFO SA 1-3		35								35	Conducted in Greenland
SAHMAS	8, 9				22	29			33		84	
SDEPM	8c, 9a				25				35		60	
ISBCBTS	7afg										0	UK is conducting the survey
SWE- COS_GBE	7efgh										0	UK is conducting the survey
WESPAS_IRL	6a, 7a-g						42				42	
BIOMAN	8				25						25	
UWTV11-13	6a, 7a, 7b, 7ghj, 9a										0	UK is conducting the survey
UWTV14	6a, 7a, 7b, 7ghj, 9a										0	UK is conducting the survey
UWTV15	6a, 7a, 7b, 7ghj, 9a										0	UK is conducting the survey
UWTV16-17	6a, 7a, 7b, 7ghj, 9a						12				12	
UWTV19	6a, 7a, 7b, 7ghj, 9a						9				9	
UWTV20-22	6a, 7a, 7b, 7ghj, 9a						11				11	
UWTV30	6a, 7a, 7b, 7ghj, 9a				14						14	
NepS	9a								20		20	
CSHAS_IRL	6a, 7gj						21				21	
ECOCADIZ_ESP	9a				12						12	
IESSNS	2, 3aN, 4, 5,14			10							10	DNK (Faroe, Greenland), NOR, ICE
JUVENA_ESP	8a-d				30						30	
ORHA- GO_Q4_FRA	8ab					8					8	
PALPRO_ESP	8c				8						8	
IAMS_IRL	6a, 7						32				32	
SIA- MISS_GBS	4a, 4b, 6a, 6b										0	Scotland is conducting the survey

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PELTIC	7de										0	UK is conducting the survey
ISAS	7a										0	UK is conducting the survey
IBERAS	9a				18				18		36	Non-mandatory survey (currently) - Sardine (same survey, same vessel, same days)



* STECF Comment (STECF-19-05 - review of mandatory surveys: Change in region. Included in the current EU MAP Table 10 in the "North Atlantic" region, but allocated here to the "North Sea & Eastern Arctic" due to regional competence of the RCG NS&EA.

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5. ISSG Surveys

Table 5.4 North Atlantic
Summary of all surveys, with the main species listed in (EU) 2021/1168. TAC shares by survey/species/Member State

Survey	Area	Species	BEL	DEU	DNK	ESP	EST	FRA	IRL	LTU	LVA	NLD	POL	PRT	SWE	Grand Total
GG5	14, NAFO SA1	COD	3%	1%	0%	0%	0%	34%	58%	0%	0%	4%	0%	0%	0%	100%
IBTSQ4	6a, 7, 8, 9a	OCTs	0%	0%	0%	48%	0%	51%	0%	0%	0%	0%	0%	1%	0%	100%
		MON	30%	0%	55%	0%	0%	0%	0%	0%	0%	6%	0%	4%	5%	100%
		ANK	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		ANF	8%	2%	1%	12%	0%	68%	7%	0%	0%	2%	0%	1%	0%	100%
		BOC	0%	0%	92%	0%	0%	0%	5%	0%	0%	0%	3%	0%	0%	100%
		BSS	0%	0%	0%	14%	0%	65%	0%	0%	0%	1%	0%	18%	0%	100%
		COD	3%	1%	0%	0%	0%	34%	58%	0%	0%	4%	0%	0%	0%	100%
		CTL	1%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	30%	0%	100%
		DGS	12%	3%	0%	6%	0%	49%	31%	0%	0%	0%	0%	0%	0%	100%
		GAG	0%	0%	0%	25%	0%	67%	0%	0%	0%	0%	0%	7%	0%	100%
		GFB	0%	0%	5%	53%	0%	40%	1%	0%	0%	0%	0%	1%	0%	100%
		HAD	2%	1%	1%	0%	0%	63%	33%	0%	0%	0%	0%	0%	0%	100%
		HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
		HKE	1%	0%	0%	37%	0%	57%	3%	0%	0%	0%	0%	2%	0%	100%
		HOM	0%	16%	15%	0%	0%	7%	0%	0%	0%	7%	6%	48%	0%	100%
		LDB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		MAC	0%	5%	11%	43%	0%	4%	15%	0%	0%	8%	0%	9%	3%	100%
		MEG	0%	0%	4%	0%	0%	88%	0%	0%	0%	0%	0%	7%	0%	100%
		LEZ	2%	0%	0%	39%	0%	43%	17%	0%	0%	0%	0%	0%	0%	100%
		LDB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		NEP	0%	0%	0%	13%	0%	46%	40%	0%	0%	0%	0%	2%	0%	100%
		PLE	17%	0%	0%	0%	0%	68%	14%	0%	0%	0%	0%	0%	0%	100%
		RJC	15%	1%	1%	23%	0%	24%	9%	0%	0%	7%	0%	21%	0%	100%
		RJM	13%	1%	0%	6%	0%	64%	5%	0%	0%	7%	0%	4%	0%	100%
		RJN	1%	0%	0%	10%	0%	85%	4%	0%	0%	0%	0%	1%	0%	100%
		RNG	0%	0%	0%	31%	1%	52%	4%	1%	0%	0%	10%	0%	0%	100%
		SDV	0%	0%	0%	39%	0%	0%	11%	0%	0%	0%	0%	50%	0%	100%
		SHO	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
		SQZ	0%	55%	0%	0%	0%	0%	0%	0%	0%	11%	34%	0%	0%	100%

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5. ISSG Surveys

Survey	Area	Species	BEL	DEU	DNK	ESP	EST	FRA	IRL	LTU	LVA	NLD	POL	PRT	SWE	Grand Total
		SYC	7%	0%	0%	40%	0%	38%	7%	0%	0%	7%	0%	0%	0%	100%
		WHG	1%	0%	0%	8%	0%	52%	39%	0%	0%	0%	0%	0%	0%	100%
IBTSQ1	6a, 7a	OCTs	0%	0%	0%	48%	0%	51%	0%	0%	0%	0%	0%	1%	0%	100%
		COD	3%	1%	0%	0%	0%	34%	58%	0%	0%	4%	0%	0%	0%	100%
		CTL	1%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	30%	0%	100%
		HAD	2%	1%	1%	0%	0%	63%	33%	0%	0%	0%	0%	0%	0%	100%
		HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
		HOM	0%	16%	15%	0%	0%	7%	0%	0%	0%	7%	6%	48%	0%	100%
		LEZ	2%	0%	0%	39%	0%	43%	17%	0%	0%	0%	0%	0%	0%	100%
		MAC	0%	5%	11%	43%	0%	4%	15%	0%	0%	8%	0%	9%	3%	100%
		NEP	0%	0%	0%	13%	0%	46%	40%	0%	0%	0%	0%	2%	0%	100%
		PLE	17%	0%	0%	0%	0%	68%	14%	0%	0%	0%	0%	0%	0%	100%
		RJC	15%	1%	1%	23%	0%	24%	9%	0%	0%	7%	0%	21%	0%	100%
		RJM	13%	1%	0%	6%	0%	64%	5%	0%	0%	7%	0%	4%	0%	100%
		RJN	1%	0%	0%	10%	0%	85%	4%	0%	0%	0%	0%	1%	0%	100%
		SDV	0%	0%	0%	39%	0%	0%	11%	0%	0%	0%	0%	50%	0%	100%
		SHO	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
		SYC	7%	0%	0%	40%	0%	38%	7%	0%	0%	7%	0%	0%	0%	100%
ISBCBTS	7afg	PLE	17%	0%	0%	0%	0%	68%	14%	0%	0%	0%	0%	0%	0%	100%
		RJC	15%	1%	1%	23%	0%	24%	9%	0%	0%	7%	0%	21%	0%	100%
		RJE	12%	0%	0%	14%	0%	57%	17%	0%	0%	0%	0%	0%	0%	100%
		RJH	31%	0%	0%	1%	0%	43%	17%	0%	0%	0%	0%	8%	0%	100%
		RJM	13%	1%	0%	6%	0%	64%	5%	0%	0%	7%	0%	4%	0%	100%
		SDV	0%	0%	0%	39%	0%	0%	11%	0%	0%	0%	0%	50%	0%	100%
		SYC	7%	0%	0%	40%	0%	38%	7%	0%	0%	7%	0%	0%	0%	100%
		SOL	22%	0%	0%	0%	0%	66%	6%	0%	0%	6%	0%	0%	0%	100%
SWE- COS_GBE	7efgh	RJB	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
		RJC	15%	1%	1%	23%	0%	24%	9%	0%	0%	7%	0%	21%	0%	100%
		RJE	12%	0%	0%	14%	0%	57%	17%	0%	0%	0%	0%	0%	0%	100%
		RJH	31%	0%	0%	1%	0%	43%	17%	0%	0%	0%	0%	8%	0%	100%
		RJM	13%	1%	0%	6%	0%	64%	5%	0%	0%	7%	0%	4%	0%	100%
		SDV	0%	0%	0%	39%	0%	0%	11%	0%	0%	0%	0%	50%	0%	100%
		SOL	22%	0%	0%	0%	0%	66%	6%	0%	0%	6%	0%	0%	0%	100%

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5. ISSG Surveys

Survey	Area	Species	BEL	DEU	DNK	ESP	EST	FRA	IRL	LTU	LVA	NLD	POL	PRT	SWE	Grand Total
		SYC	7%	0%	0%	40%	0%	38%	7%	0%	0%	7%	0%	0%	0%	100%
IBWSS	6, 7	WHB	0%	6%	17%	24%	0%	12%	13%	0%	0%	20%	0%	4%	4%	100%
MEGS	6, 7, 8, 9a	HOM	0%	16%	15%	0%	0%	7%	0%	0%	0%	7%	6%	48%	0%	100%
		MAC	0%	5%	11%	43%	0%	4%	15%	0%	0%	8%	0%	9%	3%	100%
SAHMAS	8, 9	ANE	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	0%	16%	0%	100%
		BOC	0%	0%	92%	0%	0%	0%	5%	0%	0%	0%	3%	0%	0%	100%
		HOM	0%	16%	15%	0%	0%	7%	0%	0%	0%	7%	6%	48%	0%	100%
		PIL	0%	0%	0%	34%	0%	23%	0%	0%	0%	0%	0%	43%	0%	100%
SDEPM	8c, 9a	HOM	0%	16%	15%	0%	0%	7%	0%	0%	0%	7%	6%	48%	0%	100%
		PIL	0%	0%	0%	34%	0%	23%	0%	0%	0%	0%	0%	43%	0%	100%
WESPAS_IRL	6a, 7a-g	BOC	0%	0%	92%	0%	0%	0%	5%	0%	0%	0%	3%	0%	0%	100%
		HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
UWTV	6a, 7a, 7b, 7ghj, 9a	NEP	0%	0%	0%	13%	0%	46%	40%	0%	0%	0%	0%	2%	0%	100%
		LDB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		GFB	0%	0%	5%	53%	0%	40%	1%	0%	0%	0%	0%	1%	0%	100%
		SHO	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
SIA- MISS_GBS	4a, 4b, 6a, 6b	ANF	8%	2%	1%	12%	0%	68%	7%	0%	0%	2%	0%	1%	0%	100%
		LEZ	2%	0%	0%	39%	0%	43%	17%	0%	0%	0%	0%	0%	0%	100%
PELTIC	7de	PIL	0%	0%	0%	34%	0%	23%	0%	0%	0%	0%	0%	43%	0%	100%
		ANE	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	0%	16%	0%	100%
		SPR	1%	1%	69%	0%	0%	15%	0%	0%	0%	15%	0%	0%	0%	100%
Bioman	8	ANE	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	0%	16%	0%	100%
		PIL	0%	0%	0%	34%	0%	23%	0%	0%	0%	0%	0%	43%	0%	100%
NepS	9a	NEP	0%	0%	0%	13%	0%	46%	40%	0%	0%	0%	0%	2%	0%	100%
CSHAS_IRL	6a, 7gj	HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
IESSNS	2, 3aN, 4, 5,14	MAC	0%	5%	11%	43%	0%	4%	15%	0%	0%	8%	0%	9%	3%	100%
		HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
		WHB	0%	6%	17%	24%	0%	12%	13%	0%	0%	20%	0%	4%	4%	100%
ISAS	7a	HER	0%	8%	0%	0%	0%	12%	69%	0%	0%	11%	0%	0%	0%	100%
IAMS_IRL	6a, 7	MON	30%	0%	55%	0%	0%	0%	0%	0%	0%	6%	0%	4%	5%	100%
		ANK	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		ANF	8%	2%	1%	12%	0%	68%	7%	0%	0%	2%	0%	1%	0%	100%
		MEG	0%	0%	4%	0%	0%	88%	0%	0%	0%	0%	0%	7%	0%	100%

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5. ISSG Surveys

Survey	Area	Species	BEL	DEU	DNK	ESP	EST	FRA	IRL	LTU	LVA	NLD	POL	PRT	SWE	Grand Total
		LEZ	2%	0%	0%	39%	0%	43%	17%	0%	0%	0%	0%	0%	0%	100%
		LDB	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
PALPRO_ESP	8c	GFB	0%	0%	5%	53%	0%	40%	1%	0%	0%	0%	0%	1%	0%	100%
JUVENA_ESP	8a-d	ANE	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	0%	16%	0%	100%
ECOCADIZ_ESP	9a	ANE	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	0%	16%	0%	100%
ORHA_GO_Q4_FRA	8ab	SOL	22%	0%	0%	0%	0%	66%	6%	0%	0%	6%	0%	0%	0%	100%
IBERAS	9a	PIL	0%	0%	0%	34%	0%	23%	0%	0%	0%	0%	0%	43%	0%	100%

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5. ISSG Surveys

Table 5.5 Baltic TAC shares and survey days by survey/species/Member State

TAC%										Survey days										
BITS Q1										BITS Q1										
	DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total		DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total	
BLL										BLL	24	39				2	9	28	14	116
COD	19.3	40.9	1.1	1.1	2.5	4.6	13.8	16.7	100	COD	24	39				2	9	28	14	116
DAB										DAB	24	39				2	9	28	14	116
FLE										FLE	24	39				2	9	28	14	116
HER	1.8	1.1	26.9	45.6	1.3	15.0	6.5	1.8	100	HER	24	39				2	9	28	14	116
PLE	27.6	38.3			0.0	0.0	19.8	14.3	100	PLE	24	39				2	9	28	14	116
TUR										TUR	24	39				2	9	28	14	116
Total	49	80	28	47	3.8	20	40	33		Total	168	273	0	0	14	63	196	98		
BITS Q4										BITS Q4										
	DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total		DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total	
BLL										BLL	21	39	3			2	11	23	11	110
COD	19.3	40.9	1.1	1.1	2.5	4.6	13.8	16.7	100	COD	21	39	3			2	11	23	11	110
DAB										DAB	21	39	3			2	11	23	11	110
FLE										FLE	21	39	3			2	11	23	11	110
HER	1.1	1.3	6.5	45.6	1.8	1.8	15.0	26.9	100	HER	21	39	3			2	11	23	11	110
PLE	19.8	38.3	0.0		0.0	0.0	27.6	14.3	100	PLE	21	39	3			2	11	23	11	110
TUR										TUR	21	39	3			2	11	23	11	110
Total	40	80	7.7	47	4.3	6.4	56	58		Total	147	273	21	0	14	77	161	77		
BIAS										BIAS										
	DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total		DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total	
HER	1.1	1.3	6.5	45.6	1.8	1.8	15.0	26.9	100	HER	21	0	10	14	2	10	16	16	89	
SPR	6.1	10.1	11.1	5.1	5.1	14.1	29.3	19.2	100	SPR	21	0	10	14	2	10	16	16	89	
Grand Total	7.2	11.4	17.6	50.6	6.8	15.9	44.3	46.1	200	Grand Total	42	0	20	28	4	20	32	32		
SPRAS										SPRAS										
	DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total		DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total	
SPR	6.1	10.1	11.1	5.1	5.1	14.1	29.3	19.2	100	SPR	22	0	5	0	2	8	14	8	59	
Grand Total	6.1	10.1	11.1	5.1	5.1	14.1	29.3	19.2	100	Grand Total	22	0	5	0	2	8	14	8		
GRAHS										GRAHS										
	DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total		DEU	DNK	EST	FIN	LTU	LVA	POL	SWE	Total	
HER			46.2			53.8			100	HER			9*			5			14*	
Grand Total			46			54			100	Grand Total	0	0	9*	0	0	5	0	0		

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6 ISSG Regional Work Plans

6.1 Background

Describe the establishment of the intersessional subgroup and the rationale behind it. Also, identify chair(s) and the aim of the ISSG.

In 2022 the ISSG/RWP was given the mandate to develop Draft Regional Work Plan taking over the Fishn'Co project and then follow-up on the RWP development in 2023 onward. It was also recommended that the status of the ISSG/RWP was pan-regional.

The RWPs to be dealt with within the ISSG RWP are RWP NANSEA, RWP Baltic and RWP Large Pelagics and alignment with RWP Med & BS was demanded. The RWP socioeconomics are dealt with within RCG ECON.

