WORKING GROUP ON GOVERNANCE OF THE REGIONAL DATABASE & ESTIMATION SYSTEM (WGRDBESGOV; OUTPUTS FROM 2024 MEETING)

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i Executive summary

The Working Group on Governance of the Regional Database & Estimation System (WGRDBES-GOV) provides the governance function for both the existing Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) that is currently in development. It is composed of representatives from ICES Member Countries and EU Regional Coordination Groups (RCGs). In this report the WGRDBESGOV reviews the RDBES developments performed during 2024 and plans for the work required in 2025 and beyond.

ii Expert group information

Expert group name	Working Group on Governance of the Regional Database & Estimation System (WGRDBESGOV)
Expert group cycle	Multiannual fixed term
Year cycle started	2023
Reporting year in cycle	2/3
Chairs	Els Torreele, Belgium
	Lucía Zarauz, Spain
Meeting venue and dates	25–29 November 2024, ICES HQ, Copenhagen, Denmark (27 participants)

1 RDBES annual workflow and support

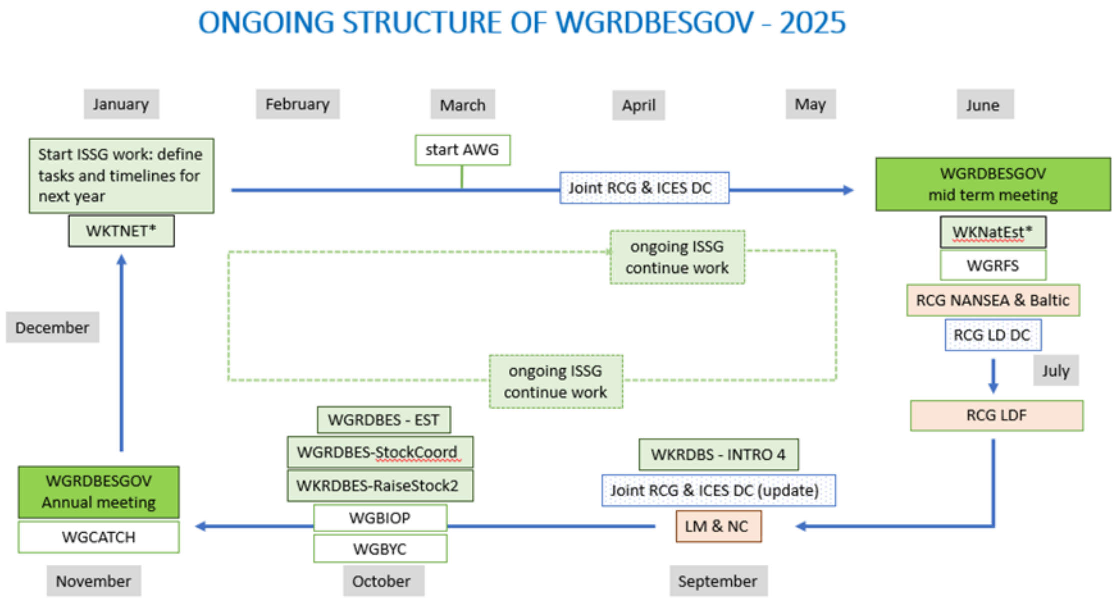

Figure 1. Annual workflow for 2025.

2 Roadmap

The deadline for the full implementation of the RDBES is set for 2027. By that time, the usage of InterCatch will be stopped, and the data needed for ICES AWG will be prepared in TAF, using the data uploaded in the RDBES. This is an ambitious goal, and it requires actions and developments at both national and ICES levels, so that in 2027:

- All ICES countries should be able to upload to the RDBES the data needed for ICES and RCG work.
- All ICES countries should be able to provide final estimates using data uploaded to RDBES in TAF by the time of the usual ICES AWGs submission deadlines.
- Stock coordinators should be able to do the coordination they do currently in IC in TAF regarding data management and preparation of the data needed for the assessment.
- ICES needs to secure that the TAF system is fully developed in a way that is well adapted to commercial catch estimation and stock coordination, providing a smooth and secure flow between the data in RDBES, the new National and Regional Catch Estimate Format (RECF), and the final stock-level coordinated commercial inputs to assessment models.

Based on the feedback received from data submitters, national estimators, stock coordinators, developers and also from the different working groups and workshops celebrated in 2024, the WGRDBESGOV has revisited and updated the roadmap for RDBES development and implementation, concerning the 2025–2027 period. The roadmap is summarized in Table 1, with some detailed considerations presented next.

Table 1. Summary of the roadmap 2025–2027 (The roadmap extends to 2027 so that it is coordinated with the timeline of the present Data Collection Framework (DCF). WGRDBESGOV will revise the roadmap regularly and make adjustments where needed). In red, the terminated databases

	2025	2026	2027
RDB	Data download	Data download	Data download
InterCatch	Data uploaded and download	Data uploaded and download	Data download
RDBES	Data uploaded and download	Data uploaded and download	Data uploaded and download
RDBES Data Calls	Joint RCG-ICES RDBES DC (April) RCG LDF RDBES DC (June)	Joint RCG-ICES RDBES DC RCG LDF RDBES DC	Joint RCG-ICES RDBES DC RCG LDF RDBES DC
Other Data Calls	ICES Fisheries DC ICES Recreational DC ICES WGBYC DC	ICES Fisheries DC ICES Recreational DC ICES WGBYC DC	
Support	WKTNet WKNatEst WKTNET2 WKRDBES-INTRO WKRDBES-RaiseStock2	WKRDBES-INTRO WKRDBES-Flow	

	2025	2026	2027
	WGRDBES-EST WKRDBES-StockCoord	WGRDBES-EST WKRDBES-StockCoord	
Deliverables	1. TAF – National estimation templates 2. TAF- Intermediate DB (look up tables) 3. TAF - Webservice linking ICES server and RDBES 4. RDBES and TAF - Access roles and permissions (provisional. For limited people) 5. RCEF 6. SCF 7. RDBES Tasks	Access roles and permissions (Q2)	
Other data	MRF Data Base (starting in June)		
Other Actions	WKConfidenciality External communication		
Use of RDBES in stock assessment	Production of estimates for selected stocks (WKRaiseStock2)	Trial of the whole workflow in TAF for selected stocks (same stocks)	Use of RDBES data in TAF for the assessment of all stocks

3 Implementation of RDBES

3.1 Timeline for 2025

A timeline defining the main milestones for RDBES and TAF implementation in 2025 and their interdependencies is shown in Annex 7.

3.2 Support

To support national data submitters, national estimators and stock coordinators, a series of WG and WK are planned in 2025 (Table 2). A further description of the different WK and WG can be found below.

Table 2. WG and WK planned in 2025 to give support to data submitters, national estimators and stock coordinators.

WK/WGs	Chair(s)	Dates 2025	Location	Goal	Target Group
WKTNET	Ana Ribeiro Santos, Colin Millar	27–31 Jan	Online	Create national estimation templates, TAF training.	National Estimators
WGRDBES-StockCoord – *Intersessional - 1*	Sofie Nimmegeers, Kirsten Birch Håkansson	31 Jan	Online	Test RCEF and develop stock coordination functions	Stock Coordinators
Training Quality Checking CL and CE	Karolina Molla Gazi	Mid-end March	Online	Run the Quality Report, identify potential errors, provide support.	Data submitters
WKNatEst	Ana Ribeiro Santos, Jessica Graig	2–5 Jun	Online	Collaborate on reproduction of national estimations	National Estimators
WKTNet2	Ana Ribeiro Santos, Colin Millar	16–20 Jun	Online	Create national estimation templates, TAF training.	National Estimators
WGRDBES-StockCoord – *Intersessional - 2*	Sofie Nimmegeers, Kirsten Birch Håkansson	May/June	Online	Test RCEF and develop stock coordination functions	Stock Coordinators
WKRDBES-INTRO	Henrik Kjems-Nielsen	Mid-end Sept	Online	Introduce RDBES to new participants and provide the time slots for advanced questions.	Data submitters/National Estimators
WGRDBES-StockCoord – *Intersessional - 3*	Sofie Nimmegeers, Kirsten Birch Håkansson	23–24 Sept	Online	Present RCEF to national data submitters and national estimators. Ask for feedback	Stock Coordinators
WKRDBES-RaiseStock2	TBD	Oct (6–10 TBC)	Online	Reproduce the national estimates for several stocks	National estimators
WGRDBES-EST	Ana Claudia Fernandes, Richard Meitern	13–17 Oct	IJmuiden, NDL	Develop a generic ratio estimation function and RDBES visualize	National Estimators

WK/WGs	Chair(s)	Dates 2025	Location	Goal	Target Group
WGRDBES-StockCoord	Sofie Nimmegeers, Kirsten Birch Håkansson	21–23 Oct	Online	Develop the stock coordination functions	Stock Coordinators

3.2.1 WKTNET

ToRs/Resolutions: DSTSG 2024 resolutions[1]

Description: The aim of this WK is to create national estimation templates for writing RDBES national raising calculations in the TAF structure. A-3 hour training session on Git use will be given on Monday morning, before the start of the WK (12 pm) by Karolina Mola Gazi.