All ISSGs chairs, RCG chairs, NCs and secretariat are invited participants in the group.

The ISSG is chaired by Joël Vigneau (IFREMER, France) and Maria Hansson (SLU-Aqua, Sweden). The tasks and outputs from the subgroup work is ending up in RCG Baltic, RCG NANSEA, RCG LP, RWP Med & BS for the period 2025-2027.

6.2 Work-plan

ToRs and work plan (specific tasks) for 2023/2024.

The workplan agreed at the RCG TM 2023 was that ISSG/RWP was tasked to:

- update the proposed RWPs following the TM discussions and agreements and send the final version of RWPs to RCG chairs for circulating these to all NCs before the DM. This was meant to allow MS to validate all Agreements and commitments contained in the RWP or amend or delay until further clarification
- follow-up any demand by NC to adapt the RWPs before sending to STECF.
- follow-up on STECF and European Commission review and recommendations and amend the RWPs as needed for a final agreement by NCs early in 2024.
- Prepare issues to be discussed in RCG TM 2024

Following work was identified to progress before inclusion in RWP:

RWP NANSEA - Freezer trawler – Development of a Regional sampling plan

- RWP NANSEA, Baltic, Med&BS - PETS – Identification of high-risk fisheries
- RWP NANSEA, Baltic, Med&BS - Recreational – inclusion on a list of species to be included on top of the mandatory species to be monitored
- RWP NANSEA, (Med&BS?) - Stomach sampling analysis for the NANSEA – agreements on MS doing the analysis on their own or commission other MS to do it.
- RWP Baltic - Stomach sampling – Development of a rotating system like in the North Sea
- All RWPs – Update Table 1.3 on multi-lateral agreements and Table 2.1 with reference years 2021-2023 in advance of the RCG/TM 2024
- RWP Large Pelagics – Progress on agreements on the regional sampling coordination (program T3)

6.3 Progress during 2023/2024

Describe meetings and the work progress during the last year - overview of 2023/2024 subgroup work, including difficulties encountered caused by external influences (e.g. the COVID pandemic, the war in Ukraine). If applicable, describe communication between ISSG, relevant ICES EGs and other end users.

6.3.1 After RCG TM and DM 2023

After RCG TM in June 2023 the RWP Baltic 2025-2027 and RWP NANSEA 2025-2027 was updated following the TM discussions and agreements and an updated version was sent to RCG chairs for [consultation by MS](#) (7 July 2023).

Most of the feedbacks made by MS during the consultation process were taken into account and a new version was ready early September. This Version was approved without change by MS during the NC Decision meeting (28 Sept. 2023).

The ISSG RWP met 5 October to follow up and thereafter, the approved version of RWPs was sent to RCG chairs for transmission to STECF for evaluation (October 2023).

6.3.2 Considerations of STECF evaluation

During the STECF evaluation (STECF-EWG-23-16¹³), a presentation was made by Joël Vigneau (co-chair of the ISSG/RWP) on the background and context of the development of RWP for RCG NANSEA and RCG Baltic and issues to be addressed by STECF. During the meeting, a thorough evaluation has been carried out and STECF had specific comments for each section of each RWP and more general suggestions on how to proceed with the RWPs. The specific comments were all transmitted to the relevant ISSGs and considered during ISSG/RWP meetings. The general comments and suggestions are worth to be reminded here below.

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General principles

STECF reminded that the legally binding document was the NWP, so that RWP are only binding if it is referred to in the NWP. Thereafter, the work completed (AR) is reported only at national level, which will then logically follow both the NWP and RWP.

- The question remains on how to react when a MS does not follow the provisions of a RWP, either by not referring to it in the WP or propose an altered version. This question is to be addressed in the RCG Rules of Procedure.

STECF stressed that there should not be too many changes in 2024 from the version available for this EWG. It was also mentioned that RCG Long Distance Fisheries (LDF) have developed long time agreements and commitments, which looks like a RWP without naming it as such. STECF suggested RCG LDF to develop their agreements and commitments in a RWP form in the future. RCG LDF did further prepare a draft RWP for consideration in their 2024 TM.

Mechanism of tying the RWP within the WP submission

Linkage to RWP in tables labelled differently (RWP name, Agreed at RCG, ...) with different modalities as inputs (free text, Y/N). There should be consistency in labelling throughout all tables – this may require modification of WP templates - but the quick solution would be to use the comment column to spell the

¹³ <https://stecf.jrc.ec.europa.eu/documents/d/stecf/stecf-23-16-wp-eval-and-dti-jrc136208>

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RWP name when no column for such information is available in a table. The idea is that each line of RWP table copied and pasted to a WP should have a clear information on the source of information; The proposal still needs to be kept for future revision of WP templates.

- There should be no possibility to disconnect or depart from a RWP. If some exceptional circumstances imply that the RWP provisions could not be met, this should be explained in the AR without needing to alter an approved RWP; To be discussed at RCG TM.

Timeline of action

There is a common understanding that no major modification of the current RWP should occur by the summer of 2024 (RCG Technical Meeting and Decision Meeting).

- The only occasion to update the current RWP 2025-2027 as a support of the WP 2025-2027 is a final approval during the COM NC meeting in March 2024.

This means that any substantial change or addition should be discussed in the forthcoming ISSG RWP meeting, scheduled early December 2023 to address the STECF feedback. The revised version of the RWP 2025-2027 will need to be circulated to all NC one month before the NC meeting.

- For further minor updates, the EWG appreciates that landings and shares in Table 2.I will be updated in May 2024 using the most recent reference years. This is not expected to change the full picture but will provide the most recent updates in the RWP to be reflected in the WP 2025-2027 proposals.
- Regarding STECF evaluation, it is important to note that the current version and evaluation corresponds to the formal evaluation. The further revisions in 2024 will not lead to a new evaluation.

Establishing Regional Work Plans

How decisions and RWP drafts are being formulated and officially passed is complicated. To our current understanding, ISSGs together with members of the MS have to reach a consensus, bring it forward to ISSG RWP and to the RCGs, the National Correspondents and then to the Liaison Meeting / Decision Meeting, before a RWP can be regarded as officially in place.

- It would be good to have a straightforward definition how the process of drafting a RWP is done.

Table 2.I of the RWP Large Pelagics

- STECF stressed the need to have a Table 2.I with their stocks of interest.

This list of species should be defined by the RWG LP in collaboration with other RCG chairs. Having a Table 2.I would clarify the scope of the RCG vs all other RCGs (how they complement each other). ISSG/RWP, in agreement with all the chairs of RCGs, initiated the implementation of this rule for all Table 2.I and agreed to go one step further for Large Pelagics by splitting some of the wide-ranging areas into narrower geographic zones (e.g. Mediterranean and Black Sea, Atlantic South, Western Central Atlantic, North-east Atlantic, Northwest Atlantic, ...) in order to match geographical mandates of the other RCGs. This will be tested for a proposal at the RCG LP TM meeting in 2024.

Preparing for NC Decision meeting

ISSG RWP met 6 December 2023 to set up a plan for taking care of STECF suggestions and a new version of RWPs was sent out 7 February 2024 (after ISSG RWP meeting 6 February). The new version had considered e.g. the principles for linking RWPs with NWPs in textbox and tables and dealt with minor formatting corrections. In terms of content, the major change was made in the Textbox IA, which now includes guidelines and roadmap from end-users on diadromous data collection.

The amended versions of RWP NANSEA, Baltic were sent to RCG chairs for [consultation to all MS and feedback](#) and were collectively approved during the NC March 2024 meeting.

6.3.3 After NC decision meeting

After the approval of the RWP by NCs, it remained the update of Table 1.3 and Table 2.1. Table 1.3 was taken care by ISSG/NC and ISSG/RWP included the most updated version of this table into the RWPs. The update of Table 2.1 was done in May 2024 and [circulated to MS for consultation and feedback](#) on the correctness of the proposed landings and quota shares. Two meetings were held in ISSG RWP in May before submitting the final RWP Baltic 2025-2027 and RWP NANSEA 2025-2027 to the Commission (31 May 2024).

The work on the revision of the RWP Large Pelagics was mainly on the Table 2.1, prepared for consideration in the RCG LP at the end of June 2024. The point of improving their agreements on the regional sampling plan is also on the agenda of the RCG LP meeting. ISSG/RWP was asked to make a presentation to that meeting and participate to the discussion on their RWP 2025-2027.

6.4 Roadmap/follow-up

Describe the roadmap of future actions and the follow-up needed by this subgroup and highlight the questions for RCGs to consider, including [if applicable] key points, main outcomes, what needs to be decided, and suggestions for the next step in intersessional work (future tasks).

Key questions in RCG TM

- Find a generic common approach to harmonise the description in the NWP and how it's linked to the RWPs. Based on real examples. Plan for a subgroup work on this issue during the TM.
- Follow-up of progress by each ISSG on Regional work, that are to be included in upcoming intersessional work. RCG chairs to make sure all ISSG know this is expected and are prepared to present this in TM. The option should be discussed on the inclusion of a ToR for relevant ISSGs to prepare elements for the RWP as part of their coordination of activities.
- Agree on the Table 2.1 setting, mainly considering the issue of new stocks included in the TAC & quota regulation and absent from the Table I of the EU delegated decision (e.g. anchovy in area VII, Nephrops FUs, ...) and stocks without TACs developing in new areas (e.g. Loligo in area IV, ...). Agreements on immediate fixes and further intersessional work to be prepared.
- There should be no possibility to disconnect or depart from a RWP. If some exceptional circumstances imply that the RWP provisions could not be met, this should be explained in the AR without needing to alter an approved RWP;
 - The question on how to react when a MS does not follow the provisions of a RWP, either by not referring to it in the WP or propose an altered version, to be discussed and addressed in the RCG Rules of Procedure
- a straightforward definition how the process of drafting a RWP should be developed.

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- Some of the proposed modifications by STECF require the modification of the WP templates, especially the inclusion of a column in each table with the ref to RWP. This needs to be kept notice when STECF will work on the new templates.
- Agreement on a roadmap for the intersessional work 2024-2025, e.g. how to plan for the update of RWP 2025-2027
- Nomination of a new co-chair

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7. ISSG Case Study of Fisheries for Small Pelagics in the Baltic

7 ISSG Case Study of Fisheries for Small Pelagics in the Baltic

7.1 Background

RCG Baltic agreed to use the fisheries for small pelagic species as a case study for the development of a regional sampling programme in the Baltic Sea. It was agreed to establish a subgroup for in-depth analyses of how a regional sampling programme for small pelagics can be established and suggest how it can be implemented. The pelagic fisheries target western Baltic herring, central Baltic herring, herring in the Gulf of Bothnia, herring in the Gulf of Riga and sprat.

In the 2022 decision meeting (D04): NCs agreed on the development of a binding RWP 2025-2027 for NANSEA and Baltic region without formal adoption. (DEU, DNK, EST, ESP, FIN, LTU, LAV, POL, SWE)

Summary of progress of the ISSG activity in 2023-2024.

7.2 Workplan

The plan for 2023- 2024 was to prepare for full implementation of the small pelagic in the Baltic as RWP.

7.3 Progress during 2023/2024

The ISSG have, following this decision, worked to update the documentation needed to frame a RWP into table 2.5, text box 2.5 and annex I.I. Only one online meeting was conducted in the ISSG on February 19th 2024, and progress on the tables and text was made by correspondence after the meeting. The main issue during the meeting was to develop a common understanding of the variables in table 2.5 and how to interpret them as well as update the annex I.I with the newest data.

Within the regional work plans are the details of the sampling schemes expressed in a text file (annex I.I). It is also access to those details that will allow the ISSG to work towards to goals for the ambition level. Summarizing the information from the different countries in annex I.I into a regional document has resulted in a substantial document. All headings in the national annex I.I might not be relevant for the regional sampling plan as the content of the plan will be dependent on which agreements are made, these have been left empty after the agreement in Fishn'Co.

Last year it was recommended by the group not to continue to look into the historic misreporting as it was difficult to archive information that could be used to update the time series.

Text box 2.5, table 2.5 and Annex I.I are all included in the report.

7.4 Roadmap/follow-up

- Continuing RWP on small pelagic which will be implemented in 2025.
- Continue to work on table 2.5, text box 2.5 and annex I.I
- If possible, still having focus on the possible misreporting between sprat and herring
- Update and adjust the RWP on small pelagic to archive the best possible compliance between all MS

It will be important to follow up and ensure that the RWP and ensure that MS are on the same track and have a common understanding of how to continue.



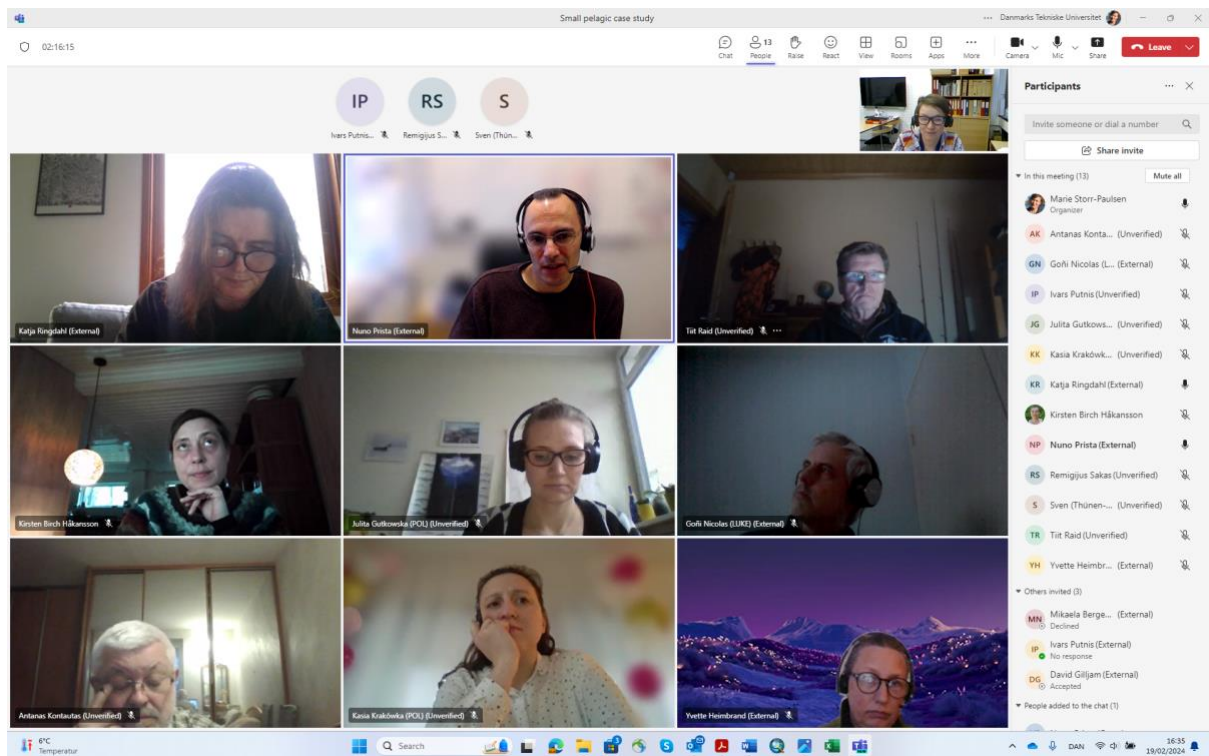


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7. ISSG Case Study of Fisheries for Small Pelagics in the Baltic

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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

8 ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

8.1 Background

In 2018, The EU freezer trawler fleet targeting small pelagic species (mackerel, herring, horse mackerel, blue whiting, sprat and argentine) in the North Atlantic and North Sea was identified by the RCG as a potential candidate for the development of a regionally coordinated sampling plan. The current sampling of the fleet, which is largely Dutch owned and operates under the flags of the Netherlands, Germany, France and the UK (England), is conducted by the Dutch and German research institutes. While there exists an element of cooperation, the national sampling schemes differ in extent and methodology and there is no formal arrangement or harmonisation.

Currently, the Dutch sampling consists of 2 separate programmes; an on-board observer programme and a market sampling programme. The observer programme is a continuation of the Dutch discard sampling programme and is mainly conducted under the remit of bycatch monitoring, whereas the market sampling programme samples the catch for the purposes of informing assessment working groups. The German sampling consists of an on-board observer programme where catch is sampled, for the purpose of informing assessment working groups, and bycatch is monitored. The primary purpose of this ISSG is to propose a statistically robust regional sampling scheme for the European pelagic freezer trawler fleet aiming to both monitor the pelagic target species and the incidental bycatches. An observer programme, rather than a market sampling programme, was identified as the most suitable regional sampling scheme (RCG NANSEA & RCG Baltic, 2022) as it is the most efficient approach to meet the two monitoring aims.