A second WKTNET workshop will be held later in the year (June) .

3.2.2 Training session for Quality Checking

Description: this is a 1-day online training session for Quality Checking of CL and CE data. the dates are still to be decided, but approximately it will be one week before the RDBES DC deadline (1 April). The objective of this session is to run the Quality Report[2] to identify potential errors, and provide support to countries. Member states are recommended to attend.

3.2.3 WKNatEst 1–3

ToRs/Resolutions: ready (WCATCH report 2024)

Description: This WK aims to support national institutes and national data providers in the transition to using the RDBES to calculate their national estimates of commercial landings and discards. The workshop provided a forum for each institute to present their progress to date, discuss challenges encountered and anticipated, and share ideas and R-scripts.

3.2.4 WKRDBES-INTRO

ToRs/Resolutions: DSTSG 2024 resolutions

Description: this is WK is addressed to data submitters and will combine basic and advanced training. A basic introduction of the RDBES data format and fisheries sampling examples will be provided for beginners, and time slots doubts will be organized for more advanced users to solve their doubts. The RDBES Core group will discuss and decide the format of the WK.

3.2.5 WKRDBES - RaiseStock2

ToRs/Resolutions: DSTSG 2024 resolutions

Description: In order to get prepared for phasing out of InterCatch and the full implementation of the RDBES in 2027, WGRDBESGOV discussed the need of doing a full trial for selected stocks prior to that date. The trial shall include all steps of the workflow, from the data upload and the

[1] https://www.ices.dk/about-ICES/Documents/Resolutions/2024 Resolutions/DSTSG EGs Resolutions 2024.pdf

[2] https://github.com/ices-tools-dev/RDBESQualityReport

production of the estimates to the stock coordination. In addition, the stocks selected are intended to cover different WG, areas and countries, to involve as many countries as possible.

The group planned a stepwise approach, consisting of two WK (2025 and 2026), with the following specific objectives

- In 2025: RDBES-RaiseStock2 takes place, with the objective of producing the estimates required for selected stocks. At this stage, the scripts don't need to be in TAF. National estimators of the selected stocks are strongly recommended to attend.
- In 2026: A new WK (RDBES-Flow) will take place, as a general trial of the workflow. It will be a kind of general rehearsal in the form of a WK, covering the production of the estimates and the stock coordination, and producing the information needed by stock assessors. Everything will be done in TAF, for the same stocks selected in 2025. National estimators and stock coordinators of the selected stocks are strongly recommended to attend.

During WGRBESGOV, some stocks were proposed (Table 3). This list has been confirmed with the corresponding national estimators and stock coordinators.

Table 3. List of proposed stocks.

Area	WG	Stock	Stock Coordinator
NS	WGNSSK	ple.27.420	Chun Chen
NS	WGNSSK	tur.27.4	Lennert Van de Pol
NS	WGNSSK	bll.27.3a47de	Damian Villagra Villaneuva
Celtic sea	WGCSE	whg.27.7b-k	Claire Moore
Celtic sea, eastern English Channel	WGCSE	sol.27.7fg	Sofie Nimmegeers
Bay of Biscay/Iberian coast	WGHANSA	pil.27.8c9a	Laura Wise
Bay of Biscay/Iberian coast	WGBIE	sol.27.8ab	Jean-Baptiste Lecomte
NAtl	WGWIDE	mac.27.nea	Afra Egan

3.2.6 WGRDBES-EST

ToRs/Resolutions: DSTSG 2024 resolutions

Description: This WG is in charge for developing R-scripts and functions for statistical estimation using the RDBES data format, as well as functions for visualization of RDBES data. This is the group that is helping national estimators to create functions for the calculation of national estimations, but people need to contribute in order to make progress and get the help they need.

3.2.7 WGRDBES - StockCoord

ToRs/Resolutions: DSTSG 2024 resolutions

Description: This WG is in charge of finalizing the specification of the new National and Regional Catch Estimates Format (RCEF), and developing R-scripts and functions for stock coordination using this format. This is the group that is helping stock coordinators to create functions for stock coordination, but the participation has been low, and the progress is slow. National coordinators are urged to contribute.

In 2025 the WG will consist in one annual meeting and three intersessional meetings. The intersessional meeting nº3, will be a workshop for national data submitters and national estimators to present and discuss the RCEF format.

3.3 Developments and deliverables

The core parts of the RDBES are complete and ready to be used, but to be fully implemented, all the process to provide data for stock assessment will need to take place in TAF, within a data flow that is still being developed at ICES level. ICES needs to secure that the TAF system is developed in a way that is well adapted to commercial catch estimation, providing for a smooth and secure flow between the data in RDBES, the new RCEF, and the final stock-level coordinated commercial inputs to assessment models.

WGRDBESGOV identified the main developments needed:

1. TAF - National estimation templates:

Templates for TAF analyses provide several benefits: standardization of inputs; outputs and diagnostics; time-saving; documentation on workflow, use of template and interpretation of standard plots; quality control reports; and creation of standard outputs. A national estimation template aims to standardize the workflow from RDEBS input data to intermediate outputs that are then used by stock coordinators to create the inputs to stock assessments.

2. TAF - intermediate Data Base (look up table):

The TAF intermediate database (TAF DB) is a secure place where standard outputs from TAF analyses are stored. Retrieval from the DB will be via an API and a webpage, and access will be controlled by appropriate rules based on the accessing users credentials.

3. TAF - Web service that links ICES server with repositories:

TAF webservices are REST services providing read and write access to the TAF DB records and contents. Contents include RDBES intermediate data files, stock assessment inputs, and stock assessment results. The webservices are secured through the use of a token which allows the user to access restricted data. Some contents will be fully public, such as published stock assessment results; others, such as RDBES detailed intermediate outputs, will only be accessible by certain users.

4. RDBES and TAF - Roles and permissions:

In order to ascertain if a user trying to access the contents of the TAF DB has the privileges of access, roles need to be defined. A common way to do this is to define roles and claims. An example of this is: user A has the claim: national estimator for Denmark. And certain contents which have the meta-data "Country: DK" are only accessible be users who have this claim. This is checked when the user attempts to access the contents.

In September 2025 we will have a provisional version (for a limited group of people, that can be used in WKRaiseStock2. In the second quarter of 2026, the final version.

5. RCEF (Regional Catch Estimates Format):

RCEF is the national/regional catch exchange format that serves to standardize the data exchange between the national estimation procedures and the stock coordination tasks within the RDBES.

The WGRDBESStockCoord has produced a preliminary version which meet the needs of most assessment working groups, but that still requires intensive testing by the national estimators and stock coordinators. The format will be revised by WGCATCH in January 2025. In June 2025, a draft final version will be distributed to national estimators and stock coordinators, and in September 2025, during the training RECF session, feedback of these actors will be gathered and taken into account to produce the final RCEF format

6. SCF (Stock Coordination Format):

SCF is the format that serves to standardize the data exchange between the stock coordinator procedures and the stock assessment within the RDBES. A draft will be ready in the second half of 2025, and it will be reviewed in the annual WGRDBES-StockCoord meeting.

7. RDBES Tasks

- API which support extracting data from RDBES to the TAF server.
- Increase data quality checks: More checks need to be implemented to increase the data quality. A functionality to explore data quality at different levels for data submitter, national estimators and stock coordinators and stock assessors.
- Include information on completeness and quality of data by developing a communication module for upload of Upload log data into the RDBES. Develop an overview functionality for data users and an export functionality which retrieves the relevant completeness and quality information together with the requested data.
- Communication of upload changes to relevant users. The communication module will ensure information about data issues found by users, or data corrections made by data submitters, is effectively communicated between: 1) data submitters, national estimators, stock coordinators and stock assessors and ICES. 2) Data submitter and RCGs
- Implement stock definitions. Develop stock definitions and a stock functionality which based on uploaded parameters and the future stock table, identify the stock of uploaded data, and insert stock information in the RDBES database tables; CL and SA table. Download of stock definitions.
- Data progress. Increase data progress visualization by developing a data progress module. This will allow tracking of data submissions according to deadlines. An inventory on upper level of the uploaded data should be developed. The inventory should be public available.
- Advanced role and permissions. Develop the security further to include all requested roles and data access e.g. regional estimator data download, and stock coordinators viewing upper level data and download of detailed. To ensure users only have access to the relevant parts of the dataflow, advanced roles and security measures should be developed and implemented, where permissions can go across countries, e.g. regional estimator. Overview of access and requests will be made.
- Recreational data. Develop a module which makes it possible to upload national recreational fisheries estimates into the RDBES. That will include meetings, specifications, coordination, database development, system development, testing, implementation. Identify potential relevant diadromous fisheries data to include in the RDBES. This will be done in coordination with other existing databases for diadromous data and focusing on end-users needs.
- FDI. Exports data from the RDBES into the Fisheries Dependent Information, FDI, file format.
- Bycatch data format files. Export relevant bycatch data from the RDBES into a bycatch format, similar to the current bycatch format.

WGRDBESGOV Chairs will keep track of the developments to ensure that the timeline is followed. The importance of the systems to be up and running following the agreed timeline is crucial because they are essential elements for the full implementation of the RDBES in 2027 and they are interrelated one with another, so a delay in one of them may hamper the development in other systems.

3.4 Needs for different types of data

Complete feedback on the status of the different types of data and different users, including the progress achieved in the RDBES and the issues encountered can be found in Annex 4 and Annex 5.

Below, the issues more relevant to the implementation of these data are summarized.

3.4.1 Biological data

There is still an issue with some countries that continue to use national maturity scales but upload RDBES data using the international SMSF scale. Errors in scale conversion have led to confusion across various assessment and survey working groups, as well as within national institutes.

WGBIOP did not reach a consensus about the possibility of allowing the option to upload data in national maturity scales.

This topic was already addressed in WGRDBESGOV 2024, and the group stands by the decision that the option for using national scales in RDBES is not allowed to reduce all confusion. The conversion of national scales (if still used) into the SMSF scale is the responsibility of the institutes who should keep track of the conversion used. This is in line with WGBIOP, who has advised all institutes to use the SMSF scale with substages and is in favour of mandatory upload of data to RDBES in the SMSF scale, and it is also in line with the DATRAS database.

3.4.2 Diadromous species

In 2024, the DIASPARA project was approved and started with one of the objectives to decide on the approach of the storing of the different diadromous data types. The diadromous experts active in this project were invited during the WGRDBESGOV meeting and it was agreed that the work on the database will be taken further under this project. The output of the project will be presented to the WGRDBESGOV in the upcoming meeting.

WGRDBESGOV supports that the core group will invite the diadromous data people, in order to discuss all related issues and find the best solution.

3.4.3 Bycatch data

WGBYC is an end-user of RDBES data, similar to stock assessment WG. Therefore, their workflow requires national estimators for bycatch data, which are in charge of extracting the data from the RDBES and producing the information that the WG needs. To this aim, national estimators need to have knowledge of the sampling scheme and also on how data have been uploaded in the RDBES.

In addition, WGBYC needs to define the format of the data that they want to receive from National estimators. It may be similar to the format used in the WGBYC Data Call, but it can also be different. When the system is set up, this new format will be a type of RCEF object and will have an associated function in TAF to validate it.

Quality checks currently implemented in the WGBYC DB, will also be implemented in the RDBES.

Another issue that will need to be addressed in future, is that WGBYC needs data from areas outside Area 27, which have to be included in the Data Call.

WGRDBESGOV send a recommendation to WGBYC to:

- *test if all the information required for their work is in the RDBES and inform WGRDBESGOV (core group) if any further development is needed.*
- *define the format of the data they want to receive from National estimators. Similarly to RCEF, this format will be created by national estimators using RDBES data.*

3.4.4 Marine recreational data

The development of the RDBES for Marine recreational fisheries is expected to start in summer 2025.

3.4.5 Electronic data

A new challenge for the future is the integration of new type of data to integrate in the RDBES. A short presentation was given during the WGRDBESGOV to have a preliminary insight on how to approach this.

3.4.6 RCGs

RCG ISSG métier and transversal variables proposed a word document template to document the methods and data sources used for creating RDBES CE/CL data. The template will be included in the 2025 RDBES Data Call.

Regarding definition of roles and permissions, the RCG needs a new user type "RCG" who has download access to all stocks and countries in the RCG area.

Both the scientific landings and official landings need to be mandatory in the RDBES. The implication of this is that all commercial landings data that currently exist in RDBES must be re-submitted.

3.5 Others needs identified

These needs are not placed in the roadmap yet, but they can be listed here so we keep track on them

3.5.1 TAF support system

WGRDBESGOV reflected on the fact that the full implementation of the RDBES will imply that here will be a large amount of people (national estimators and stock coordinators) using TAF and trying to move their codes to the ICES server. It is likely that in this process errors will occur (i.e. problems to run the code in the server due to different versions of R packages, or accidental pushes that need to be reverted). These problems are not so easy to solve, and many users will need support from an expert. In addition, the support will need to come quickly, due to the short time available for national estimators and stock coordinators to carry out their tasks.

Therefore, there is a need to set up a robust back up system which is designed to give answer to a number of users. The actual system is not enough because it is depending on a single individual. We need a team of people which is available for users and which is able to prevent bottlenecks that hinder progress. Apart from this, it was also identified the need to make good tutorials and make them available in the web.

Recommendation to WGTAFGOV:

It is strongly recommended to implement a backup system for the ongoing TAF work, as all tasks are currently dependent on a single individual. There have already been situations where updates to R packages on the TAF server were required, but the responsible person was unavailable, leading to significant delays and halting progress. It is essential to establish a robust backup plan, where another team member can step in to manage critical tasks, such as R package updates, during times of absence. This backup plan will help maintain workflow continuity and prevent bottlenecks that hinder progress. Additionally, the backup system should be part of a broader strategy for risk management, ensuring that other critical processes do not solely rely on a single person.

3.5.2 FDI export module

The RDBES format has been prepared to be able to convert to FDI, but the RDBES is not ready for export to FDI yet, as the national estimates (number at length, number-at-age, discards etc.) need to be calculated in RDBES, and this is not expected to be ready before 2027.

Therefore, the development of the FDI export module is postponed. Once the national estimates are calculated in the RDBES and the workflow for providing data for stock assessment is robust enough, this module will be developed.

3.6 Communication of the roadmap

For a successful implementation of the RDBES, WGRDBESGOV needs to reinforce the communication with data submitters, national estimators and stock coordinators and make them aware of their responsibility. They need to be ready, and they need to know that:

Efforts need to be done at national level to ensure that national upload and estimation procedures are ready in the new system by 2027. These efforts are multiple, they involve the adjustment to tight early deadlines of format production, and the adaptation of national estimation procedures so they run correctly in the new format and in TAF.

Efforts need to be done at stock coordination level to ensure data processing to convert national estimations into the full dataset needed for the stock assessment is done timely and in TAF.

List of national submitters, national estimators and stock coordinators

In order to facilitate this communication, Henrik will send WGRDBESGOV and WGRDBES-StockCoord chairs, a list with the national submitters, national estimators and stock coordinators. The lists will be a proxy, as there is not an official register of these users:

- Data submitters: actual data submitters to the RDBES. This list will be checked with the list gathered by the RCGs
- National estimators: actual data submitters to InterCatch
- Stock coordinators: can also be taken from InterCatch. The list shall include the corresponding stock and whether they are uploading data to IC and using it for the assessment

General Communication:

A general communication via e-mail will be sent to inform about the Data Call deadlines and the support WG and WK that will be provided in 2025

- *When will it be sent:* early January, so that people can organize year 2025
- *Recipients*: data submitters, national estimators and stock coordinators

- *Content*: the aim of the communication is to inform of the data call deadlines and support WG and WK that will be provided in 2025. Summary Table 2 will be sent, together with a short description of the groups.
- It is important to make clear that preparation is needed before the WK. The time during the WK is not enough for the challenges we have ahead. Efforts need to be done at national level to get ready for the transition.
- Be aware that some dates are provisional and may be changed.

Communication to stock assessors:

During WGRDBESGOV it was decided that further efforts need to be done to communicate with stock coordinators, as we are afraid that many of them are not still aware of the changes that are coming with the RDBES.

To that aim, a master presentation will be created to be presented in all AWG. It was also proposed to do one informative session for all stock coordinators early in the year, because some AWG are late in the year and we want them to be aware as soon as possible.

For this presentation, it will be very useful to use the material that the SG on Communication and the Secretariat is creating (by the 31st of January it is foreseen that some of this material will be ready).

ICES data centre is already doing a presentation in the EWGs. WGRDBESGOV discussed that this shall not be presented as an initiative of ICES data centre, but as an ACOM decision that will benefit the whole assessment process. To that aim, the presentation can also be sent to ACOM members for its distribution among national institutes.

The presentation shall cover the following issues:

- *Present the situation:* by 2027 InterCatch will be stopped and all the data needed for ICES AWG will be prepared in TAF, using the data uploaded in the RDBES.
- *Positive things of the RDBESGOV*: what are we trying to improve, which benefits will it bring (material from the communication SG).
- *Understand the whole workflow*: use the infographics that the Secretariat is preparing
- *How is all this going to affect them:* They need to be ready to do their work in TAF, using the RCCF.
- *The deadline*. 2027 is a robust deadline. It will be maintained. It is serious.
- *Support planned for 2025:*
  - 2-day training session on the RCEF: beginning of September (4–5).
  - RDBES-StockCoord: This is the group that can help you creating functions. But if you don't contribute, they may not be able to help you. In that case, you will need to have your scripts ready.
  - WKWRDBES-Flow (2026): will do a full trial including all steps of the workflow, from the data upload and the production of the estimates to the stock coordination, for selected stocks. These stocks will be the same stocks that have been selected in 2025 for WKRDBES-RaiseStock2.