So far, simulation studies have been conducted to investigate annual sampling coverage for a suite of preselected stocks under various sampling schemes including random selection of individual fishing trips and vessels. Furthermore, the ISSG developed a sampling protocol which was tested in a pilot study for the North Sea herring fishery in Q3 in 2022 (Pilot Study 2022). While the pilot study showed promising results, it focussed on a single species*area combination. As a common harmonised protocol is required for all fisheries in which the European pelagic freezer trawler fleet participates, the ISSG recommended that additional pilot studies for the period 2023/2024 for alternative species*area combination(s) be conducted by both NLD and DEU.

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8.2 Work-plan

The following tasks were identified during the RCG meeting in 2023 for the attention of the ISSG in 2023/24:

1. Identify and conduct NLD and DEU pilot studies
2. Review, analyse and compare the results from the pilot studies with concurrent NLD market sampling / DEU observer sampling
3. Develop a harmonized protocol for sampling the EU freezer trawler fleet

8.3 Progress during 2023/ 2024

8.3.1 Specifications and identification of pilot study (Task 1)

Based on the exercise to design a pilot study carried out by the ISSG in 2021/2022 (RCG NA NS&EA RCG Baltic 2022), the specifications of the pilot studies were finalised, namely an observer trip carried out for the

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blue whiting fishery in Q4 2023 within the NLD observer programme (Pilot Study 2023) and an observer trip carried out for the mackerel fishery in Q1 2024 within the DEU observer programme (Pilot Study 2024).

Sampling protocol pilot study

Selection trip

The pilot studies, to be conducted during two regular observer trips, were selected according to the standard procedures with the condition that they should target blue whiting (Pilot Study 2023) and mackerel (Pilot Study 2024).

Sampling

A scientific observer boarded the selected vessel with the following instructions:

- Collect operational- and catch data each time the fishing gear was deployed (each 'haul'): vessel position; haul duration; depth; weather conditions; total catch estimate.
- Take an unsorted catch sample of 30-150 kg (depending on the target species; e.g. herring "small" sample and mackerel "large sample") prior to the sorting process from the first ten hauls, followed by every second haul thereafter¹⁴.
 - o Sort the catch sample by species and record total weight for each.
 - o Identify and measure all fish to the cm below (herring and sprat from 0.5 cm below).
 - o From the first 15 sampled hauls* sampled take in addition a random age subsample, consisting of 50 individuals (i.e. a total of 750 blue whiting individuals for Pilot Study 2023 and 750 mackerel individuals for Pilot Study 2024), from the unsorted catch sample and process; i.e. take individual length measurements 'to the mm below' and individual wet weight (grammes), determine sex and maturity by opening the body cavity, and collect otoliths. The otoliths are stored in paper bags and taken back to the lab for age determination.
- * When new length classes are observed within a haul, take an additional age sample of the haul of 50 individuals.
- Monitor for incidental bycatches on the bridge and at the conveyer belt in close collaboration with the crew for as many hauls as possible.

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8.3.2 Pilot studies and harmonized protocol (Task 2 and 3)

Pilot Study 2023 (Blue whiting Q4)

The pilot study was carried out during a Dutch observer trip targeting blue whiting in ICES Division 27.6.a (Figure 1) in November 2023 (sampling scheme NL_Obs_P). During the pilot study 42 hauls were deployed, from which 35 hauls were sampled for length. In general, haul duration was long during the trip which enabled the observer to sample more hauls for length than the protocol describes. Age samples from blue whiting were taken from 15 hauls (out of the 35 sampled hauls). Overall, 739 blue whiting individuals were aged for

¹⁴ Note, that for the herring pilot the protocol stated to take an unsorted catch sample of 30-150 kg prior to the sorting process from the first 5 hauls, followed by every second haul (RCG NANS&EA RCG Baltic, 2022; 2023). Following the same analyses for blue whiting and mackerel the protocol was adjusted accordingly.

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NL_Obs_P (Table 7.1). The observed length and age distributions show that age varied between 1 and 8 and a length varied between 12 and 38 cm (Figures 7.2, 7.3).

Ideally, the data collected within the NL_Obs_P pilot study would be compared with blue whiting age samples secured by the regular Dutch or German sampling programmes for the same year*season*area combination. Unfortunately, no comparison is possible as no additional samples were collected in 2023. However, data is available for the same season*area combination for other years; 9 blue whiting age samples originating from ICES Division 27.6.a and the neighbouring ICES Division 27.5.b were collected within the regular Dutch market sampling programme (sampling scheme NL_Market) from 3 quarter 4 in 2017, 2019 and 2022 (Table 7.1, Figure 7.1). As expected, the composition and subsequently length and age distributions are seen to vary from year to year (Figures 7.2, 7.3).

Pilot Study 2024 (Mackerel Q1)

The second pilot study was carried out during a German observer trip targeting mackerel in ICES Divisions 27.6.a and 27.4.a (Figure 7.4) in January 2024 (sampling scheme DE_Obs_P). As this trip was not only conducted for the purpose of the pilot study but needed also to be included in the regular German observer programme, both, the “new” and the regular method were carried within the observer trip. Therefore, more hauls were sampled. During the pilot study 36 hauls were deployed, from which 35 hauls were sampled for length. 937 mackerel were collected for otolith sampling from 17 hauls (out of the 35 sampled hauls). Due to time constraints as a result of conflicting deadlines it was not possible to extract and age the otoliths from all 937 mackerel. Therefore, it was decided to take age samples by length classes (5 otoliths by cm length class). As a result, 272 mackerel individuals were aged for DE_Obs_P (Table 7.2). The observed length and age distributions show that age varied between 1 and 18 with lengths between 21 and 43 cm (Figures 7.5, 7.6).

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The data collected within DE_Obs_P will be compared with mackerel age samples taken from the same fleet for the same year*season*area combination when the samples collected by the regular Dutch sampling programme in quarter I 2024 become available. In the meantime, a comparison was made of the mackerel age samples originating from ICES Divisions 27.4.a and 27.6.a collected within the regular German and Dutch sampling programmes (DE_Obs and NL_Market respectively) in quarter I in 2023 (Table 7.2, Figure 7.4). The length measurements indicate that both sampling programmes sampled the same population (Figure 7.5, upper 2 panels; bars). However, the age distributions indicate slight differences that require further investigation with Dutch sampling data indicating a higher length at age compared to the German data (Figure 7.6).

8.3.3 Conclusions and way forward

The three pilot studies targeting herring (Pilot Study 2022), blue whiting (Pilot Study 2023), both carried out by the Dutch research institute, and mackerel (Pilot Study 2024), carried out by the German institute, indicate the feasibility of executing the developed common harmonized protocol during the observer trips on-board the freezer trawlers. However, the methodology in processing the age samples needs to be further investigated.

So far, it has not been possible to implement a pilot study of the same species*area combination in the same year and quarter conducted by both the Dutch and German sampling programme. The ISSG therefore recommends an additional two pilot studies during the 2nd half of 2024 conducted by both NLD and DEU for the same species*area combination.



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Furthermore, in order to ensure a smooth transition in catch sampling for assessment purposes by the NLD, it is recommended that the NLD market sampling programme executing its current protocol runs simultaneously with the NLD observer programme executing the harmonized protocol for sampling the EU freezer trawler fleet for a substantial period of time.

8.4 Roadmap/follow-up

The following tasks have been identified during the RCG meeting in 2024 for the attention of the ISSG in 2024/25:

1. Further develop the harmonized protocol for sampling the EU freezer trawler fleet
2. Identify, conduct and evaluate a NLD and DEU pilot study for the same species*area combination during the 2nd half of 2024
3. Run the NLD market sampling programme executing its current protocol simultaneously with the NLD observer programme executing the harmonized protocol for sampling the EU freezer trawler fleet during the 2nd half of 2024
4. Develop harmonized raising methodology for conducted sampling of the EU freezer trawler fleet

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References

- RCG NA NS&EA RCG Baltic 2022. Regional Coordination Group North Atlantic, North Sea & Eastern Arctic and Regional Coordination Group Baltic. 2022. Part I Report, 100 pgs. Part II Decisions and Recommendations, 13 pgs. Part III, Intersessional Subgroup (ISSG) 2021-2022 Reports, 159 pgs. (<https://datacollection.jrc.ec.europa.eu/docs/rcg>)
- RCG NANS&EA RCG Baltic 2023. Regional Coordination Group North Atlantic, North Sea & Eastern Arctic and Regional Coordination Group Baltic. 2023. Part I Report, 79 pgs. Part II Decisions and Recommendations, 13 pgs. Part III, Intersessional Subgroup (ISSG) 2021-2022 Reports, 320 pgs. (<https://datacollection.jrc.ec.europa.eu/docs/rcg>)





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Table 8.1: Overview of number of sampled blue whiting trips, number of age samples and number of blue whiting individuals aged by sampling scheme in Q4 in the period 2017-2023 originating from ICES Divisions 27.5.b and 27.6.a. Where NL_Market represents the Dutch market sampling programme and NL_Obs_P represents the Dutch Pilot Study 2023.

Year	Q	Sampling Scheme	# sampled trips	Blue whiting sampling		
				ICES Division	# age samples	# aged fish
2017	4	NL_Market	1	27.5.b	3	75
2018	4	NL_Market	0	-	-	-
2019	4	NL_Market	1	27.5.b; 27.6.a	3	128
2020	4	NL_Market	0	-	-	-
2021	4	NL_Market	1	27.5.b; 27.6.a	3	75
2022	4	NL_Market	0	-	-	-
2023	4	NL_Obs_P	1	27.6.a	15	739

Table 8.2: Overview of number of sampled mackerel trips, number of age samples and number of mackerel individuals aged by sampling scheme in Q1 in the period 2023-2024 originating from ICES Divisions 27.4.a and 27.6.a. Where sampling NL_Market represents the Dutch market sampling programme, DE_Obs represents the German observer programme and DE_Obs_P represents the German Pilot Study 2024.

Year	Q	Sampling Scheme	# sampled trips	Mackerel sampling		
				ICES Division	# age samples	# aged fish
2023	I	NL_Market	2	27.4.a	3	74
2023	I	DE_Obs	1	27.4.a; 27.6.a	6	522
2024	I	DE_Obs_p	1	27.4.a; 27.6.a	17	272



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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

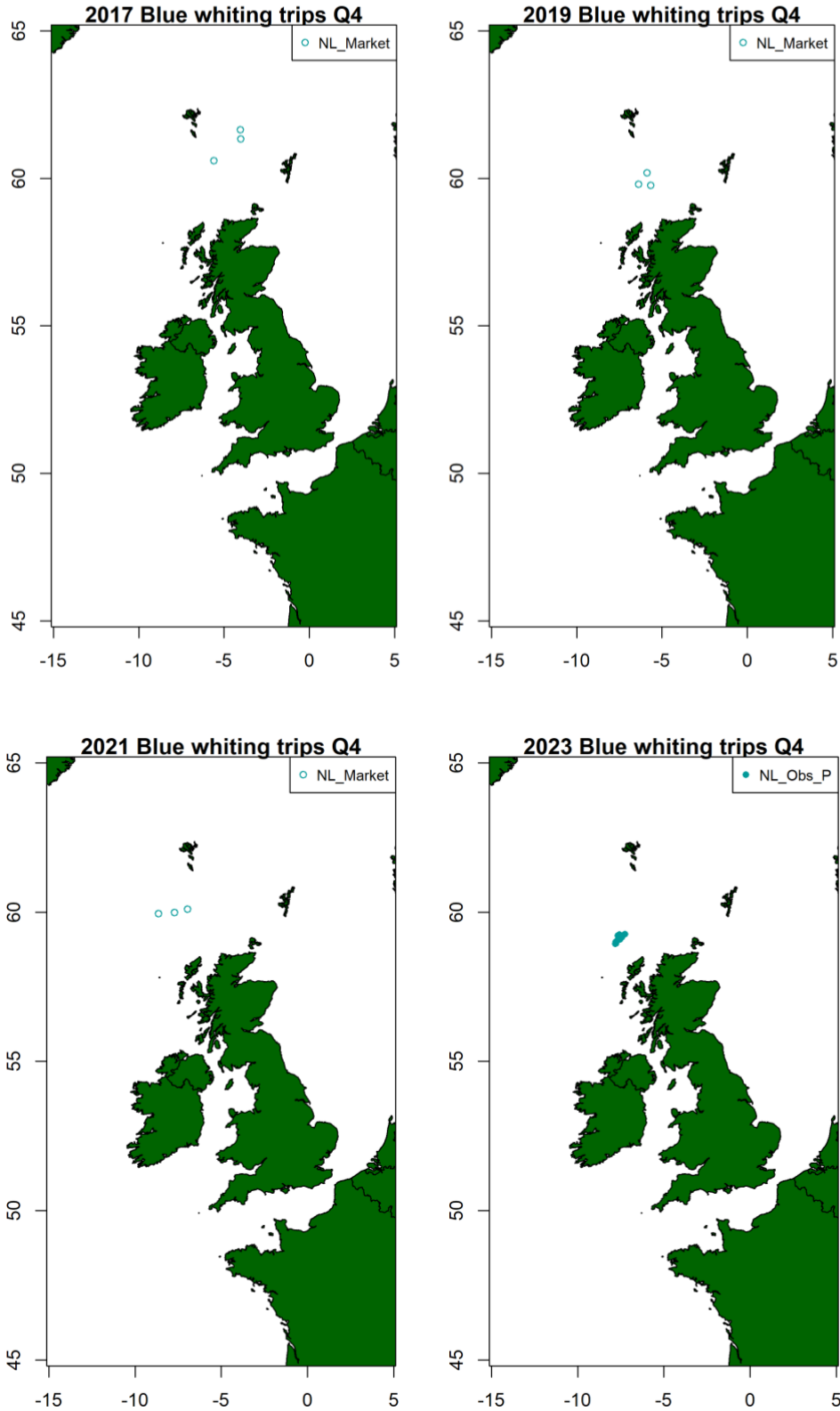


Figure 8.1: Positions of blue whiting samples taken in ICES Divisions 27.5.b and 27.6.a in quarter 4 by year within the Dutch market sampling programme (NL_Market) and the Dutch Pilot Study 2023 (NL_Obs_P).

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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

Relative length frequency Blue whiting Q4 ICES Divisions 27.5.b.1.b and 27.6.a

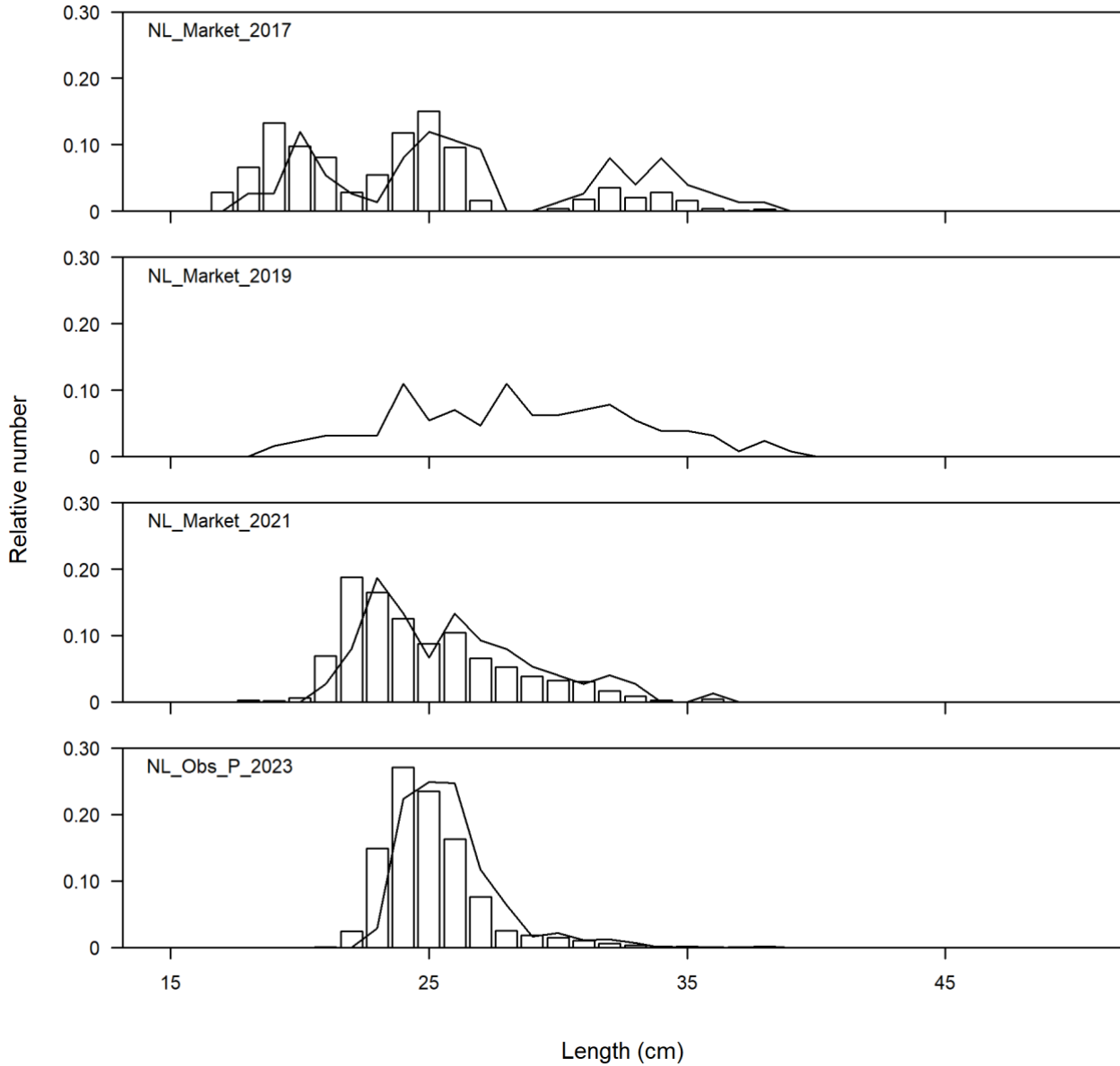


Figure 8.2: Relative number of blue whiting by length (cm) from the length samples (bars) and age samples (lines) taken in ICES Divisions 27.5.b and 27.6.a in quarter 4 by year in the Dutch market sampling programme (NL_Market) and the Dutch Pilot Study 2023 (NL_Obs_P).