The presentation can be adapted to be used also for data submitters and national estimators

4 Data calls

4.1 2025 Data Call

4.1.1 Joint ICES and RCG NANSEA and Baltic Data Call

In 2025, the RDBES data call will not be used for annual stock assessments. However, with the full implementation of the RDBES in 2027, InterCatch will be stopped and estimation and stock coordination routines used to prepare data for ICES stock assessments will be done using RDBES data. In order to get ready for that milestone, we need to ensure that all data needed for ICES EWG and RCG NANSEA and Baltic is contained in these data call, with the required quality.

With that aim, the following considerations need to be taken into account and included in the 2025 Joint RCG and ICES DC:

1. **Deadline**: 1 April 2025
2. **Temporal scope**: data requested for years 2021–2024.
3. **Spatial scope:** data are requested for Area 27, and for specific stocks data are requested also for adjacent areas (Table 4). These are widely distributed stocks which need data outside Area 27 for the assessment.

Table 4. ICES stocks for which data are requested for FAO area 27 and adjacent areas.

Data Call	Stock	Areas
WGEF	all elasmobranchs	27
WGEF	cyo.27.nea	27, 34
WGEF	guq.27.nea	27, 34
WGEF	gag.27.nea	27, 34, 37
WGEF	por.27.nea	27, 34, 37
WGEF	sdv.27.nea	27, 34, 37
WGEF	bsk.27.nea	21, 27, 31, 34, 37
WGEF	thr.27.nea	21, 27, 31, 34, 37
WGDEEP	Black scabbardfish (Aphanopus carbo)	34 (Division 1.2)

4. **Additional guidelines:**

a) For stocks ane.9a, ane.8, hom.9a and pil.8c.9a, information on special areas (9aN, 9aCN, 9aCS, 9aS_C, 9aS_A, 8cW, 8cE) shall be added in RDBES in the field 'fisheriesManagementUnit'.
b) For stock ane.8 catch data are required by month (instead of by quarter).
c) In the CS data, the sampling scheme (DEsamplingScheme) needs to follow the naming in the DCF National Work Plan. Ensure that ”National Routine” code is not used (this could be a check when uploading the data).
d) Include the template to document the methods and data sources used for creating RDBES CE/CL data developed by the RCG?

e) Remind overwriting rules.

5. **Support:** There will be 1-day online session about Quality Checking of CL and CE data (dates to be decided, but approximately one week before the deadline). The objective of this session is to run the Quality Report[3] to identify potential errors, and provide support to countries. Member states are recommended to attend.

6. **Data access rules:** The Data Call will include a list of ICES EWG which will have access to RDBES data. The Data call shall state clearly that the use of RDBES data needs to follow the data license[4], and that EWG chair and data users need to be aware of the rules and the responsibility it entangles. In addition, the data call shall describe the procedure that these WGs shall follow if they want to use the data:

   - The WG chair shall designate the members who need to use the data (data users) and write an e-mail to Henrik asking access for them.
   - The e-mail must include the motivation for the data access request (why do data users need the data?).
   - Data users must sign in the conditions of data use (link).

7. **Data Quality:** A message shall be included, indicating that data quality may be compromised during the transition to RDBES, because of the increased workload of having to answer two data calls (ICES and RDBES), while preparing for the transition to TAF.

4.1.2 RCG LDF Data Call

In 2025, the data call will request data from all MSs, explicitly addressing the outermost regions. Deadlines and data formats are being refined to ensure smoother uploads and analysis. The RCG will explore options to include biological data from the NAFO area to facilitate central storage and use of the data.

Deadline: Consistent with the overall approach of having the data before the RCG takes place (around June).

4.2 Future of Data Calls (In 2027 and onwards)

RCGs and ICES EWG are the two main end-users of RDBES data. However, the dates and the scope of the data required by the two entities differs.

RCG NANSEA and Baltic takes place in June, and the RCG ISSGs need RDBES data to be ready by the first of April to be able to produce their products. RCG LDF takes place in July, and the Data Call is generally issued in June. RCGs need the data to be as complete as possible as they are not focusing on a single stock or area, but on all stocks caught by all Member States fishing in their corresponding region. This is an EU Data Call and third countries are not obliged to answer.

ICES EWG (including AWG, WGBYC and WGRFS) take place from March to November, and the national estimates (InterCatch) need to be ready weeks before their corresponding WG, in a deadline which is set annually in the data calls issued by ICES. ICES data calls are mandatory for EU countries and third countries.

[3] https://github.com/ices-tools-dev/RDBESQualityReport

[4] https://www.ices.dk/data/data-portals/Pages/rdbes.aspx

With the full implementation of the RDBES in 2027, RDBES data will need to be ready to be used by ICES EWG, and this is challenging because ICES AWG starts early in the year, when the complete RDBES dataset is not yet available (i.e. age readings for some stocks).

WGRDBESGOV reflected on how to align the needs of ICES and the RCGs, in a way that gives data submitters and national estimators enough time to submit the data and prepare the estimates without compromising data quality.

WGRDBESGOV proposes to issue a single Joint RCG and ICES Data Call, where different deadlines are set depending on the needs of the end-user:

- **EWG deadlines (stock specific):**

  These deadlines are specific for each EWG, and they will be set a number of weeks before the dates of the group, in a similar way as they are now.

  EWG deadlines will determine the date when the RDBES data for specific stocks need to be uploaded in the RDBES and the estimates provided in TAF. It applies to all ICES countries involved in each specific stock

  The deadline is the same for data submitters and data estimators because the time needed to extract the raw data and prepare the required format may vary among countries. However, institutes need to ensure that data are uploaded in the RDBES sufficient time before the deadline, so that enough time is given to national estimators to do their job. It has to be taken into account that errors occur and that a time buffer is needed to solve any outstanding issue.

  The data uploaded in these deadlines can be complete, for all stocks and variables, if national institutes have all data available by that time. But they can also be partial, if only data for the required stock are uploaded, or if some variables are not available at the time (i.e. those required for the FDI). In the case of partial uploads, the overwriting rules of the RDBES need to be taken into account in future re-uploads (link to RDBES documentation).

- **RCG deadline:**

  The deadline for the RCG will remain the 1st of April. By this time RDBES data will need to be uploaded to the RDBES as complete as possible, taking into account all species and all areas covered for the RCGs, and also all mandatory variables.

  This deadline applies only to European Member Estates.

- **FDI deadline:**

  The FDI deadline in August will incorporate FDI variables, in the case they have not been included in previous uploads.

In this whole set up, it has to be taken into account that the time available for the submission and estimation phase is very tight and it cannot be enlarged due to the dates when advice requesters need ICES advice. This means that the time buffer to solve any outstanding issue will be small, and that during the first years of RDBES implementation this may cause problems in data quality and difficulties to fulfil the deadlines.

4.3 Future of benchmarks

Using RDBES in benchmarks comes with some additional complications that need to be addressed before its use can be generalized. Benchmarks frequently ask for historical data related to a specific stock. Those data are rarely easily accessible and documented to the level required by RDBES within countries and the workload involved in uploading them to RDBES and estimating them in TAF, even when possible, may take an unreasonable amount of time. Furthermore, when RDBES uploads are done to meet the purposes of a specific benchmark, it is not only the data of that stock that is uploaded, but also the full data of sampling programmes capturing it. As such the quality of (historical and present) data from other stocks is also prone to change.

WGCATCH recommends a coordinated approach among parties to streamline the datacall process for both benchmark and the annual fishery data calls related to commercial catch data compilation and provision. With the upcoming transition to RDBES, replacing InterCatch, WGCATCH considers its involvement essential to properly structure data requests and ensure they reflect the data collection designs.

WGRDBESGOV supports WGCATCH recommendation for a coordinated approach. See also Section 14 (recommendations), and to be involved in the whole process.

WGRDBESGOV recommends BOG (Benchmark Oversight Group) a coordinated approach among parties to streamline the data call process for both benchmark and the annual fishery data calls related to commercial catch data compilation and provision. With the upcoming transition to RDBES, replacing InterCatch, WGRDBESGOV considers its involvement essential to properly structure data requests and ensure they reflect the data collection designs.

5 Other systems

The RDB has already stopped its function to upload new data since 2023. InterCatch will work normally until 2026, and by 2027 the assessment of all stocks will be integrated in the RDBES workflow. The WGBYC Database will also be integrated in the RDBES by 2027, with one single RDBES data call, including bycatch data.

These three Databases contain a time-series of data that are still relevant to RCG and ICES work but keeping them alive has associated costs that need to be evaluated. In 2023, WGRDBESGOV recommended ICES, RCGs and WGBYC to discuss the long-term maintenance of InterCatch, RDBs and WGBYC Databases for historical data, and to engage in an investigation of possible solutions.

After intersessional discussions, the following decision have been made:

5.1 RDB

WGRDBESGOV discussed the need for access to the Regional Data Base, RDB. There is only a need to be able to, on request, receive the time-series of landing, effort and sample data collected over the years and stored in the RDB. Therefore, the RDB system interface could be terminated. There is only a need to keep the RDB database alive with internal access to being able download requested data. In 2024 it has shown that both several ICES Expert Groups and several European projects have requested data from the RDB, and that will continue in future.

5.2 InterCatch

WGRDBESGOV discussed the need for access to the InterCatch system after RDBES have taken over all stocks for stock assessment in 2027. It is essential that the stock coordinators can view and download previous stock data, and view how the discard raising was done for the stocks, and which sampled strata was allocated to unsampled strata, to understand how the age and length distributions for the assessment was estimated. It is not needed to be able to upload and screen data and keep the functionality to perform discard raising and set up allocations and do distribution estimation calculations. That means all the data file upload and screening functionality and all functionality regarding allocations and estimations in InterCatch will be closed off. That means that practically speaking there will be no maintenance and therefore a minimum of cost to support the stock coordinators needs.

5.3 WGBYC

The WGBYC should compare the data in the RDBES with the data in the bycatch database. Work should be done on exporting data from the RDBES in a format that is easy to work with for WGBYC. All existing quality checks should also be implemented in RDBES. WGBYC should start use the data from the RDBES as soon as possible. Once that has happened then the bycatch database would only be needed for historical data, and it is likely that a solution similar to the one proposed for the RDB and IC may also be suitable for this database.

6 ISSG Core Group

The RDBES Core Group is a group of experts, who are specifying the data model of the RDBES, and that have been an ongoing process for several years. It has been discussed and specified what information is needed, and how it should be structured. This year there has been 17 online meetings. The last 4+ years there have been about 140 online meetings, but the Core Group also have discussed all relevant input from all countries. The Core Group is chaired by Henrik Kjems-Nielsen, ICES, and the members are: Kirsten Birch Håkansson, DTU Aqua, Denmark, Nuno Prista, SLU Aqua, Sweden, David Currie, Marine Institute, Ireland, Liz Clarke, Marine Scotland, Scotland, Josefine Egekvist, DTU Aqua, Denmark, Karolina Molla Gazi, WUR, Netherlands, Ana Cláudia Fernandes, IPMA, Portugal, Marta Suska, MIR, Poland and Jonathan Rault, Ifremer, France. Generally, the Core Group; answer issues regarding RDBES on GitHub, discuss the data model/format and the use of the fields, solutions to sampling issues from the ICES community, new needed fields and related codes, the Core Group members or workshops. Every year the RDBSE have been specified further, and this year needed updates was made to the data model before the data call was send out.

Main updates

The main updates to Landing CL and Effort CE this year was:

The following 4 optional FDI fields have been added to the unique key of the Landing CL and Effort CE tables:

- CLmeshSizeRange, CEmeshSizeRange
- CLsupraRegion, CEsupraRegion
- CLgeoIndicator, CEgeoIndicator (GEO_INDICATOR)
- CLspeconTech, CEspeconTech

This means that data can be divided into further details according to the 4 fields.

The following CL field was made optional:

- CLofficialWeight

The 4 CE fields were made optional:

- CEofficialDaysAtSea
- CEofficialFishingDays
- CEofficialkWDaysAtSea
- CEofficialkWFishingDays

For field name consistency the following 3 updates was made:

- ‘Of’ was added in the field CEdataTypeOfScientificEffort
- ‘Of’ was added in the field CEdataSourceOfScientificEffort
- ‘al’ was added in the field CEnumberOfFractionalTrips

Several code additions to existing code type lists were also made.

Sample data CS

There were no direct updates to the data model for sample data. But it was made possible to add genetic population to the Biological Variable, BV. The code ‘GeneticPopulation’ was added to the code type BiologicalMeasurementType (‘BVtypeMeasured’). Then the code for the genetic population like ‘her-001’ for ‘Spring-spawning herring (Clupea harengus) in central and northern Baltic Sea’ can be inserted into the BVvalueMeasured.

Bycatch

The WGBYC looked into the RDBES data this year, and they will in 2025 conduct a comparison of the bycatch data in the RDBES with the data currently submitted to WGBYC. They would also like to have developed a way to extract relevant data from the RDBES in a for them easy usable format. WGBYC will also need to have the same quality checks, which they have now for the current WGBYC data, implemented in the RDBES.

Ideas for tasks for the Core Group next year (not exhaustive)

- Ensure needed information can be transmitted in the data model
- Answer issues and questions asked by the countries through the RDBES GitHub
- Update the documentation
- Define the role of the core group in future: which topics will be discussed, the frequency of the meetings, etc. This is a limited group of people and we have to prioritize the tasks to ensure progress
- Diadromous data: Invite the diadromous data people who came to the WGRDBESGOV annual meeting to discuss the incorporation of diadromous species data into the RDBES.
- WKRDBES-INTRO: Decide the format of WKRDBES-INTRO for 2025
- Survey biological data (issue raised by France): Biological information coming from surveys is needed to make the ALK for the assessment of some stocks. Some countries have stated that they are uploading this information into the RDBES, while others plan to include it in auxiliary tables during the estimation procedure. The incorporation of survey data into the RDBES is not considered good practice as it can lead to data duplication. Alternative options were discussed during the WG, such as using the web service from DATRAS; including the information in an auxiliary table in TAF. However, it was decided that this issue deserves more attention from the core group to find the best solution.

7 ISSG RCEF

Edvin Fuglebakk has been coordinating intersessional subgroup work on drafting an exchange format for the results of national estimation, and presented outcomes to WGRDBESGOV. A brief summary of the presentation is provided below.

The ISSG RCEF subgroup convened online in five meetings during January to June in 2024, and worked on revisions to a draft format specification developed at WGRDBES_Raise&TAF 2023. Issues reported by WGRDBES_Raise&TAF were resolved, additional issues were identified, but not resolved. Proof-of-concept stock-coordination examples were produced. Requirements and design rationale was documented, and a report brought to the attention of the chairs of WGRDBESGOV, WGRDBES-EST and WGRDBES_StockCoord. The outcomes of the subgroup work were also presented orally to the WGRDBES-EST and WGRDBES_StockCoord. WGRDBES_StockCoord has taken over the responsibility for continued development of the format, and will continue the process of developing this into a standard TAF output (TAF artefact) for national estimation.

Participants in the subgroup were: Bart Vanelslander, Jonathan Rault, Maria Ching Villanueva, Anthony Hennessey, and Edvin Fuglebakk

The WGRDBES-StockCoord took over the work made by the ISSG so the ISSG will stop in 2025. WGRDBES-StockCoord is working on a draft version which meet the needs of most of the assessment working groups, but that needs to be tested by the national estimators and stock coordinators, and that may need to be expanded to ensure broader applicability and robustness. More details can be found in Annex 4. The format will be revised by WGCATCH in January 2025. In June, a draft final version will be distributed to national estimators and stock co-ordinators, and in September, during the training RCEF session, feedback of these actors will be gathered and taken into account to produce the final RCEF format (see Section 3.3 Deliverables)

8 Quality

8.1.1 ISSG Quality

In 2024, the ISSG Quality developed an R Markdown document to serve as a resource for data submitters, helping them identify and correct potential errors before the submission deadline. By utilizing this script, data submitters can improve the accuracy and completeness of their data, thereby improving the overall quality and reliability of the submitted information. In addition, the group held an online half a day workshop to guide the data submitters on the use of the document and collect feedback for further development and improvements.

For the future work of the ISSG, two scenarios are considered:

1. If there is funding, coming from the project proposal (Section 12).

a) Develop a quality report for CS data. This will be done in coordination with RCG ISSG Catch and Effort Overviews and WGRDBES-EST (RDBES visualize package)
b) Make a plan for future work and present it in the mid-term WGRDBESGOV meeting

2. If there is no funding: the progress will definitely need to be slow. Two small tasks are foreseen:

a) To incorporate feedback received about the CL and CE Quality report
b) To perform a very basic CS summary of each hierarchy (similar than what Henrik does in the tables he presents).

8.1.2 Other actions

RCG NANSEA and RCG Baltic, raised the problem that when issues are found in the data submitted, it leads to an extensive e-mail correspondence between ISSG RWP, RCG chair, MS and ICES which is delaying the date when the final data are available for work.

Several actions were proposed:

1. There will be 1-day online session about Quality Checking of CL and CE data (dates to be decided, but approximately one week before the deadline). The objective of this session is to run the Quality Report to identify potential errors and provide support to countries. It is expected that this will help to reduce the errors in the data.
2. ICES will compile a list of data submitters that can be contacted when issues with the data are identified. This will help the correspondence to be more direct and effective.
3. Currently ICES has developed a version control tool which shows the different data uploads made by countries (AIMS-All Cases) and that was not known by WG participants.
4. It will be very useful to set up a system where end-users get a warning message when the data are reuploaded (we have this system implemented in InterCatch). This development is subject to funding.
5. Regarding the upload logs, there is a need for a more dynamic system, similar to the system in place for DATRAS, where you can currently find the submission files and logs (link to DATRAS system). This development is subject to funding.
6. In addition, it needs to be ensured that all data users (RCG, ICES EWG) receiving RDBES data also receive the corresponding upload logs. Data submitters shall also have access to their own upload logs

9 ICES RDBES System development

Many tasks have been completed this year. There has been a great focus on finding funding for the development of the RDBES. The possibility of a special request from EC was tried, but with a reply that since the RDBES to a large extend is for ICES advice, then other countries should also contribute to the development of the RDBES. After summer, a new join request was tried, with positive feedback from some countries, but first with potential start from year 2025. Since the contract for the long experienced RDBES developer is terminated in Dec. 2024, ICES Secretariat have decided to make a contract extension with the developer, but if funding is not coming in for the RDBES development, then the developer will work on other projects. In year 2024 the new functionalities and previous functionalities have been tested more thoroughly, also ICES Secretariat needed functionalities have been developed, like updates to the internal data upload system.