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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

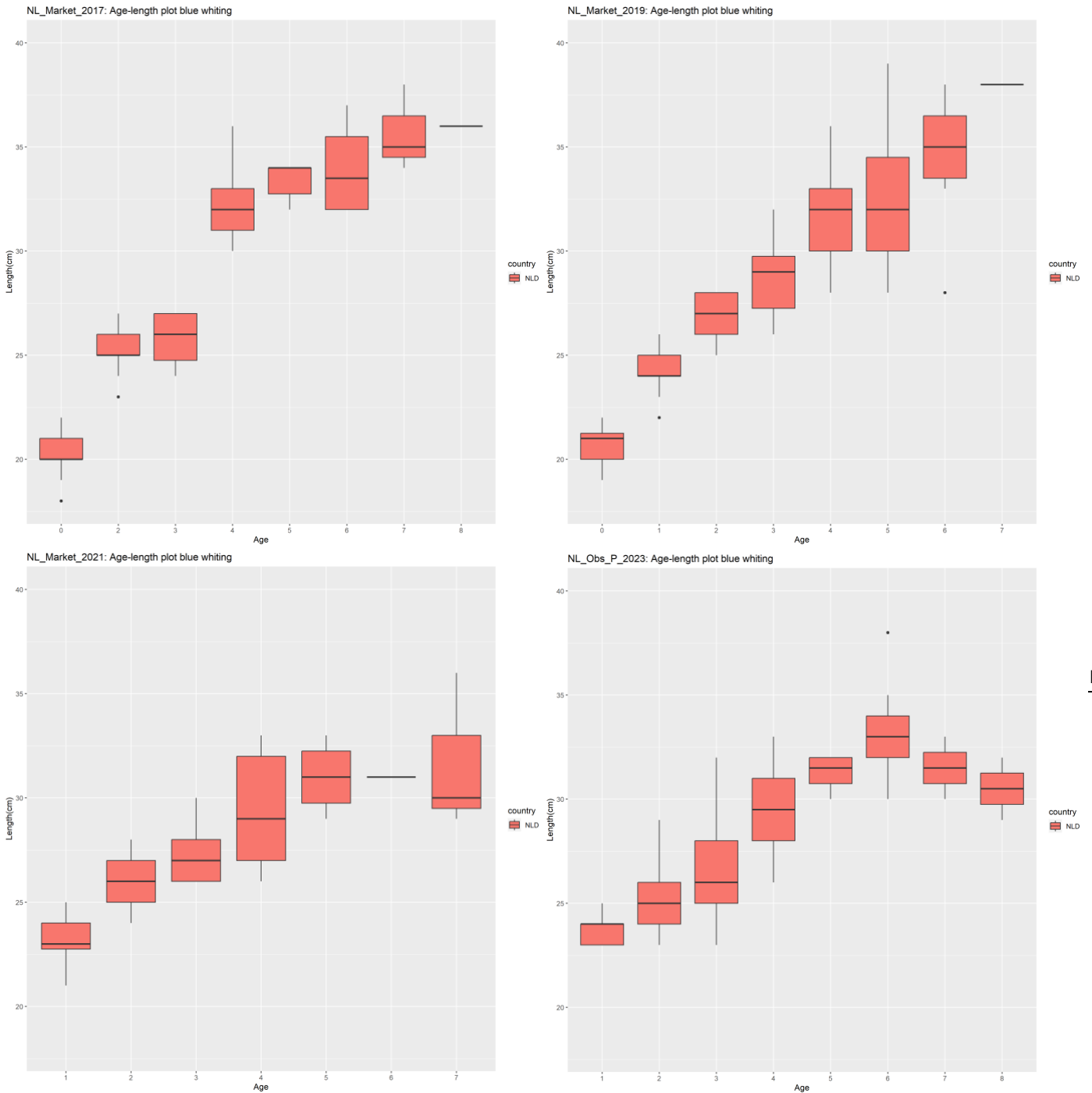


Figure 8.3: Boxplot age-length data of blue whiting taken in ICES Divisions 27.5.b and 27.6.a in quarter 4 in 2017, 2019, 2021 in the Dutch market sampling programme (NL_Market) and in the Dutch Pilot Study 2023 (NL_Obs_P).

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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

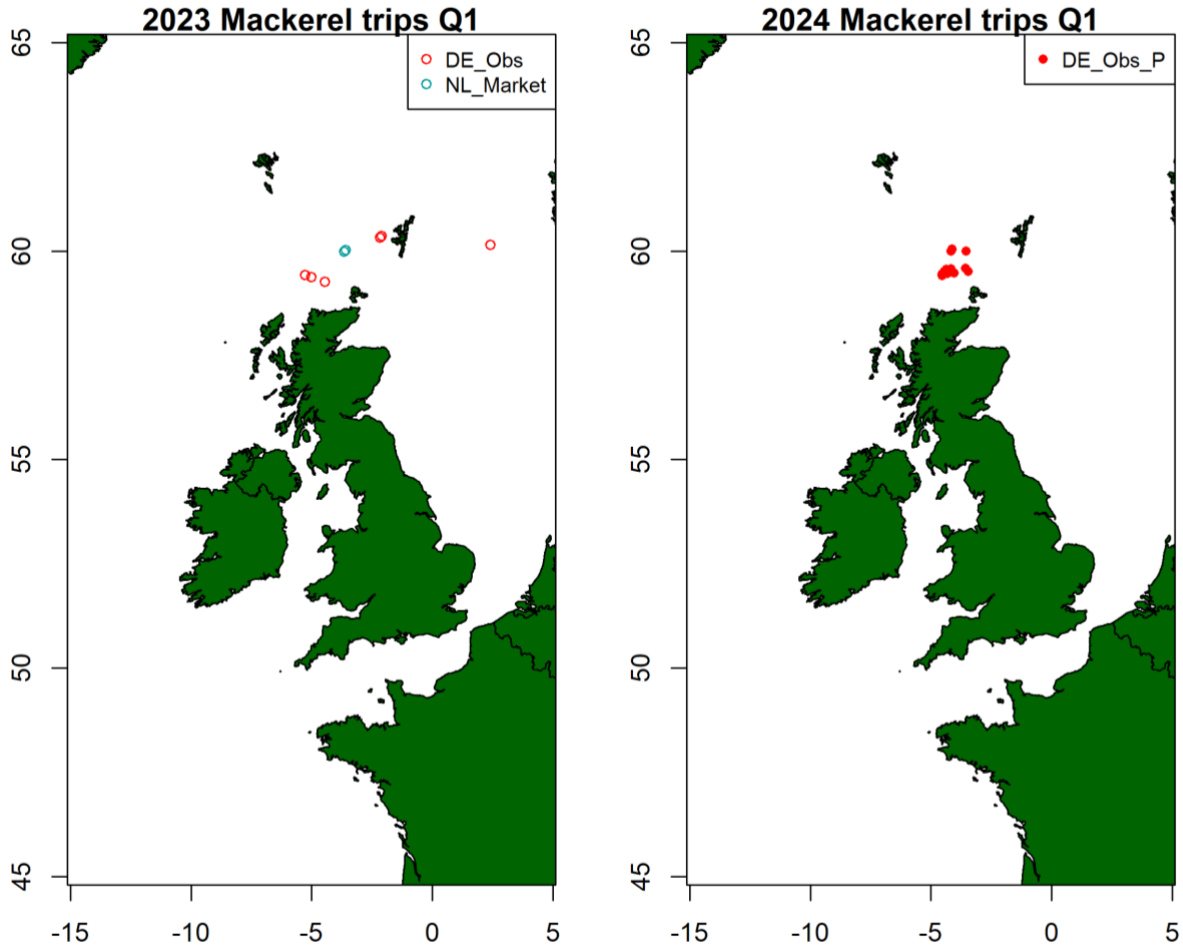


Figure 8.4: Positions of mackerel samples taken in ICES Divisions 27.6.a and 27.4.a in quarter I by year within the Dutch market sampling programme (NL_Market), the German observer programme ((DE_Obs) and the German Pilot Study 2024 (DE_Obs_P).

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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

Relative length frequency Mackerel Q1 ICES Divisions 27.6.a and 27.4.a

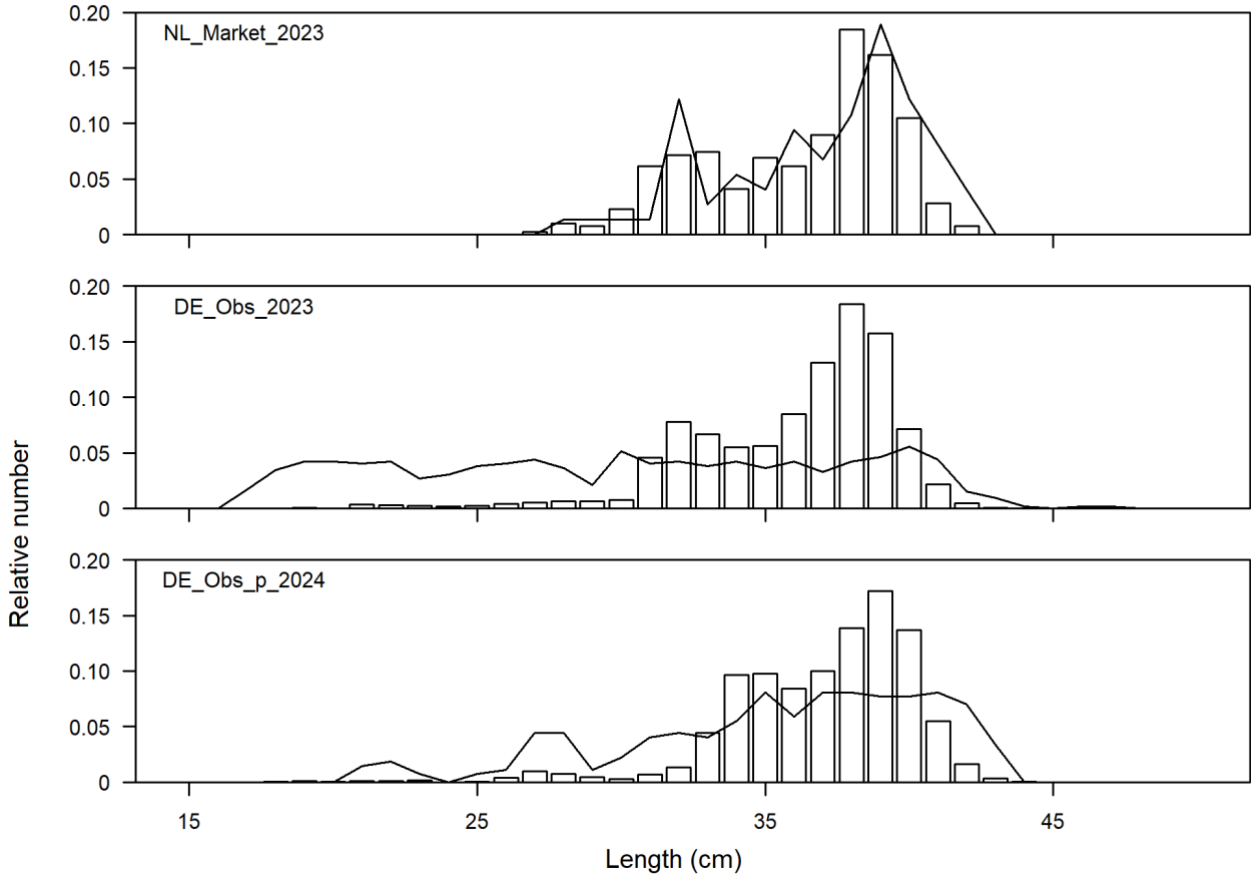


Figure 8.5: Relative number of mackerel observed against length (cm) in the length samples (bars) and age samples (lines) taken in ICES Divisions 27.6.a and 27.4.a in quarter I by year in the Dutch market sampling programme (NL_Market), the German observer programme (DE_Obs) and the German Pilot Study 2024 (DE_Obs_P).



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8. ISSG Case Study Freezer Trawler Fleet Exploiting Pelagic Fisheries in the Northeast Atlantic

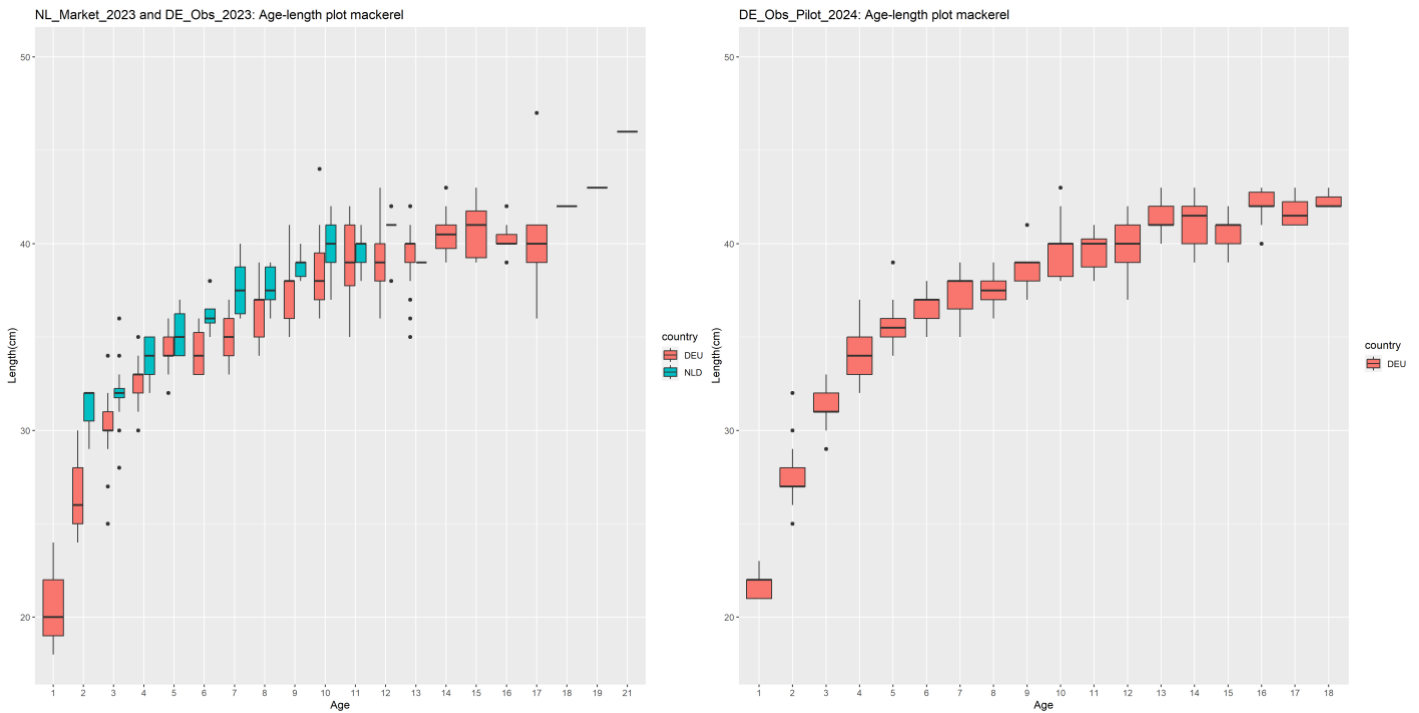


Figure 8.6: Boxplot age-length data of mackerel taken in ICES Divisions 27.6.a and 27.4.a in quarter I in 2023 in the Dutch market sampling programme (NLD) and the German observer programme (DEU), and in the German Pilot Study 2024 (DEU).



9 ISSG Towards a regional sampling plan - Case Study of the trawl fishery in Iberian Waters

9.1 Background

An ISSG was set up in RCG NANSEA 2019 to continue the previous work by projects Fishpi and Fishpi2 towards developing a Regional Sampling Plan for trawl fishery in Iberian waters (see RCG NANSEA reports 2019, 2020, 2021, 2022, 2023 and Fishpi and Fishpi2 reports).