ICES Secretariat carried out many RDBES tasks during the year; coordination with the RCGs and sent the RCG and ICES RDBES data call, chaired the RDBES Core Group, participated and contributed to the RCG Tech NA NSEA Baltic, a ICES website for the RDBES was created, supported RCG Long Distance Fisheries, extracted data for the RCGs NA NSEA Baltic and LDF (Aug.), WGRDBESGOV work and presentations, supported national data submitters, created codes, maintained users, answered format and data upload questions.

The following development have also been implemented:

- Implement the new data model changes into the RDBES
- 4 FDI fields add to the unique index
- Screening check against data file and overwrite check against the database
- Exclude CEFDIconcat and CLFDIconcat from the export
- Developed a functionality to download sample data across all hierarchies in one go in one zip file
- Hierarchy folders are excluded where no hierarchy data exists
- Data Viewing
- Change needed for H9 for siblings because of order change
- Convert admin page from MVC razor (server side) to angular (client based)
- Write technical documentation for code modules
- Update the H7 and H8 upload and delete according to record order change and siblings
- Update the timestamp in the database when overwriting
- Added new Check in screening to find wrong formatted date and Time data -OSsamplingTime, LEtime, FOstartTime, FOendTime, FTdepartureTime, FTarrivalTime (no sec.)
- Dialog with 4 countries regarding applying rounding in DB to wrongly formatted time data (OSsamplingTime, FOstartTime, FOendTime, FTdepartureTime, FTarrivalTime, LEtime) and deploy xsd check to validate time formatted data
- Date validation in imported CS files
- Previously only server-side errors are being handled and logged in RDBES. Added feature to Catch and show client-side errors on page, including additional information.
- Ensure optional fields (null values) are included in filters on download and delete pages, and selected when SELECT ALL are selected
- Register RDBES/InterCatch submission in ICES data submission system AIMS finalized
- Setting up RDBES to redirect users to ICES RDBES data portal as landing page when visiting http://rdbes.ices.dk, because of the new RDBES landing page on ICES website
- Download for RCG chairs (ongoing)

- Allow multiple selections of download filter RCGs
- Add a check for right number of field separators for each table, all 3 separators - ; , tab (ongoing)
- Fixed the bug on screening page where multiple files were uploaded (large - long time) which caused error on screening page.
- Synchronization between RDBES and ICES vocabulary have been further developed

The fifth RDBES data call was sent 29 January 2024 with a deadline for upload of the data 2 April 2024.The new version of RDBES was released on the web 1 March 2024.

The prioritized functionalities are shown in the table below.

Functionality needed	**Description of functionality**
The Species List table needs to be split in two tables	To better work with the Species List data it is needed that the data are split in two tables. All procedure used to insert for data into the Species List need to update to be able to split the uploaded Species List data from one data type into now two tables; a modified Species List table and an additional Individual Species table.
RDBES validation tool	Currently data uploaded to the RDBES will be inserted into the RDBES, if the data passes the validations and the user approve potential overwriting of existing data in the database. But the ICES countries have found it to be a high priority for them to be able to validate RDBES data files without uploading the data to the RDBES. Therefore a RDBES validation tool will be incorporated into the RDBES as a separate tool.
Stock list module, maintain stocks and download stock list	To be able to distinguish and work with stock data it is essential to development a stock maintenance site, stock list overview and download site, which list all stocks with all depending parameters. Develop a stock functionality which based on uploaded parameters identify the stock of uploaded data, and insert stock information in the RDBES database tables; CL and SA table. Automatically population of the stock table, based on migration from InterCatch, but with manual treating of stocks that are not standard stocks.
Additional advanced role functionalities need to be added to security module	Currently user permission is given permission by using data task permissions without using roles. The roles are not fully developed and implemented. The roles are needed for more advanced access, viewing and download of data.
Upload logs implemented in the RDBES	To evaluate the data quality Upload logs are required within the RDBES to easily track the data quality and compare with the quality of data for previous years. The development should make it possible to upload, view and download Upload logs from the RDBES. The Upload log is a file which contain information from the countries of the completeness and quality of their data uploaded into the RDBES.
Recreational fisheries data implemented in the RDBES	Develop functionalities to make it possible to upload and download recreational data into the RDBES. The recreational data consist of three different data types; landing, effort and length distribution data. For each of the three data types a complete development and implementation throughout the RDBES will have made, from tables to security.

10 Confidentiality

Following the RCG NANSEA Baltic 2024 recommendation to host a *confidentiality workshop*, it was agreed at the 2024 Liaison meeting to produce a background document about the confidentiality and use of RDBES. The document summarizes the main issues balancing between the need to share and publish data under the DCF and the requirement to respect applicable (national) confidentiality rules. The background document highlights the different practices by Member States, but also the different approaches within data calls on the treatment of confidential records.

The subgroup on data confidentiality discussed the objectives and requirements for this workshop as well as issues to consider.

The aim of such a workshop would be:

- To provide an overview of practices and clarity of concepts and legal obligations.
- For the NCs to agree on minimum practices to be able to 1.) share and 2.) publish the data in a coordinated approach.

Issues to consider:

Lowest denominator: if MS agree on a coordinated approach through a workshop, there is the risk to end up with the lowest denominator.

ICES perspective: need to consider the non-EU countries as well but could take advantage of the process in the EU to receive relevant guidance and applied practices.

Legal interpretations can change and be regularly updated, there is a concern that opening up the questions could also result in more conservative national data sharing agreements. On the other hand, experts could use the output of the workshop to discuss data sharing with their own administration, highlight common practices and lift unnecessary restrictions.

Participants for the workshop:

NCs would be the focal points, although they might not be the most appropriate group to decide on rules of data confidentiality. For many of the data types, the national institutes implementing the DCF are for not the owners of the data, but the data users and are confined by the data sharing agreements they sign with their national departments and control agencies. While the Commission has previously provided guidance on the link between GDPR and DCF data, Member States can have rules in addition to GDPR that they need to adhere to. The authority on the national rules for data sharing and publication lies more likely with the national statistics offices and/or departments dealing with the control data that govern the data sharing agreements and publication practices.

Use and publication of confidential data:

For many national institutes there is distinction between the use and sharing of confidential data and the publication of confidential data with different entities being in charge on making decisions on the associated rules. For the use of confidential data from the RDBES, there are clear rules in ICES according to the "Access and use conditions for RDBES data", who can use the data for what purpose. Expert groups not providing advice cannot use confidential data. One risk the group identified is for experts to get confidential data through the working groups and use it for other purposes.

Concerns on data confidentiality are more often associated with the publication of data. It is therefore necessary to define the underlying purpose for any publication. For DCF workplans and the work of the RCGs, the purpose of data publication is the planning and coordination of data collection activities. For ICES advice, it is necessary to publish the data that provides the basis of advice (and the decisions made). The group did not consider it the role of ICES and the RDBES to publicly disseminate fisheries data from national institutes as this is already the role of EuroStat.

ICES reminded of the bureaucracy involved in asking permission to make restricted data available for other uses. While the data submitters might not be the owners of the data, they are the custodians and need to be transparent on what are the rules for providing that data. Currently there is limited information on where the gaps are in the data due to confidentiality and what can be shown. It would be useful to show the proportion of restricted and available data as is done in some working groups. This is an important process for ICES, who are dealing with data from the EU and non-EU countries.

The background document highlighted different practices for data reporting and publication: EuroStat applies confidential cascading, i.e. when a record is marked as confidential this follows through in different aggregations. As a consequence, a lot of data are marked as confidential. In FDI, the opposite approach is taken: if confidential records are grouped with non-confidential records, they become non confidential. For the publication of VMS data, MS applied different solutions during the process of agreeing on the publication. The information on what can be published by Member states is available and could be reviewed.

In corporation with DG MARE, the approach, the content and the timing is disused to organize this workshop. The data confidentiality workshop is expected to be held in March/April 2025. It will provide an overview of legal obligations and practices as well as end-user needs. The aim is that with this overview, agreements between NCs can be made on practices regarding the use and publication of data collected under the DCF and data from the Control Regulation made available to the DCF (as per section 1.3 in EUMAP -Com 2021/1167). In preparation of the workshop, questionnaire will be developed by providing an overview of the legislation applied by MS regarding the confidentiality of data collected under the DCF and submitted in response to data calls. The outputs of the questionnaire will be presented at the workshop and shared with NCs, DCF regional coordination groups, governance groups of the Regional Databases and key scientific end-users. In Annex 8 of this WGRDBESGOV 2024 report more a set of draft questions is listed, the ISSG on data confidentiality will work further on this in January 2025.

11 Communication

To highlight the importance of the RDBES to the different levels in the broader ICES community, it was agreed during the WGRDBESGOV to develop an approach and a set of communication tools to promote the RDBEs in a better way. Although the importance of the RDBES is known and acknowledged by all, it seems that it is not always the top priority in the planning, also because it has the perception of being a complex, heavy and not easy understandable process. The WGRDBESGOV discussed and identified the common and important RDBES selling points in general. The selling points was also prioritized according to relevant groups of recipients. An illustrative example was made of the positive/simple situation with the RDBES and a more confused situation without the RDBES.

An ISSG on communication was initiated to develop visuals, a set of communication tools and a communication strategy from 2025 onwards. ICES Communication and the RCG secretariat are members of this ISSG.

The list of **RDBES selling point keywords was developed,** by audience to target:

- **Institute directors:** Efficiency, better decision-making, optimize costs, streamline data, new basis for stock assessment, data collection according to regulatory standards
- **ICES decision bodies (council/ACOM/Delegates):** Ecosystem based assessment, better estimates, data quality, transparency, traceability, reproducibility, efficiency
- **EU and third countries:** Support legislation, Better decision-making, Data collection according to regulatory standards, Efficiency, optimize costs, other data (EMT. Bycatch), Streamline, New basis for stock assessment, make more use of data, submit data once, fewer data calls.
- **Experts**: Better estimates, Make more use of data, Ecosystem based assessment, data gaps, reproducibility, TAF, submit data once, new basis for stock assessment, less stress, share best practices, save time, efficiency, better estimates. Better understanding of uncertainty.

For ACOM leadership the three keywords where RDBES stands for are:

- **Transformative** – data will be available at a higher resolution than ever before allowing for new types of data transformations, aggregations, integration, and modelling.
- **Transparent** – it allows for increased transparency in terms of both sampling coverage, quantities, and quality as well as finer resolution data on fishing activities in space and time.
- **Trustworthy** – Quality Assured data underpins all ICES advice products the RDBES infrastructure is a key foundation and the database for stock assessment input data.

A more detailed list is in Annex 9.

12 Funding

In past years, the need to foresee funds to support the development of the RDBES was regularly highlighted on different planforms; however, as the RDBES is used by EU stakeholders (e.g. RCGs) and also non-EU countries (as members of ICES), there was sometimes a conflict in allocation funds as the developments for use by EU and broader stakeholders are not straightforward to separate.

During the WGRDBESGOV meeting, it was agreed to look further into writing a project proposal to achieve the objectives to develop the RDBES further and to motivate/stimulate the process of the transition and to make the RDBES more 'popular' for different stakeholders.

The call where the project could be granted can be found here: call-fiche_emfaf-2025-pia-fisheriesscientificadvice_en.pdf[5]

Proposed title of the project: ***DATAWAVE:2027 - Enhancing Fisheries Data Quality and Utilization for Sustainable Management***

This project proposal outlines a comprehensive approach to improving fisheries data to support the objectives of the European Maritime, Fisheries and Aquaculture Fund (EMFAF) 2025 call for proposals. The project focuses on enhancing data quality, accessibility, and stakeholder collaboration to strengthen the scientific basis for management decisions under the Common Fisheries Policy (CFP). Details on the concept note are given in Annex 10.

During all discussions on the project proposal and the possibilities under this grant, the DG MARE representative was not present during the meeting, as well during the subgroup work as during the plenary.

[5] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/emfaf/wp-call/2025/call-fiche_emfaf-2025-pia-fisheriesscientificadvice_en.pdf

13 Recommendations addressed to WGRDBESGOV

Id	Sender	Recommendation	Answer
1	DIG	DIG recommends that WGRDBESGOV includes DIG in the review process of the Data licence update cycle for WGRDBESGOV	DIG will be included in the review process of the Data License. For the moment, the DIG chair will be invited to the WK on confidentiality (Section 10). The revision of data license will come after the WK
2	WGHANSA	Many of the stocks in Iberian waters have been traditionally assessed using unofficial areas within division 9a and 8c, but the data has not been reported at this level of disaggregation in RDBES so far. WGHANSA thinks that it is important that countries report catch and sample data at this level of detail for some of the stocks, as they are used for the data raising. These special areas (9aN, 9aCN, 9aCS, 9aS_C, 9aS_A, 8cW, 8cE) can be added in RDBES in the field 'fisheriesManagementUnit' but it is optional. We request that the next data call for RDBES includes a short paragraph specifiying that this field should be filled-in for the stocks ane.9a, hom.9a, pil.8c.9a, ane.8. Thank you.	Clear guidelines will be included in 2025 DC for countries to fill in the field 'fisheries managemenUnit' with the special areas, for stocks ane.9a, hom.9a, pil.8c.9a and ane.8. After e-mail communication with WGHANSA chair, catch data for stock ane.8 will also be requested by month (instead of by quarter) due to WG needs.
3	RCM	R13: RCG recommends that both the scientific landings and official landings to be mandatory in the RDBES format.	Accepted. Both fields are mandatory now. Due to this change, all commercial landings data that currently exist in RDBES must be re-submitted.
4	WGCATCH	WGCATCH recommends a coordinated approach among parties to streamline the datacall process for both benchmark and the annual fishery datacalls related to commercial catch data compilation and provision. With the upcoming transition to RDBES, replacing InterCatch, WGCATCH considers its involvement essential to properly structure data requests and ensure they reflect the data collection designs. Building on the 2020 WGCATCH recommendation and subsequent actions, WGCATCH proposes scheduling an online meeting to ensure the action list remains relevant, and outline new goals relating to the RDBES. *Background*: The recent benchmark 2024 datacalls presented significant issues that hinder national data providers to respond to and ensure the quality of data for the stock assessments. One of the data calls requested data in new formats, rather than through Intercatch, without any description and guidance, and with too high resolution. While the other requested data using exchange formats for the entire time-series, which leads to excessive and unjustified workload on national providers, leading either to incorrect, or incomplete data being provided. More details about these datacalls will be published with the WGCATCH 2024 report. To prevent delays in the benchmark process, ensure the data are ready within the time frame and the data quality is ensured, a more coordinated approach to data calls is needed.	WGRDBES fully supports this recommendation and will send a similar recommendation to BOG, informing that WGRDBESSGOV wants to be part of the proposed coordinated approach (see Section 4.3)

Id	Sender	Recommendation	Answer
5	WGCATCH	WGCATCH recommends a one day tutorial session aimed to data estimators for the package (RDBEScore) WGRD-BES-EST is developing. WGCATCH considers it will assist the participants in understanding an important RDBES tool and will allow it's use.	We agree with the recommendation. However, given the current workload, and the amount of WK planned for 2025 (see Table). the tutorial session is postponed and will be held in 2026

14 Recommendations from the WGRDBESGOV to WGs and RCGs

14.1 Follow up on 2023 recommendations

Year	Recommendation	Recipient	Answer	WGRDBESGOV comment
2023	WGRDBESGOV recommends the RCGs to make a plan to develop the FDI export module, that is, a functionality allowing the RDBES to be used to fulfil the FDI data call. Background It has been a desire since the inception of the RDBES that it can be used to fulfil the FDI data call. However, it is not a straightforward process. During the last years, WGRDBES have worked intersessionally in order to get the needed variables into the RDBES data model. However, next steps will need a well-defined plan and dedicated workforce to be accomplished (production of the tables, need for a capacity table, in-tegration of the RDBES estimations…)..	RCG NANSEA RCG BALTIC RCG LDF	The RDBES format has been prepared to be able to convert to FDI, but the RDBES is not ready for export to FDI yet, as the national estimates (n at length, n at age, discards etc.) need to be calculated in RDBES, and this is not expected to be ready before 2027.	The development of the FDI export module is postponed for after 2027. Once the national estimates are calculated in the RDBES and the workflow for providing data for stock assessment is robust enough, this module will be developed.
2023	WGRDBESGOV recommends the RCGs to revise the roles and permissions developed by WKRAISE&TAF (1 & 2) and define what do they need for their work. Background During the WKRAISE&TAF (1 & 2) workshops, the RDBES/TAF roles and permissions were defined with a focus on the ICES stock assessment process. RCGs need to revise these roles and permission and check if they fulfil their needs, or whether they need different specifications. More details can be found in Annex 7.	RCG NANSEA RCG BALTIC RCG LDF	Regarding definition of roles and permissions, the RCG needs a new user type "RCG" who has download access to all stocks and countries in the RCG area	RCG answer will be taken into account on the development of the TAF roles and permissions. Included in the report in section 3.4 and Annex 5.
2023	WGRDBESGOV recommends ICES, RCGs and WGBYC to discuss the long-term maintenance of InterCatch, the RDBs and the WGBYC Database for historical data, and en-gage in an investigation of possible solutions.	ICES Data Centre WGBYC RCG NANSEA	More information can be found in Section 5 of the report	We appreciate the answer and consider this issue as closed. Included in the report (Section 5)