9.2 Workplan

This ISSG was on hold during 2022/2023, and in the RCG report of 2023 the following work plan was suggested for 2023/2024, as well as for the following years:

I. June 2023–May 2024 and June 2024–May 2025 (starting in April 2024):

- update allocation of sampling effort to ports based on recent data from trawl fisheries in the Atlantic Iberian waters
- define the sampling plan to be implemented in the pilot study and prepare changes/additions to contracts

II. June 2025–May 2026 and June 2026–May 2027 (calendar year of 2026):

- implementation of the pilot study

III. June 2026–May 2027 and June 2027–May 2028 (starting in April 2027):

- analysis of the results of the pilot study (data for 2026, available in April 2027).
- define future steps.

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9.3 Progress during 2023/2024

During 2023/2024, the ISSG had one meeting (April 12, 2024) in which the work plan was revisited and adjusted where needed.

The two scenarios (S55 and S35) selected, in previous reports, for the implementing of the pilot study, differ from the currently ongoing national sampling plans in two main aspects: i) both scenarios (S35 and S55) propose a sampling effort per port that differs from what is currently implemented in the national sampling plans; ii) scenario S55 includes sampling of foreign landings (whereas scenario S35 does not include foreign landings, similarly to the national sampling plans).

Task “update allocation of sampling effort to ports based on recent data from trawl fisheries in the Atlantic Iberian waters”:

In the regional sampling plan, the allocation of sampling effort to the ports reflects the regional context. This in contrast with the national sampling plans, as within each of these the allocation of sampling effort to the ports reflects the national context.

Due to lack of the availability of time of the participants in the ISSG, this task was postponed and will be developed in 2024-2025.



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9. ISSG Case Study of the Trawl Fishery in Iberian Waters

Task “define the sampling plan to be implemented in the pilot study and prepare changes/additions to contracts”:

The ISSG report from 2022 explained that “scenarios S35 and S55 from project FishPi2 could not be implemented in all the ports planned. In summary, for 8 of the ports it is feasible to implement the sampling effort proposed in the RSP; but for the other 13 ports there are limitations to the implementation of the sampling effort proposed in the RSP. Limitations from current issues in NSP are expected to be solved in the near future (3 ports); limitations from funding/contracting cannot be solved in the short term (1 port); and operational limitations in the ports cannot be solved regardless of funding/contracting (9 ports).” In 2023-2024, these limitations were re-evaluated, and none are solved or expected to be solved in 2023-2024. These limitations continue to prevent the feasibility of implementation of the scenarios previously selected, and will therefore will need to be re-evaluated in 2024-2025.

Sampling of foreign landings would be one of the main novel aspects achieved with the regional sampling plan, however, as referred in the previous reports, it cannot not be implemented before January 2026 due to the binding conditions set in the contract of IEO with an external company for the implementation of sampling on shore of the national sampling plan. In preparation for the implementation of the pilot study, IEO is implementing an in situ survey simultaneously. Namely, the scientific observers hired within the current national sampling program by the IEO for sampling on shore of landings in Spanish ports of ICES divisions 27.8.c and 27.9.a have been instructed to collect some information on landings from foreign (Portuguese) vessels using bottom otter trawl in these waters. Namely, if a foreign landing is randomly selected for sampling the scientific observer will note it as an observer refusal, and will not perform any sampling, and will ask the vessel crew/captain if they would be willing to accept sampling of those landings. Given that there is no precedent for sampling foreign landings, the objective of this survey is to estimate the number of trips foreign landings likely to be chosen for sampling in a future pilot study, as well as to anticipate possible industry refusals to sampling.

This inquiry is being implemented in 2024 and results will be considered in 2024-2025

9.4 Roadmap/follow-up

In addition to what was proposed in the work plan for 2023-2025 and following years, the need for two additional tasks was proposed, to be developed in 2024-2025:

- analyse results of the survey on foreign landings implemented by IEO in 2024.
- consider and conceptually prepare the inclusion of the data from the regional sampling plan into the RDBES.

I. July 2024-May 2025:

- analyse results of the survey on foreign landings implemented by IEO in 2024.
- update allocation of sampling effort to ports based on recent data from trawl fisheries in the Atlantic Iberian waters
- define the sampling plan to be implemented in the pilot study and prepare changes/additions to contracts
- consider and conceptually prepare the inclusion of the data from the regional sampling plan into the RDBES.



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9. ISSG Case Study of the Trawl Fishery in Iberian Waters

II. June 2025-May 2026 and June 2026-May 2027 (calendar year of 2026):

- implementation of the pilot study

III. June 2026-May 2027 and June 2027-May 2028 (starting in April 2027):

- analysis of the results of the pilot study (data for 2026, available in April 2027).
- define future steps.

9.5 ISSG Participants

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*Participants who attended the meeting on April 12, 2024.

10 ISSG Evaluation of the Data Collected for SSF at EU level

10.1 New control regulation implementation and its impact on the SSF data collection

The approval and subsequent implementation of the new EU Control Regulation (EU, 2023/2842) accepted at the end of 2023, has its importance in the context of data collection for scientific purposes. As agreed during last year's RCG technical meeting, the ISSG SSF, in collaboration with the ICES WGCATCH specific subgroup dedicated to all issues related to SSF data collection, reviewed this European regulation, with the aim of identifying its impact on all aspects of SSF data.

During 2023 WGCATCH meeting, the group engaged in a first discussion on the following issue: “What are the data needs for scientific works considering SSF specificities in regards with the establishment of the new EU Fisheries control regulation (and what will be mandatory in it)”. The group discussed this issue based on what is known at this stage about the new control regulation. A presentation regarding the revised EU Fisheries Control System Regulation was provided.

The initial proposal of this revised regulation was published by the Commission on the 30th of May 2018. Finally, and after many discussions and amendments, a final proposition of the new control regulation was drafted at the end of May 2023, formal approval by the EU was adopted in October 2023, and finally published the 22nd of November 2023. After that, Member States will have up to 4 years to implement the new regulation. The group has been informed (from the RCG meetings) that, in this context, there will be work during the next two years on reviewing the Implementing Act (http://data.europa.eu/eli/reg_impl/2011/404/oj).

Based on the developed document between WGCATCH and ISSG SSF members, the aim is that this document will serve as a basis for the discussions that will take place on the EU Control Regulation in general and its implications during the technical meeting in June.

Principal conclusion, concerning the changes in the new regulation are the following:

- 1) One of the most relevant features is the full digitalization for vessels with e-catch reporting which should be an improvement for data quality and completeness as long as well adapted recording software is developed. After two years of the implementation of this regulation it would become mandatory for vessels with total length between 12-15 meters and after four years of implementation for all vessels below 12 meters. This means that all catch registration documents should become electronic in a period of 2-4 years. Furthermore, WGCATCH and ISSG SSF consider that adapted declarative forms with associated recording software should be preferred for SSF reporting, as logbooks are not well adapted to their specificities.
- 2) WGCATCH and ISSG SSF also consider that the removal of the less 50kg derogation for mandatory declaration is heading in the right direction considering the SSF specificities.
- 3) WGCATCH and ISSG SSF highlight some concerns regarding the calendar for the mandatory implementation of geo-localization (tracking devices) data for SSF which should be implemented in parallel to the full digitalization of catch reporting. In theory, after two years of the implementation of this regulation, vessels with total length between 12-15 meters should have installed a device that allows its geo-localization (the present exemptions in place today for them should be cancelled at this time, 2026) and after four years of implementation should be the case for all vessels below 12 meters.

Nevertheless, Member States can grant derogations for vessels below 9 meters until 2030 in relation to tracking devices (therefore in 2028 it will be mandatory in fact only for 9-12 meters vessels). WGCATCH and ISSG SSF highlighted in its previous works how the innovative/electronic systems (e.g. tracking device) could be a useful tool to improve SSF monitoring and how it could benefit to SSF data quality. This could range from differentiating inactive vs active vessels, among those registered, determining their corresponding fishing effort (i.e., fishing days, number of days at sea, and eventually hours at sea, up to soaking time of passive gears), estimating their fishing gears' dimension or calculating precise spatial information. In this sense, such derogations are considered as an issue and a miss in this regulation in regards with the global objective to improve SSF knowledges.

- 4) WGCATCH and ISSG SSF highlight also same concerns regarding the proposed temporal resolution of geo-localization data, which could be not adapted to the SSF specificities. ICES WKSSFGE02 recommends a high temporal resolution (at least every 1' or 30'') for SSF to estimate adequate fishing effort metrics, especially for passive gears. Regulators must be aware that geo-spatial data with low temporal resolution from SSF fleets will lead to an impossibility to estimate meaningful fishing effort metrics in many cases.
- 5) WGCATCH and ISSG SSF highlight also some concerns regarding data quality assurance considering that adding mandatory declarative data seems to be the preferred option in the new control regulation at this point. As indicated and discussed, declarative data have the benefits of giving access to a lot of information but at the same time present often less data quality control in comparison with a well-managed sampling approach (*with less data but better controlled and followed-up*).
- 6) WGCATCH and ISSG SSF, regarding the information to be provided in the logbooks in the new regulation, highlights the following things: there will be a unique fishing trip identification number, the Common Fleet Register will be the vessel identification number and it will be mandatory to report data regarding sensitive species and the loss of gears. In the case of vessels above 12m, the time of the catches will be reported, and the information will be haul by haul. The transmission in the case of vessels below 12m, will be mandatory before landing occurs.

These two groups will follow up on the whole process of the implementation of this regulation, to see how it can affect the improvement of the knowledge about SSF. It seems quite evident, that at least in 2-4 years, high resolution geospatial data will be available, and this will improve the knowledge of the SSF fishing activity in terms of effort exerted, identification of most important fishing grounds, etc. However, this information will be still quite limited for all vessel below 9 m until 2030, due to the possible derogations mentioned in the paragraph above.

Related to the catches, as the information will be provided electronically instead of paper based, this could speed up the process to access this information. There could be also improvements in the completeness and the quality of the data reported (data quality control should be developed at the same time), especially for MS that currently only have sales notes available to describe fisheries for vessels without logbooks.

II ISSG Identification of case studies for ETP species bycatch monitoring

II.1 Background

Interactions between fisheries and non-target species such as protected, endangered and threatened species (ETP), including cetaceans, seabirds, turtles, some elasmobranchs, and rare fish species, can be frequent and widespread. These interactions may lead to levels of incidental bycatch and mortality which, in some cases, could pose a threat to species or population viability. Such interactions can also have an adverse effect on fishing productivity, profitability and crew safety.

Under the previous Data Collection Framework (Council regulation (EC) No. 199/2008), there were no binding obligations for Member States (MS) to collect data on species other than commercial fish species and certain invertebrate species. When the current DCF (Regulation (EU) 2017/1004) came into force in 2017, collection of data on ETP bycatch when scientific observers are onboard became mandatory. Therefore, MS have begun to implement new data collection protocols in their at-sea observer programmes following guidelines developed, among others, by ICES expert Working Groups (WGBYC, WGCATCH) to improve the collection and quality of data on ETP bycatch. However, sampling designs remain focused primarily on active gears being disproportionately higher the coverage in active than passive gears. In addition, under several EU instruments (Regulation 2021/1167, Regulation 2019/1241 on technical measures, Habitats Directive 92/43/EEC, and Birds Directive 2009/147/EC) MS are also required to monitor and report on bycatch of protected species, including cetaceans, seabirds and marine turtles.

The overall aim for RCG NA NS&EA and the RCG Baltic is to review the status of current issues, achievements and developments of regional coordination and identify future needs in line with DCF requirements and the wider European environmental monitoring and management. With this aim in mind several ISSG were created trying to cover different topics related to different needs in line with the DCF requirements, including ETP bycatch issues.

II.2 Work-plan

ToRs and work plan (specific tasks) for 2023/2024 were:

Task 1: Forum/network role: Coordination and communication with main end-users on ETP data collection.

Task 2: Spring physical meeting organization.

a. Short and mid-term plan for ISSG ETP based on 2023 initiatives outputs.

Task 3: Control Regulation follow up.

Task 4: Inclusion of ETP sampling programmes under the Regional Work Plans

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II. ISSG Identification of case studies for ETP species Bycatch Monitoring

II.3 Progress during 2023/2024

The main outcomes are based on the April 18th 2024 meeting among ISSG members:

Task 1:

- There is a close informal coordination and communication with main ICES WGs dealing with ETP issues, as many of the ISSG participants are members of those groups.
- There is an informal coordination with large ongoing European projects (e.g. Life - CIBBRINA, Horizon - MarineBeacon, REDUCE) for the same reasons.
- Improvements in coordination are needed with other end users as HELCOM, OSPAR, where this coordination and communication is still a bit limited.

Task 2:

- The spring physical meeting was not organized because it was very important to have the reports from WKPETSAMP2 (ICES, 2024a) and WKPETSAMP 3 (ICES, 2024b) and the resulting Advice report from ICES (ICES, 2024c) published first. These reports were published by ICES the 8th of April and also shared among the ISSG members. The outcomes of these reports are very important for this ISSG, and include some recommendations for the RCGs.
- The decision trees developed by WKPETSAMP3 could be relevant to decisions regarding sampling of ETP species.
- The ISSG considered the recent outcome from WGBYC (ICES, 2023a) and from the resulting Advice report from ICES (ICES, 2023b), namely an identification of high-risk fisheries.

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Task 3:

- Main potential improvements based on the EU Control Regulation were mentioned, and concern improvements in the fishing effort information due to the mandatory installation of geospatial highresolution data devices.
- Mandatory Electronic Monitoring in different fisheries would also provide better data if these systems are installed in ETP high risk fisheries.
- The different implementation phases mentioned in the CR need to be considered.

Task 4:

- Some ETP sampling programmes were included as case studies under the RCG NANSEA the Regional Work Plan document approved by the STECF, namely case studies on the Baltic harbour porpoise and the Bay of Biscay common dolphin.
- This work will be carried out in collaboration with the ISSG RWP group.

In addition to these points, the Commission provided information from one of its meetings with the National Correspondents (NC), namely that some Member States are carrying out specific monitoring programmes on bycatch of ETP species, in addition to the DCF sampling programmes. One possible means for MS to make this known to the public domain and to the Commission, is to include a description of such additional

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II. ISSG Identification of case studies for ETP species Bycatch Monitoring

programmes in the National Work Plans to provide a complete picture of monitoring at national levels, within and beyond the DCF.

ICES ETP list of species is going to be also updated under a specific WK that will be organized during 2024.

ICES will update the list of sensitive fish species through a workshop in October 2024, followed by an Advice Drafting Group and agreement by the ICES Advisory Council. The list of mammals and birds will be reviewed/updated by WGMME and JWGBIRD. No dedicated workshop will be organised for these. A list of turtles will be added as proposed by WGBYC 2023 and has already been approved by the ICES Advisory Council. However, it was highlighted that although this list is relevant, a prioritization of the species to be sampled is essential, as the list is long. A prioritization would also facilitate the design of the sampling programmes to be carried out. For this prioritization issue the ISSG considered it essential to have the Commission involved both with DGs, DGMARE and DGENV.

The improvement of the identification of different ETP functional groups was highlighted, in addition to a better knowledge about the biology of the species. WGBYC, WGMME, and JWGBIRD will be working on this the following years. This can be relevant in the context of identifying high risk fisheries assuming that these functional groups have a similar behavior related to gear specific bycatch.

The importance of having standardized protocols was also considered as essential by the ISSG. It was mentioned that Life CIBBRINA and Working Group on Technology Integration of Fisheries-dependent Data (WGTIFD) are working on it, whilst also taking into account work previously done (e.g. by WGATCH and WGBYC), so the plan is to ask for feedback and to avoid double work and duplication of effort.

II.4 Future actions

For the short-term, it was decided to develop a document where the pieces of information that have been acquired over the last few years by ICES WGs, EU projects etc. (Annex I) and which are essential for the improvement of sampling of these species will be explained. It was not possible to have the document ready with sufficient time in advance of the RCG Technical Meeting of June 2024 and to share it with all NCs prior to the meeting. Alternatively, the document is included under Annex I in this report to be discussed during the RCG technical meeting in June 2024.

For the short-term, it was decided to organize a meeting with DGENV and DGMARE to discuss this document and other issues, such as the Marine Action Plan. It was not possible to have this meeting before the RCG Technical Meeting of June 2024. Alternatively, the COM will participate in some of the sessions of the RCG Technical Meeting and it is possible that there will be opportunity for such a discussion. In addition, it is considered relevant to organize such a meeting after the RCG technical meeting.

ISSG RDB, effort and sampling overviews chairs have been contacted to provide the information about how different metiers are sampled and their coverage by the at sea sampling programmes under the DCF. This will allow cross-referencing this information with the metiers that are considered to be high-bycatch-risk metiers and how they are sampled.

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II. ISSG Identification of case studies for ETP species Bycatch Monitoring

II.5 SG Participants

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12 ISSG Diadromous Fishes

12.1 Background

Monitoring and reporting of marine fisheries catches for diadromous species (Atlantic salmon, *Salmo salar*, sea trout, *Salmo trutta*, European eel, *Anguilla anguilla*) was included under DCF in 2001 (EU 2001). Requirements for fisheries catch data collection however varied by region. Over time, changes and additions in the fisheries data collection requirements were applied, for instance, the inclusion of data collection of recreational fisheries catches for some species (e.g. sea trout in the Baltic Sea; EU 2016). Collection of biological data of diadromous species in inland waters was introduced at a later stage of the DCF. Despite that, some countries in the Baltic Sea region have funded monitoring of salmon in rivers under DCF and included data collection and projects in their national work plans already in the early years of the DCF. Changes to the EU Data Collection Framework introduced requirements to collect data on eel and salmon in 2007 and 2008, respectively. Sea trout monitoring in freshwater was added later. The data requested for these species at that time did however not meet the needs of national and international assessments in some cases. As a result, data specifics for eel and salmon data collection were postulated during the designated ICES Workshop on Eel and Salmon DCF Data (WKESDCF) in 2012 (ICES 2012). These were meant to:

- determine data requirements to support obligations for international eel and salmon assessment
- describe national monitoring and survey programmes required to meet these data requirements
- consider options for integrating salmon and eel surveys and monitoring

Outcomes from the 2012 workshop still constitute the basics of mandatory data collection for diadromous species under the current DCF/EUMAP. Some parts of these data, however, are currently not used in international assessments for these species. Due to the complex life cycles of diadromous species, data requirements for stock assessments are often different and rather unconventional compared to assessment data needs of most other (shared) marine stocks covered under DCF. As a result, data collection and assessment models for diadromous species comprises data for different life history stages in marine, transitional and freshwater environments. It is important to note though, that assessment models and data requirements for diadromous fish species may differ according to species and region and are still being actively developed for improvements. While European eel is present as one panmictic stock over all relevant regions (NANSEA, Baltic, Mediterranean and Black Sea), salmon and sea trout occur in hundreds of individual river stocks in NANSEA and Baltic regions. Changes in data needs arising from new developments in stock assessment methodologies by ICES end-users, but also from adjustments of DCF Multi-Annual Programmes may demand the ISSG Diadromous Fishes to clarify, review, and identify potential needs for improvement in data collection for the respective species.

The aim of the ISSG Diadromous Fishes is to facilitate the best possible collection and use of data on diadromous fish collected under the DCF. The ISSG manages specific areas and coordinates tasks to develop improved data collection in line with the regional coordination of DCF. The group provides a platform for exchange, discussion and feedback between MS, RCG's and end-users. This feedback loop is considered crucial for the continuous improvement of collection and use of management-relevant data for diadromous species. Besides fulfilling national end-user needs, the group seeks to harmonise and streamline data collection towards the data needs of international stock assessments by ICES expert groups. ICES EGs, namely WGNAS (Working Group on North Atlantic Salmon), WGBAST (Assessment Working Group on Baltic Salmon and Trout) and WGEEL (Joint EIFAAC/ICES/GFCM Working Group on Eels) are currently considered the most important international end-users of DCF Data on diadromous fish species.



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12. ISSG Diadromous Species

Current Co-Chairs of the ISSG Diadromous Fishes are Josefin Sundin (Swedish University of Agricultural Sciences, Department of Aquatic Resources - SLU Aqua, Sweden), Simon Weltersbach (Thünen Institute of Baltic Sea Fisheries, Germany) and Marko Freese (Thünen Institute of Fisheries Ecology, Germany; resigning end of 2024).

12.2 Work-plan

ToRs and work plan (specific tasks) for 2023/2024:

- I. Further strengthen a regular and direct exchange with ICES EGs and GFCM responsible experts to recognize potentially needs for improvements in data collection for assessments under DCF. This could be initiated by inclusion of DCF- matters as permanent ToR for relevant ICES EGs such as WGNAS, WGBAST and WGEEL.
- II. Discuss and promote the development of Regional Work Plans for diadromous species in applicable regions to further harmonize data collection.
- III. Improve and harmonize data collection methods for recreational fisheries, electrofishing and eel fishing effort data by fostering exchange and collaboration between relevant ICES EGs such as WGRFS, WGBAST, WGEEL, WGNAS and WGTRUTTA.
- IV. Motivate diadromous end-user groups and respective experts to collaborate with RBDES (and maybe DATRAS) core group to find a central storage solution for DCF mandatory data collected for diadromous species (currently, partial data for diadromous fishes is stored in RDBES).

Implement outcomes and recommendations in mandatory data collection that may result from ICES WGEEL & WGNAS modelling developments, ICES EG annual meetings as well as GFCM eel project & other information from relevant workshops and projects.

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12.3 Progress during 2023/2024

The ISSG Diadromous Fishes held its annual meeting for 2023 in May 16-17, 2023 (virtually) with 24 experts from 15 different countries. The 2024 meeting was held alongside the RCG NANSEA and Baltic technical meeting in Bremerhaven, Germany at the Thünen Institute of Sea Fisheries, as a hybrid meeting, in June 11-12, 2024, with 22 experts from 10 different countries. During the two meetings, the group discussed several issues and topics associated with diadromous fish data collection that were raised by participating experts or that were derived from RCG-related work and ICES EG workshops and meetings. Data used in assessments, end-user needs and data storage on ICES servers as well as opportunities for regional work plans were topics of high priority.

Meeting in 2023: Presentations held by ICES end-users WGNAS, WGEEL, WGBAST and the GFCM eel project gave updates on their current state of play as well as informal feedback on data needs in current assessments. Additionally, a presentation on the structure and capabilities of the ICES-hosted RDBES data storage system was held in order to find solutions for central storage of DCF-collected data for diadromous species. WGBAST (Assessment Working Group on Baltic Salmon and Trout) reported no urgent updates or issues. WGNAS (Working Group on North Atlantic Salmon) presented background information on the new Life Cycle Model (LCM) development for North Atlantic salmon, which currently undergoes a benchmark process until the end of 2023 (ICES 2024). This model tracks the abundance of fish through time and life stages from eggs to adults that return to spawn in their homewaters after one or two winters spent at sea for all stock units (SU) in northern Europe, southern Europe and North America (total 25 SU) and can be officially used for assessment, multiple years forecast and catch advice in 2024 (WGNAS 2024, full assessment year). WGEEL (Joint EIFAAC/ICES/GFCM Working Group on Eels) gave an update on the current stock advice and stock assessment approaches and presented a glimpse into possible future assessment





methodologies. Also, an update was given regarding current data exploration analyses of individual and group metrics, collected in line with DCF. WGEEL is still in the process to develop an assessment model for the eel stock with additional input parameters to the currently used recruitment time-series. For this, outcomes from SUDOANG but also the Workshop of future eel advice (WKFEA, ICES 2021) propose a shift to a spatial and thus more holistic stock assessment model for the European eel, which would be able to incorporate abundance and density data of also later continental life stages. This offers opportunities to cope with spatial and regional differences in fishing regimes and productivity but also fish-quality data and is thus able to provide estimates on the stock at both, the EMU (EU) and whole stock level (ICES).

Meeting in 2024: During the two-day hybrid annual meeting in June 2024, an introductory presentation was held to the participating members (by Marko Freese) on the role of ISSG DIAD and its tasks within DCF, on ICES data calls, data transmission issues, and the current status of how diadromous data is supposed to be stored. The EMFAF funded DIASPARA project was presented (by Jan Dag Pohlmann), see summary below. Information on the current status of Regional Work Plans for diadromous fishes was presented (by Josefin Sundin) and members were appointed to lead the work for RWP's for eel, salmon, and sea trout, respectively, for 2028-2030. An update on recreational fisheries data collection for diadromous species and how updates to the fisheries control regulation applies to recreational fisheries was given (by Harry Strehlow). A question regarding sampling of genetic data in line with DCF was brought forward to ISSG Diad, which can currently be done by referring to the genetic test study in the 2025-2027 RWP's.

DIASPARA, project summary: To enable the necessary steps to continue the development of the above-mentioned models, assess data sources and initiate the respective infrastructure, members of WGEEL, WGNAS and the ISSG Diadromous Fishes developed and submitted the recently approved DIASPARA project (EMFAF-funded). DIASPARA aims at enhancing the scientific advice provided for the European Common Fishery Policy (CFP), specifically focusing on the management of diadromous species such as Atlantic salmon, trout and European eel. The key objectives of DIASPARA include improving the collection and utilization of biological and anthropogenic impact data, enhancing methodologies for data collection and management, and supporting the development of high-quality scientific advice tailored to regional contexts. The project, in collaboration with the ISSG Diadromous Fishes, is meant to produce recommendations to enhance the DCF and Regional Workplans.

Databases: The subject of centrally hosting data collected in line with DCF on the infrastructure of ICES databases (e.g. RDBES, DATRAS, RDBFIS etc...) has been discussed within the ISSG Diadromous Fishes continuously, and it has been discussed between ISSG Diadromous Fishes and the respective ICES end-users. RDBES is, in general, not adapted to store data on diadromous species, but some developments have been made to include salmon and sea trout data in the landings table. New categories such as "Freshwater name", "Fishing area category" and other metrics have been added to accommodate the needs for salmon and sea trout. However, in order to store all relevant eel, salmon and sea trout data on RDBES, additional adaptations (such as creating new tables and hierarchies) will be needed, which takes time. WGNAS and WGEEL have developed and currently use own specific databases, that host data beyond DCF-collected data, for their assessment needs. Regarding WGEEL, it was discussed with the end-user, the RCG NANSEA & BALTIC and within the liaison meeting that, due to the specificities of the eel data and also the existence of a functioning database, it will be sufficient to host this solution on ICES servers, as long as accessibility for member states is granted. For eel specifically, RDBES is an ongoing issue for a portion of the landings data because a large fraction of the commercial eel fishery is conducted in inland waters and RDBES does not yet have all the capabilities to capture the additional information on eel landings in inland waters. However, WGEEL is in contact with ICES and actively working on a solution.



Include DCF data collection as recurring TOR for ICES EGs annual meetings: Given the current developments and expected changes in modelling approaches following WGNAS's new Life Cycle model, the efforts of WGEEL to create a stock-wide spatial model, as well as outcomes from several project findings in eel and salmon management (e.g.: Sudoang, WKFEA roadmap, GFCM eel project, DIASPARA etc.), ISSG Diadromous Fishes feels that it would be important to receive direct official feedback from the end-users on a regular basis. The purpose of such feedback is to ensure that the mandatory data collection in the DCF and the definitions of data contained therein meet the current data requirements for assessment of the respective species. One way to ensure this would be to include DCF data collection as a recurring TOR for the ICES EGs annual meetings and reports. This would ensure a steady and regular feedback loop between the DCF and the end-users and allow timely and efficient adaptations when necessary. A problem that arose during consultation of the ICES EGs, however, was that ICES EGs cannot directly provide official feedback to ISSGs, as they have strict rules of procedure and only take tasks from ACOM or their respective client (e.g. NASCO) and / or their Pan-European member structure (WGNAS & WGEEL). ISSG Diadromous Fishes thus proposes RCGs to acknowledge this issue and consider the option to have the EGs add DCF to their generic TORs or other strategies.

12.4 Roadmap/follow-up

The work plan for 2024/2025 builds on the previous work and ToRs previous one, and will hence follow-up of the work done in 2023-2024.

- Work towards strengthening direct exchange with ICES EGs regarding data needs and data use (by adding DCF matters as reoccurring ToR in relevant ICES EG's, see below).
- Work towards better inclusion of MED/BS region in ISSG tasks (coordination/harmonization of DCRF, DCF, GFCM). As a first step, this could be achieved by having relevant MED/BS region representatives attending the ISSG Diadromous Fishes meeting.
- Draft Regional Work Plans (RWPs as an underlying "backbone" of national work plans) for better harmonization in diadromous data collection (WGNAS, WGBAST, and WGEEL). Members have been appointed to lead the work for RWP's for eel, salmon, and sea trout, respectively, for 2028-2030, to achieve this goal.
- RBDES and databases – continued discussion and information on updates.
- Improve recreational fisheries data collection for diadromous species (especially eels) in different regions in cooperation with WGEEL, WGRFS & ISSG Recreational Fisheries. Will be achieved by using outcome from a questionnaire sent out by ISSG Diadromous Fishes to members of WGRFS.
- Use outcomes from the DIASPARA project to improve DCF data collection, RWP work, etc.

One hybrid meeting is planned to be held during the first half of 2025 to progress with the abovementioned tasks.

For RCG to discuss:

ICES EGs cannot directly provide official feedback to ISSGs, as they have strict rules of procedure and only take tasks from ACOM or their respective clients (e.g. NASCO).

- ISSG Diadromous Fishes proposes RCG to consider ways to add DCF to the generic ToRs of relevant ICES EGs.

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13 ISSG Marine Recreational Fisheries

13.1 Background

Recreational fisheries data is collected by individual Member States (MS) according to the Basic Regulation (EU) No 1380/2013 and the multiannual data collection framework (EU) 2016/1251. However, there is no standardization between countries and in general there is no one-size fits all approach due to the diverse nature of the sector and cultural differences. Challenges in recreational fisheries data collection are data gaps (no data collected) mostly due to lacking MS commitment, periodicity of surveys (no time series), and single instead of multispecies surveys. Also often lacking is economic and social data to evaluate the sectoral contribution.

The intersessional subgroup recreational fisheries (ISSG Recreational Fisheries) is a pan regional group focusing on the coordination of data collection and advice for regional work plans for marine recreational fisheries (MRF). This includes evaluating end users' needs for MRF data collection, coordinating national surveys of MRF, and defining potential thresholds. Although the current regulation has a pre-defined list of species per region, this is not sufficient as there are a number of species target by MRF that are not on the list. However, other species may be determined by region based on end-user needs and this is where ISSG Recreational Fisheries can make an important contribution. ISSG Recreational Fisheries aims to harmonize recreational fisheries data collection particularly on a regional level. Another important task of the ISSG Recreational Fisheries is to liaise with RCG LP, RCG Med & BS, ICCAT and RCG ECON as MRF is an integral part of these regions and the thematic areas covered by these groups.

For this subgroup to work properly, it is needed to ensure that the right people are involved, including experts from WGRFS, DCF, and RCG ECON.

Seven experts from six countries attended the group's last meeting (10.06.2024).

The group is chaired by Harry V. Strehlow (DEU).

13.2 Work-plan

ToRs and work plan (specific tasks) for 2023/2024.

1. Develop Regional Work Plans
2. Control Regulation 2023/2842 follow up: Regulation impact on recreational fisheries data collection
3. RDBES Core group support in the development of the RDBES to incorporate recreational fisheries data
4. WKRFSA Outcome: Incorporation of recreational fisheries data in the assessment working groups

13.3 Progress during 2023/2024

The introduction of the new Control Regulation was continuously accompanied by several meetings with the European Commission throughout 2023/24. Outreach to RCG Med & BS and RCG LP was realized participating in both of their meetings and presenting the role of ISSG Recreational Fisheries in June 2023. More work on and exchange of information concerning the new Control Regulation, including recreational fisheries data in stock assessments and progress on the RDBES was done during the WGRFS meeting in June

2024. The annual meeting of ISSG Recreational fisheries took place on 10.06.2024 online. The main outcomes and topics addressed were:

Regional Work Plans

Up to now only candidate regional work plans (RWPs) were identified, e.g. western Baltic cod, Baltic salmon, North Sea cod, pollack, northern sea bass, blue marlin, bluefin tuna, bigeye tuna, albacore, yellowfin tuna, blackspot seabream, southern seabass, white seabream, red porgy, thornback ray, dusky grouper, Mediterranean parrot fish. Although the RWP for western Baltic cod – as this is the stock with the longest commitment and coordination of MRF data collection – has been decided there has been no work on producing such a table. In general, there is no formal agreement for this stock but data collection requirements and raising procedures are agreed between DEU, DNK and SWE. Some of this is documented in a working document of the WKBALTCOD report. It was agreed at the meeting to work on the RWP intersessional. ISSG Recreational Fisheries discussed how ‘sharks and rays’ could be included in RWPs also with the idea if a RWP ‘sharks and rays’ should be created. In the discussion on RWPs, the question was also raised whether the ISSG Recreational Fisheries could propose pilot studies and whether the RCGs would actually have the legitimacy to endorse them.

Control Regulation

The new Control Regulation (2023/2842) that came into force on 9th of January 2024 has several major changes impacting MRF data collection. This is the mandatory registration for sea anglers and the mandatory electronic documentation and daily reporting of recreational catches from 10.01.2026. Further MS are asked to specify the survey methods used within the EUMAP and to report this data to the Commission for the previous year. However, there are limitations to the mandatory registration and reporting of data. Only those fishers should register that are fishing for species subject to Union conservation measures that apply specifically to recreational fishing (quotas, catch limits and daily catches), i.e. Baltic salmon, western Baltic cod, sea bass IVa; pollack, bluefin tuna etc. Similarly, only catches for the species mentioned above shall be subject to mandatory collection and reporting. There are several options for implementation of the electronic catch reporting: (1) commercial solutions through commercial angling apps, (2) a MS solution through the development of a national system or (3) an EU solution through the use of an EU angling app. Data are stored in an EU database with a MS side containing the raw data for MS use and quality control, and an EU side where MS upload the aggregated data.

There are several opportunities through the new Control Regulation:

- (1) it offers a ‘window of opportunity’ as conventional data collection methods have reached their limits and participation rates in national surveys are dropping,
- (2) if you implement a bottom-up Citizens Science approach integrating the MRF sector in data collection, participation and empowerment in fisheries management can be strengthened,
- (3) you would have more and better data on recreational fisheries covering the social, economic and biological dimension,
- (4) if you do it right and communicate the requirements and expectations at eye level, you can increase acceptance and encourage anglers to participate, and
- (5) ultimately you would have the opportunity to strengthen environmental stewardship and improve fisheries management through changing norms and behaviour.

There are also many threats and challenges associated with the requirements of the new Control Regulation:

- (1) the focus on minimum data collection requirements leads to poor data quality,
- (2) due to a focus on few mandatory species, there will only be incomplete registries of sea anglers (instead of full registries of fishers from which a sampling frame could be created, and panel surveys designed in a cost-effective manner),
- (3) the various options for implementation lead to a fragmentation of data,
- (4) due to the top-down approach and the lack of coordinated communication of response burdens, the participation and involvement of anglers in data collection will deteriorate,
- (5) more data gaps due to MS relying solely on electronic catch reporting,
- (6) empowerment in management is weakened,
- (7) a declining compliance through the rejection of top-down regulations, and
- (8) a major threat to the continued funding of EUMAP recreational fisheries data collection.

There are several recommendations for action concerning the implementation process of the new Control Regulation. The Commission needs to: (1) ensure that the regulatory frameworks (Control Regulation & Data Collection Framework & European Fisheries and Aquaculture Statistic Regulation) complement each other and provide better data, (2) explicitly recognize that incomplete registration of sea anglers is not sensible & catches should be recorded immediately after catch, (3) ensure that alternative communication channels and formats are available for the involvement of recreational fisheries experts through the WGRFS/EAA, and (4) ensure the future quality of data on recreational fisheries by securing that MS' national work plans (NWP) are critically reviewed by STECF to check whether there are recreational fisheries surveys – otherwise the NWP will be rejected.

The members of ISSG Recreational Fisheries and MS in general also have tasks they are responsible for: (1) the lobbying of the Commission to influence the text of the implementing regulation, (2) the lobbying of national ministries to influence the content of the implementing regulations (such as ensuring the full registration of all sea anglers), (3) the initiation of angler awareness campaigns (communication and transparency offensive) to draw attention to the upcoming requirements of mandatory data collection, and (4) the communication of threats to national ministries and control agencies.

In the discussion on limiting the reporting obligation to certain species, i.e. those for which MRF has a significant impact on the stock and for which fishing opportunities are fixed or which fall under a multiannual plan or which are subject to the landing obligation, the question was raised whether Baltic Sea trout fall under the landing obligation.

Workshop on Recreational Fisheries in Stock Assessments

The Workshop on Recreational Fisheries in Stock Assessments (WKRFS) aimed to establish a process for integrating recreational fisheries (RF) data into stock assessments. The workshop addressed three questions: identifying obstacles to RF inclusion, creating a decision tree for RF data inclusion and reconstruction, and establishing criteria based on data quality and catch quantity. A main outcome of the workshop was the creation of a species list for the different sea basins containing species to be prioritized both for data collection and use of data in the stock assessment framework. The species list is currently circulated within WGRFS and will be finalized the end of 2024. This species list will also be made available to the Commission for the

consideration of species in the Control Regulation after 01.01.20230. This list could also be used to complement the species list in the EUMAP for which data should be collected.

RDBES

The Regional Database and Estimation System (RDBES) has seen little progress so far concerning the hosting of recreational data. The new RDBES roadmap foresees to include recreational fisheries data by the end of 2025 so members of ISSG Recreational Fisheries should be prepared for the possibility of specific requests being made. Also, the core group of RDBES is always seeking new members to support their work. The members of ISSG Recreational Fisheries wondered if the data collected by means of mandatory electronic catch reporting under the Control Regulation is going to be uploaded to RDBES.

EUMAP

The European Multiannual Plan (EUMAP) is the data collection mechanism for collecting recreational fisheries data in Europe. The current regulations explicitly highlights that in general, multispecies data should be collected and in accordance with end-user needs. Where otherwise not further specified, MS shall collect data for a minimum set of species in different sea regions. As multispecies surveys are still not conducted by MS on a regular basis the available data is often incomplete due to the focus on a few mandatory species. This is currently the case in the Baltic Sea, where German recreational data on plaice catches in the Baltic Sea were submitted to the plaice benchmark for inclusion in the assessment and were judged to be a necessary and useful addition. Data requests to Sweden and Denmark revealed that no plaice data are available because these are currently not collected. ISSG Recreational Fisheries is therefore recommending to the RCG Baltic to include plaice as mandatory species for recreational fisheries data collection.

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Outreach to other groups

The ISSG Recreational Fisheries has successfully reached out to the WGRFS, RCG Med & BS, the RCG LP and the ISSG Diadromous. Outreach to RCG ECON and ICAT still needs to be established. It was mentioned that particularly the species list developed in WKRFSA would be an important issue to flag to the RCG LP and RCG Med & BS.

Chairmanship

Eneko Bachiller (ESP) from AZTI volunteered to step up as co-chair to help coordinate the workload in ISSG Recreational Fisheries. The vote of the participants in favour of Eneko Bachiller in the annual meeting was unanimous.

13.4 Roadmap/follow-up

The work on the RWPs will continue intersessional. One first step will be to finalize the list of candidate species that should be included in RWPs. It should be decided if 'sharks and rays' could be an independent RWP. The second step is to agree on the format drafting a candidate species RWP.

The implementation of the new Control Regulations will be followed up by liaising with the Commission, MS, EAA and WGRFS. The chair is also member of the Technical Working Group on Recreational Fisheries which will help to develop the data formats and requirements for the mandatory catch reporting system of the EU.

The development of RDBES will be closely followed.

ISSG Recreational fisheries is proposing to include plaice as mandatory species for the sampling of recreational data in the Baltic Sea.

Outreach to the other groups will be continued and possibly expanded to encompass RCG ECON, ISSG EMT and ICCAT.

Considerations for RCG Baltic & NANSEA

German recreational plaice data was recently introduced to the Baltic plaice assessment. Data from Sweden and Denmark was not available. ISSG Recreational Fisheries is therefore recommending to the RCG Baltic & NANSEA to include plaice as mandatory species for recreational fisheries data collection.

The question was raised if the ISSG Recreational Fisheries could propose pilot studies on recreational fisheries data collection and if the RCG had the legitimacy to endorse these?

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Work Plan

The following tasks for the period (2024-2025) were adopted:

- Develop Regional Work Plans
- Control Regulation follow up: impact on recreational fisheries data collection
- Present final list of species from WKRFSA
- RDBES Core group support in the development of the RDBES to incorporate recreational fisheries data
- Pan regional cooperation with RCG Med & BS, RCG LP, RCG ECON, ISSG Diadromous, ISSG EMT, WGRFS, ICCAT

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14 ISSG Regionally Coordinated Stomach Sampling

14.1 Background

Fundamental changes in the importance of natural versus fishing induced mortality have been observed in the North Atlantic while moving towards maximum sustainable yield (MSY) management targets. The reduction of fishing mortality in combination with successive recovery of fish stocks, especially of some larger predatory species, led to an increasing natural mortality as opposed to fishing mortality. Consequently, estimates of natural mortality have become more important for stock assessments and forecasts. In general, information on prey availability, competition and predation processes in fish stomachs are needed to support several policies (e.g., Common Fisheries Policy (CFP), EU Marine Strategy Framework Directive (MSFD)) that envisage an Ecosystem Approach to Fisheries (EAF) and an Ecosystem Based Fisheries Management (EBFM). Assessing trophic relations with detailed stomach contents analysis increases knowledge on suitable stock-recruit models (e.g., density dependent effects like cannibalism), assessment of fish species (e.g., estimates of Natural Mortality), reliable Biological Reference Points (BRP) considering species interactions, all aiming at providing a more appropriate framework for the implementation of multi-annual management plans. New data on predation is also important for providing both tactical and strategic advice for management of marine ecosystems (FAO 2008), since they positively contribute to the quality of the tools used to quantitatively assess their dynamics (i.e. multispecies assessment models, ecosystem models, etc.). A DG MARE tender (Contract No MARE/2012/02-SI2.632887) pilot study on stomach sampling in the North and Baltic Seas was able to demonstrate, in cooperation with the ICES Working Group on Multi Species Stock Assessment Methods (WGSAM), that cost-effective sampling of stomachs is possible during existing surveys. It was possible to analyse stomachs in a cost-effective manner with the help of national labs and/or external contractors. Results of the FishPi project (EU MARE/2014/19) conclude that opportunistic stomach sampling on existing DCF surveys is a promising way forward. However, missing regional coordination was identified a challenge. The lack of coordination leads to unbalanced sampling effort resulting in a lack of statistically sound sampling of all key species needed for food web characterization and finally to a barrier for moving towards an Ecosystem Approach to Fisheries (EAF).

The main objective of the ISSG Regionally Coordinated Stomach Sampling is to establish a regionally coordinated stomach sampling program – potentially covering on-board sampling, stomachs analyses in laboratory, data storage and report – in European waters, starting with the North Sea, Skagerrak and Kattegat as a case study.

Chairs: Pierre Cresson (FRA), Matthias Bernreuther (DEU).

14.2 Work-plan

Terms of Reference

1. Incorporate mackerel in quarter I into the sampling plan and update the expected stomach numbers
2. Convince decision makers to allocate financial resources for the analysis of stomach contents
3. Coordinate the stomach sampling program and the stomach content analyses
4. Follow up with ICES data center regarding stomach database
5. Consider how stomach content DNA can be coordinated
6. Involve third countries





14.3 Progress during 2023/2024

The ISSG met once during the 2023/2024 period (04 April 2024), to discuss the work done on the terms of reference. The meeting was held online and was attended by 23 participants.

Communication with the IBTSWG on the status and future of the stomach sampling during the IBTS

Pierre Cresson joined the IBTSWG 2024, held online, on 9 April 2024 for a discussion on the status, progress and problems or challenges associated with the stomach sampling and storage of the samples. Pierre Cresson first presented the major outcomes of the subgroup meeting:

- Updated numbers, resulting from the inclusion of mackerel in IBTS Q1 sampling in 2025
- Stomach analysis is not included yet in the mandatory tasks but ISSG will push for this in the future
- A reminder that numbers of stomach is an expected number, but cannot be considered as an accurate number of stomachs that will be actually collected
- The difficulty to include non-EU countries in the coordinated sampling, despite their importance in IBTS sampling and in the important proportion of their sampling in the stomach collection
- An update on the work done by ICES on the stomach database in DATRAS

A discussion was also initiated regarding a standardization of the protocol to share number of stomachs between IBTSWG and ISSG Stomachs. That may include the discussion on a template that can be used first by each country to collate numbers of stomachs everted (and discarded at sea), collected, and analysed, then communicated to IBTS Q1 and Q3 coordinators, and then to ISSG Stomachs. Due to a lack of time, this point was not discussed during the plenary, but will be included in further discussion of WGIBTS. IBTS coordinators were nonetheless able to communicate the numbers of stomachs collected during IBTS Q3 in 2022 and 2023 (Table 13.1). As expected, discrepancies could be observed regarding the level of details in stomach status (everted, regurgitated, empty, and thus discarded at sea, or containing preys and conserved for analysis).





Table 14.1: Summary of the number of stomachs collected during IBTS Q3 in 2022 and 2023.
When recorded at sea, everted, regurgitated and empty stomachs were discarded.

Year	Quarter	Country	Species	Number of fish examined at sea				Total number of stomachs collected	Uploaded to database (Y/N)
				V (everted)	R (regurgitated)	E (empty)	F (feeding)		
2022	3	DNK	<i>Lophius piscatorius</i>					12	Y
2022	3	DNK	<i>Merlangius merlangius</i>					209	Y
2022	3	ENG	<i>Lophius piscatorius</i>					39	N
2022	3	ENG	<i>Myxine glutinosa</i>					1	N
2022	3	GER	<i>Lophius piscatorius</i>					1	N
2022	3	GER	<i>Merlangius merlangius</i>					170	N
			<i>Lepidorhombus</i>						
2022	3	NOR	<i>wiffiagonis</i>					16	Y
2022	3	NOR	<i>Lophius piscatorius</i>					1	Y
2022	3	NOR	<i>Merlangius merlangius</i>					51	Y
			<i>Lepidorhombus</i>						
2022	3	SCO	<i>wiffiagonis</i>					72	N
2022	3	SCO	<i>Lophius piscatorius</i>					77	N
2022	3	SCO	<i>Merlangius merlangius</i>					491	N
2022	3	SWE	<i>Lophius piscatorius</i>					7	N
2022	3	SWE	<i>Merlangius merlangius</i>					275	N
2023	3	DNK	<i>Chelidonichthys lucerna</i>	1	0	0	22	22	Y
2023	3	DNK	<i>Gadus morhua</i>	1	2	3	78	78	Y
2023	3	DNK	<i>Scophthalmus maximus</i>	0	0	0	17	17	Y
2023	3	DNK	<i>Scophthalmus rhombus</i>	0	0	1	2	2	Y
2023	3	DNK	<i>Trachurus trachurus</i>	0	0	50	58	58	Y
2023	3	ENG	<i>Lophius piscatorius</i>					40	N
2023	3	ENG	<i>Scophthalmus maximus</i>					4	N
2023	3	ENG	<i>Scophthalmus rhombus</i>					4	N
2023	3	GER	<i>Amblyraja radiata</i>				1	1	N
2023	3	GER	<i>Chelidonichthys lucerna</i>					42	N
2023	3	GER	<i>Gadus morhua</i>					15	N
2023	3	GER	<i>Mustelus asterias</i>				1	1	N
2023	3	GER	<i>Raja clavata</i>				1	1	N
2023	3	GER	<i>Scophthalmus maximus</i>					12	N
2023	3	GER	<i>Scophthalmus rhombus</i>					7	N
2023	3	GER	<i>Squalus acanthias</i>				1	1	N
2023	3	GER	<i>Trachurus trachurus</i>					82	N
2023	3	SWE	<i>Amblyraja radiata</i>					1	N
2023	3	SWE	<i>Gadus morhua</i>	2				233	N
2023	3	SWE	<i>Molva molva</i>					2	N
2023	3	SWE	<i>Pollachius pollachius</i>					4	N
2023	3	SWE	<i>Scophthalmus rombus</i>					14	N





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Year	Quarter	Country	Species	Number of fish examined at sea				Total number of stomachs collected	Uploaded to database (Y/N)
				V (everted)	R (regurgitated)	E (empty)	F (feeding)		
2023	3	SWE	<i>Squalus acanthias</i>					6	N
2023	3	SWE	<i>Trachurus trachurus</i>					57	N



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ToR 1: Incorporate mackerel in quarter 1 into the sampling plan and update the expected stomach numbers

The numbers of expected stomachs for the target and minor species for the 5-year rolling scheme were updated with the incorporation of mackerel in quarter 1 IBTS (Table 13.1). The expected numbers for 2025 ("year 4" of the sampling scheme) increase by 511 mackerel stomachs in quarter 1. The number of additional expected stomachs for members participating in the quarter 1 IBTS varies for 2025 from 23 for Denmark to 151 for Germany (Table 13.2).

Table 14.2: Updated number of expected stomachs per year of the 5-year rolling scheme

Year	Quarter	Common species	expected no. of stomachs	Sum of stomachs per year	Quarter	"Minor" species sampled each year	Species to be sampled opportunistically each year (dead specimens; live specimens are generally released)	Total number of stomachs sampled per year
1	1	Whiting	1697	3406	1	608	140	4715
	3		1280					
	1	Anglerfish	72		3	471	90	
	3		66					
	1	Megrim	127		3	471	90	
	3		166					
2	1	Cod	1246	3229	1	608	140	4538
	3		1145					
	1	Horse mackerel	293		3	471	90	
	3		546					
3	1	Hake	481	3703	1	608	140	5012
	3		879					
	1	Plaice	1196		3	471	90	
	3		1148					
4	1	Haddock	1311	4005	1	608	140	5314
	3		1167					
	1	Mackerel	511		3	471	90	
	3		1016					
5	1	Saithe	490	3933	1	608	140	5242
	3		777					
	1	Red gurnard	149		3	471	90	
	3		58					
	1	Grey gurnard	1335		3	471	90	
	3		1126					

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Table 14.3: Updated numbers of expected stomach samples by quarter and nation participating in the IBTS from 2025 to 2027.

Nation	Year	Quarter	Main species	expected number of stomachs (Main)	Quarter	expected number of stomachs (Minor)	Sum of all stomachs per year and nation (Main + Minor)
Denmark	2025	1	Haddock	59	1	21	404
		3		64			
		1	Mackerel	23	3	72	
		3		165			
England	2025	3	Haddock	294	3	118	645
		3	Mackerel	233			
France	2025	1	Haddock	35	1	115	188
		1	Mackerel	39			
Germany	2025	1	Haddock	426	1	113	875
		3		26			
		1	Mackerel	151	3	59	
		3		100			
Netherlands	2025	1	Haddock	74	1	113	241
		1	Mackerel	54			
Norway	2025	1	Haddock	248	1	93	967
		3		250			
		1	Mackerel	110	3	122	
		3		144			
Scotland	2025	1	Haddock	347	1	98	1359
		3		443			
		1	Mackerel	90	3	111	
		3		270			
Sweden	2025	1	Haddock	123	1	194	640
		3		92			
		1	Mackerel	46	3	80	
		3		105			
Denmark	2026	1	Saithe	6	1	21	456
		3		22			
		1	Grey gurnard	150	3	72	
		3		183			
		1	Red gurnard	1	3	72	
		3		1			
England	2026	3	Saithe	183	3	118	573
		3	Grey gurnard	263			
		3	Red gurnard	9			



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Nation	Year	Quarter	Main species	expected number of stomachs (Main)	Quarter	expected number of stomachs (Minor)	Sum of all stomachs per year and nation (Main + Minor)		
France	2026	1	Saithe	0	1	115	312		
		1	Grey gurnard	186					
		1	Red gurnard	11					
Germany	2026	1	Saithe	180	1	113	854		
		3		14					
		1	Grey gurnard	336					
		3		118					
		1	Red gurnard	34				3	59
		3		0					
Netherlands	2026	1	Saithe	0	1	113	288		
		1	Grey gurnard	161					
		1	Red gurnard	14					
Norway	2026	1	Saithe	169	1	93	1036		
		3		292					
		1	Grey gurnard	186					
		3		169					
		1	Red gurnard	4				3	122
		3		0					
Scotland	2026	1	Saithe	74	1	98	1128		
		3		172					
		1	Grey gurnard	219					
		3		319					
		1	Red gurnard	87				3	111
		3		48					
Sweden	2026	1	Saithe	62	1	194	604		
		3		96					
		1	Grey gurnard	98					
		3		75					
		1	Red gurnard	0				3	80
		3		0					
Denmark	2027	1	Whiting	158	1	21	427		
		3		173					
		1	Anglerfish	1					
		3		1					
		1	Megrin	1				3	72
		3		0					
England	2027	3	Whiting	317	3	118	504		
		3	Anglerfish	20					





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Nation	Year	Quarter	Main species	expected number of stomachs (Main)	Quarter	expected number of stomachs (Minor)	Sum of all stomachs per year and nation (Main + Minor)		
		3	Megrim	49					
France	2027	1	Whiting	258	1	115	373		
		1	Anglerfish	0					
		1	Megrim	0					
Germany	2027	1	Whiting	387	1	113	723		
		3		89					
		1	Anglerfish	29					
		3		1					
		1	Megrim	45				3	59
		3		0					
Netherlands	2027	1	Whiting	227	1	113	341		
		1	Anglerfish	1					
		1	Megrim	0					
Norway	2027	1	Whiting	218	1	93	792		
		3		207					
		1	Anglerfish	23					
		3		22					
		1	Megrim	46				3	122
		3		60					
Scotland	2027	1	Whiting	269	1	98	976		
		3		367					
		1	Anglerfish	16					
		3		22					
		1	Megrim	36				3	111
		3		57					
Sweden	2027	1	Whiting	181	1	194	586		
		3		128					
		1	Anglerfish	3					
		3		1					
		1	Megrim	0				3	80
		3		0					

ToR 2: Convince decision makers to allocate financial resources for the analysis of stomach contents

The allocation of financial resources to the analysis of the sampled stomachs was discussed during the meeting and the situation in the different countries participating in the IBTS quarter 1 and/or quarter 3 was analyzed. Funding does not appear to be a challenge to most of the participating EU countries, either analyzing the





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samples in their own laboratories (e.g. France, the Netherlands) or sending the samples to e.g. Poland for analyses in the case of Sweden. The overall opinion of the group is that a recommendation should be made for the participating members states of the EU to not only allocate financial resources to the sampling of the stomachs but also to the analysis of the stomach contents.

The funding situation in the third countries (Norway, Scotland and England) is different from the EU members and will be discussed under ToR 6.

ToR 3: Coordinate the stomach sampling program and the stomach content analyses

An active coordination of the International Bottom Trawl Survey (IBTS) stomach sampling was not explicitly necessary. The communication between the two groups (IBTS working group, IBTSWG, and this group) had been established, and recurring meetings between the IBTSWG and the RCG ISSG Stomach sampling are being arranged. A favorable aspect that simplifies the work is the fact that the coordinators of the Q1 IBTS (Ralf van Hal) and of the Q3 IBTS (Kai Wieland) are active members of this RCG ISSG. As a result of this direct link and the fact that the annual stomach sampling is mandatory, the collection of stomachs was successful during the first and third quarter IBTS in 2022 and 2023 and during the first quarter in 2024.

As already mentioned under ToR 2, the stomach content analyses are being conducted more or less on a regular basis in the different countries and the overall impression is that each country is analyzing the stomachs according to the RCG Laboratory stomach content manual (RCG NANS&EA RCG Baltic 2023) and at the moment no specific coordination action is needed.



Discrepancy between the numbers of expected stomachs vs actual numbers sampled

The ISSG group felt that discrepancies between the numbers of expected stomach samples versus the number of actual stomachs sampled during the surveys were partly significant. This observation was considered unfavourable and led to tensions in the financial planning of the analysis of the samples in some member states.

The group discussed the topic and feels compelled to clarify the derivation and use of these targets:

The expected stomach numbers provided by the RCG ISSG Stomach sampling program should not be regarded as absolute numbers. In contrast they are intended as a guideline to facilitate planning the likely scope and resource needs for the program at sea and back on land.

Targets are estimated from reference period 2015 to 2019 of the North Sea IBTS in quarters 1 and 3 as downloaded from ICES DATRAS. Sampling levels then felt useful and achievable and the RCG stomach sampling scheme was set at 2 stomachs per 5 cm length class at each IBTS station (RCG NA NS&EA RCG Baltic 2021, 2022).

The IBTS participating nations in the North Sea have a pre-defined rectangle allocation (ICES 2023). This allocation of standard rectangles is frequently adapted before and/or during the IBTS cruises. In and of itself, this can intuitively lead to changes in species composition and therefore sampled stomachs. While the above is largely a planning issue, the key source of variability is undoubtedly natural fluctuations in spatio-temporal abundance of fish species. We have forecast from average values so a degree of variation from the targets is to be expected. What is achieved then reflects availability of samples rather than the effort being put into sampling. Figures should therefore be interpreted in that context.

It is the aim of the ISSG to update the expected number of stomach samples per nation with a more recent reference period in the near future.

ToR 4: Follow up with ICES data center regarding the stomach database.

ICES Advice Data Officer Cecilia Kvaavik joined the online meeting on 4 April 2024 and gave a presentation on the new data format of ICES' stomach content database. After the presentation, the upload process and upload status from the RCG stomach sampling plan were discussed. A deadline for the upload of the results of stomach content analyses of a specific IBTS was discussed but a deadline could not be agreed upon.

The main message is that the updated stomach content database is up and running and the data should be uploaded frequently.

Nevertheless, it should be kept in mind that uploading the data to the data base may not be considered mandatory as long as the stomach analysis is not mandatory, and not supported by dedicated funding.

ToR 5: Consider how stomach content DNA can be coordinated/incorporated

During the online meeting on 4 April 2024, two presentations were given on the application of DNA methods in stomach content analyses. (Presenter I - Oriol Canals Delgado (AZTI): "How to incorporate DNA metabarcoding for stomach content analysis into routine sampling": Presenter II - Sophie Arnaud-Haond (Ifremer): "Using eDNA to characterize stomach contents"). The entire afternoon was dedicated to this ToR. Presentations led to a large round of questions and discussions, as different views on the applicability of this method were present in the group. There is a certain interest for the method but interrogations persist regarding its application during onboard surveys, along with protocols already applied, and to fisheries-management related questions.

Pros and Cons of DNA analyses in stomach content analyses

Pros

- Less time-consuming than visual analyses (can analyze large number of samples simultaneously)
- More cost-effective (especially for high number of samples)
- High taxonomic identification accuracy (including degraded prey and early life stages)
- Non-dependent on taxonomic expertise of the operator in charge of analyzing the stomach, but highly dependent on the accuracy of taxonomic expertise of the operator in charge of analyzing sample used for DNA extraction, analysis and inclusion of database.
- Easily standardized and automatized

Cons

- Not adapted to provide the quantitative data requested for fisheries management issues, e.g. number/biomass of prey, and length and life stage of prey available, which is highly relevant for e.g. multi-species assessment models.
- Not all groups are homogeneously documented, lack of robust reference sequences for "minor" groups
- Cannibalism not possible to detect
- "Clean" working environment is needed, as there is always the risk of contamination. Effort is required at sea to take the samples without contamination and cleaning chemicals (specifically 10% bleach solution) are necessary, which may not be allowed on every vessel. Time necessary to clean working environment may not be available between two hauls, notably for countries with limited workforce.
- Taxonomic expertise remains necessary, not during the analysis of the stomach itself but *a priori*, to produce reference databases. This is problematic, as an incorrect taxonomic identification at this stage cannot be spotted during the analysis of the stomach

Bottom line

The DNA-techniques for stomach content analyses have pros and cons, as it does any other technique for stomach content analysis (including visual inspection). Nonetheless, the choice of using a technique or another should not be driven on an *a priori* decision on the absolute pros and cons of a method, but by its ability to solve the issues. It seems from the discussions we have had during this group that this technique may not be suited to answer demands formulated by WGSAM, and may be complex to combine with current DCF routine sample collection.

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The inclusion of stomach content collection, and hopefully analyses, in the DCF mandatory tasks is driven by the will to better represent trophic interactions, including cannibalism, and natural mortality in ecosystem models. DNA metabarcoding has some merits, notably regarding its ability to provide a more exhaustive but qualitative vision of the prey diversity in the stomachs. This point applies notably to prey with low importance or faster digestibility of which (e.g. jellyfish) precludes from an observation during visual analyses, and as long as reference DNA databases are correctly informed for these groups.

Nevertheless, fisheries-management related issues, and models applied to do so, largely relies on quantitative data, e.g. for the estimation of prey biomass or abundance, and ultimately trophic fluxes and natural mortality. Developing accurate estimators of prey in the stomach is acknowledged as a current pitfall of DNA based analysis of stomachs and a future development. Discussion during the group notably highlighted the impossibility to provide simultaneously (semi-)quantitative estimates of prey from different taxa, as a result of different DNA amplification based on different taxon-specific primers. Future discussions about integration of DNA based methods could be considered, when these methods are more accurate in quantitative terms.

In addition, most trophic models are based on length relationships between prey and predator that can be obtained only by measuring prey observed in stomachs. More largely, DNA based methods cannot decipher between different life-stages, as eggs, larvae or adults of the same species share the same DNA. Identifying what life-stage was consumed is essential, as predating an egg or an adult do not have the same impact on population renewal.

Finally, discussions during the group demonstrated the high level of cleanliness requested for DNA analyses, to prevent genetic contamination of the samples. Stomachs dedicated to DNA-based methods should be processed with extreme caution (single use gloves, tools systematically cleaned with chemicals), and combined analyses (DNA and visual examination) are not possible. More largely, the possibility to sample stomachs of individuals already used for otolith collection and maturity estimation, appear complex, as the increased manipulation may pose a contamination threat. A specific collection of stomachs for DNA analysis was proposed. Such an extra work appears complex to add in the current work program required on board, notably for countries with limited workforce. Similarly, collecting entire fish, and dissecting the stomachs at lab was proposed. This point was discussed during previous sessions of this ISSG, but was rejected, notably as time and freezing space onboard is limited. Finally, increasing the number of fish collected goes against the will to limit the impact of surveys on ecosystems, in line with current animal ethics and welfare concerns.

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ToR 6: Involve third countries

Third countries (NOR, SCO, ENG) are as non-EU members not obliged to sample stomachs in the North Sea. Exchange with IBTSWG confirmed their will to participate to the coordinate sampling. But as they are not involved in DCF, they also took the liberty to derive from the coordinated sampling. Nevertheless, numbers demonstrate that these countries do represent an important part of the sampling, and that missing their stomachs may represent a risk for the robustness of the analyses.

Regardless of this, stomachs were partly sampled, but freezer capacity is considered as a problem and funding for the analysis of the stomachs is not secured.

Discussions on a way how to get the third countries participating in the IBTS involved in the systematic sampling according to the RCG stomach sampling plan and in the analysis of the stomach contents, it was the

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opinion of the group that the best option for the other participating countries is to set a good example. By collecting and analyzing the stomachs and uploading the data for use by end users (e.g. WGSAM), the improved results of e.g. multi-species assessment models may provide some motivation to allocate funds to the sampling and analyses.

14.4 Roadmap/follow-up

Future tasks

- Update the data format description in the RCG stomach sampling manual to match the updated ICES stomach database format.
- Update the reference period for the expected stomachs (new reference period: 2019 to 2023) and update the expected stomach numbers by species over the 5-year rolling scheme.
- Communicate with WGSAM on the end-user needs/ define the needs and the purpose of the data

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ANNEX I 4.1 – Agenda of the ISSG Stomach sampling online meeting on 4 April 2024

RCG NANS&EA + Baltic Sea - ISSG ‘Regionally coordinated stomach sampling’

Virtual meeting (Webex), Thursday 4 April 2024 – 09:00 to 15:00 h Copenhagen time
(Chairs: Pierre Cresson, France & Matthias Bernreuther, Germany)

Agenda

Terms of Reference

1. Incorporate mackerel in quarter 1 into the sampling plan and update the expected stomach numbers
2. Convince decision makers to allocate financial resources for the analysis of stomach contents
3. Coordinate the IBTS stomach sampling and propose different options for the analysis of collected samples
4. Follow up with ICES data center regarding stomach database
5. Consider how stomach content DNA can be incorporated
6. Involve third countries

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Thursday, 4 April 2024

09:00 Start of the meeting (Pierre, Matthias)

- Welcome, house rules, Introduction – Tour de table and introduction of new members
- Adoption of the agenda

09:30-10:15 TOR1 and 2 (Pierre, Matthias)

- Update of expected numbers after incorporation of mackerel in Q1 sampling
- Update on national situations about funding of the work – tour de table
- Discrepancy between expected and actual numbers – how to deal with that

10:15-10:30 Coffee break

10:30-11:15 TOR3: Coordination of stomachs sampling and analyses

- Tour de table on 2023 and 2024 sampling and analyses: How did it go for you? Did you face some difficulties?
- Update on numbers of stomachs collected and analysed
- Discussion about the definition of a focal person in each country
- Message for IBTSWG? (Meeting with them Tuesday 9 April) – How can we standardize the collection of numbers, requested for our report?

11:15-12:00 TOR4: Incorporation of stomach data in ICES database

- Discussion with Cecilia Kvaavik (ICES data center)



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12:00-13:00 Lunch break

13:00-14:00 TOR5 – DNA based methods for the analysis of stomachs

- Presentations of the previous work done by Oriol Canals Delgado (AZTI-Spain) and Sophie Arnaud Haond (Ifremer- France)

14:00-14:15 Coffee break

14:15-15:00 The future and stuff

- Issues to be decided by the RCG?
- Next steps
- Open questions
- Report writing – Sharepoint (first draft: ~ 11 April on sharepoint - deadline for comments: 30 April)

→ Deadline for ISSG report: **1 May 2024**

15:00 End of the meeting

Participants

Pierre Cresson (Ifremer FRA) + Matthias Benreuther (Thünen Institute- DEU) as chairs, Kai Wieland (DTU-DNK), Ralf van Hal (WMR- NDL), Marian Torres, Koanna Pawlak, Inesa Blakunova (LTU), Oriol Canals Delgado (AZTI-ESP), Aare Verliin (Estonian Marine Institute-EST), Clémence Cure (Ifremer FRA), Rémy Cordier (Ifremer FRA), Athanasios Evangleopolos (Fisheries Marine Institute GRC), Marzenna Pachur (POL), Izaskun Preciado (IEO-ESP), Oriol Canals, Irene Rabanal (IEO ESP), Mariàn Torres (IEO-ESP), Cecilia Kvaavik (ICES), Dave Stokes (Marine Institute, IRL), Joanna Pawlak (POL), Karolina Wikström (SLU-SWE), Laura Lemey (ILVO - BEL) - Sophie Arnaud Haond (Ifremer FRA).