Year	Recommendation	Recipient	Answer	WGRDBESGOV comment
	Background 2023 has been the last year that the RDB was used to upload new data. InterCatch will work normally until 2026, and by 2027 the assessment of all stocks will be integrated in the RDBES workflow. The WGBYC Database will also be integrated in the RDBES by 2027, with one single RDBES data call, including bycatch data. These three Databases contains a time-series of data that is still relevant to ICES work (time-series) and RCGs work. Still, keeping them alive reduced to a data storage facility from which historical data can only be downloaded while maintaining the new RDBES up and running for present and future data will be costly. We need to decide how to arrange this maintenance. More details can be found in Section 5 of the report.	RCG BALTIC RCG LDF	• RDB: The tables will be kept (just the tables without the interface). • InterCatch: The tables will be kept, with a minimum interface to view and download data. • WGBYC DB: The future of this DB will be decided when the transition of these data are in a more advanced stage.	
2023	To plan for the transition of bycatch data to the RDBES and provide feedback on their needs so that WGRDBESGOV can give the support needed. Background WGBYC is currently testing if RDBES data model for bycatch data fulfils their needs. Once it is confirmed that RDBES, WGBYC needs to plan the transition from their bycatch database to the RDBES. The objective is that by 2027, there shall only be a RDBES data call, including bycatch data.	WGBYC	During 2024, there was not too much progress. 1. WGBYC says that they need some clarity on data acquisition from RDBES: Would the working group get raw data, or would the group develop the details of what is needed and then a script or annual extraction would be made etc. 2. WGBYC will carry out a further comparison during 2025. To this aim, a specific subgroup will work intersessionally during 2025. It is essential to involve a variety of experts: RDBES, data providers of WGBYC datacall and main users of the data. The collaboration with the core group will also be essential.	WGBYC is an end-user of RDBES data, similar to stock assessment WG. Therefore, the workflow requires national estimators for bycatch data, which are in charge of extracting the data from the RDBES and producing the information that the WG needs. WGRDBESGOV sends a recommendation to WGBYC
2023	WGRDBESGOV recommends ICES and RCGs to issue a joint RDBES Data Call in January 2024, with a deadline in April 2024. To communicate it to the NCs and ACOM. Background The RCG and ICES data calls partially overlap in time, geographical and data coverage. It is therefore advantageous that the	ICES RCG NANSEA RCG BALTIC RCG LDF	The first joint RCG-ICES RDBES data call was issued on 29 January 2024, with a deadline of 2 April and requested landings and effort data for 2021-2023 and commercial sampling data for 2023	We appreciate the answer and consider this issue as closed.

Year	Recommendation	Recipient	Answer	WGRDBESGOV comment
	timings and content of the RCG and ICES data calls are closely co-ordinated and, where possible, joint data calls are issued. In January 2024 a joint RCG-ICES data call (DC) with deadline 1st of April will be issued. The DC will ask for landings and effort data (CL and CE) from 2021-2023, and sampling data (CS) from 2022-2023, including data collected under DCF programmes (both pilots and routine). Further information can be found in Section 4 of this report.			
2023	WGRDBESGOV recommends ICES to discuss the fixed deadlines proposed for the provision of data to the AWG. Background The implementation of commercial catch estimation of ICES stocks in RDBES will re-quire additional work in very tight deadlines at the beginning of the year. At present the deadlines of data submission for AWGs are changing from year-to-year, even if the advice calendar stays constant. To plan and secure transition to the new system, WGRDBESGOV identified a need by data submitters to have predictable (fixed) deadlines of data submission for the different AWGs over the 2024-2026 period. More details can be found in Section 4 of WGRDBESGOV report.	Secretariat/ACOM/FRSG chair	ICES will take into account the proposed calendar in the planification. ICES noted during the WGRDBESGOV meeting that it is not completely predictable when a WG will meet in the following year. Therefore, WGRDBESGOV and ICES should meet annually to discuss the planned dates for the following year. Generally, the deadline for a data call is set 1 month before the WG meets.	We appreciate the answer and will maintain annual follow up with ICES.
2023	WGRDBESGOV recommends the ICES to make a plan to take over the outputs created by ISSG RDB Overviews for ICES. This includes the adaptation of the existing reports to the new RDBES format. **Background** The RDBES Catch and Effort overviews, the WGBFAS report, and the Benchmark templates are based on RDB data, and thus they exist only for data until 2022. Work is needed to adapt it to the RDBES data format. RCGs will adapt the RDBES Catch and Effort overviews according to their needs and deadlines, but they will not adapt the products developed for ICEs use.	ICES (AWG and BOG)	ICES acknowledges the added value of the overviews for the EWGs and that it would be a good support for the EWGs. ICES is interested in the overviews, but no concrete actions are taken yet.	We appreciate the answer and will maintain annual follow up with ICES.

Year	Recommendation	Recipient	Answer	WGRDBESGOV comment
	A discussion with ICES needs to take place to decide how the adaptation of the ICES related reports to the new format and the generation of these reports can be handled by ICES.			
2023	WGRDBESGOV recommends the WGTAFGOV to prioritize the specification of the RDBES-TAF system and secure training to data estimators and stock coordinators in the set up and use of the system. In this framework, WGRDBESGOV suggests the establishment of a core-group for RDBES-TAF development, including TAF developers, national estimators and stock coordinators. The aim of such core-group should be specifying the TAF system with regards to estimation of commercial data and setting up a training programme with focus on the national data providers that will use that system. **Background** The core parts of the RDBES are complete and ready to be used, but to be fully implemented, it will need to take place in TAF, within a data flow that is still being developed at ICES level. ICES needs to secure that the TAF system (including roles and access permission) is developed in a way that is well adapted to commercial catch estimation, providing for a smooth and secure flow between the data in RDBES, the new National and Regional Catch Estimate format,	WGTAFGOV	WGRDBESGOV chairs will keep a closer contact and communication with the WGTAFGOV chair and the ICES TAF experts to be informed on a more regular basis about the progress TAF/RDBES work, and to align better and quicker the needs from RDBES to TAF.	Regular meetings will be planned between the ICES TAF experts and the WGRDBESGOV chairs. This will be part of the roadmap from 2025 onwards and be taken into the follow up of the roadmap.

14.2 Recommendations 2024

N	Year	Recommendation	Recipient
	2024	It is strongly recommended to implement a backup system for the ongoing TAF work, as all tasks are currently dependent on a single individual. There have already been situations where updates to R packages on the TAF server were required, but the responsible person was unavailable, leading to significant delays and halting progress. It is essential to establish a robust backup plan, where another team member can step in to manage critical tasks, such as R package updates, during times of absence. This backup plan will help maintain workflow continuity and prevent bottlenecks that hinder progress. Additionally, the backup system should be part of a broader strategy for risk management, ensuring that other critical processes do not solely rely on a single expert. On a regular basis (by quarter), feedback will be given to the WGRDBESGOV chairs. Milestones should be defined by the WGTAFGOV in coordination with the ICES TAF experts and inserted in the RDBES roadmap.	WGTAFGOV
2	2024	WGRDBESGOV recommends WGBYC to: test if all the information required for their work is in the RDBES and inform WGRDBESGOV (core group) if any further development is needed. define the format of the data they want to receive from National estimators. Similarly to RCEF, this format will be created by national estimators using RDBES data,	WGBYC
3	2024	WGRDBESGOV recommends ICES BOG a coordinated approach among parties to streamline the datacall process for both benchmark and the annual fishery datacall related to commercial catch data compilation and provision. With the upcoming transition to RDBES, replacing InterCatch, WGRDBESGOV considers its involvement essential to properly structure data requests and ensure they reflect the data collection designs.	ICES BOG
4	2024	WGRDBESGOV recommends ICES DataCentre to consider the following guidelines when managing RDB and InterCatch Data Bases: **InterCatch**: once the system is terminated, an interface needs to be maintained (see report section 5 for the details). **RDB**: the RDB system interface could be terminated. There is only a need to keep the RDB database alive with internal access to being able download requested data.	ICES Data centre

15 New chair(s) and next meeting date and venue

The next meeting will be held from Monday 24 November (10:00)–Friday 28 November 2025 (13:00) at ICES HQ, Copenhagen, Denmark.

Harriët van Overzee will be the chair for the period 2025–2027. Lucía Zarauz will be chair in 2026. A new chair will be needed in 2027 to co-chair.

Annex 1: List of participants

Name	E-mail	Type of participation (V=Virtual, P=Physical)
Adriana Nogueira	adriana.nogueira@ieo.csic.es	V
Ana Claudia Fernandes	acfernandes@ipma.pt	P
Colin Millar	colin.millar@ices.dk	P
David Currie	david.currie@Marine.ie	P
Edvin Fuglebakk	edvin.fuglebakk@hi.no	V
Els Torreele	els.torreele@ilvo.vlaanderen.be	P
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Lotte Worsøe Clausen	lotte.worsoe.clausen@ices.dk	P
Lucía Zarauz	lzarauz@azti.es	P
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Maksims Kovsars	maksims.kovsars@bior.gov.lv	P
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Sieto Verver	sieto.verver@wur.nl	P
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Name	E-mail	Type of participation (V=Virtual, P=Physical)
Stefanos Kavadas	stefanos@hcmr.gr	V

Annex 2: Resolutions

2022/MT/DSTSG11

The **Working Group on Governance of the Regional Database & Estimation System** (WGRDBESGOV), chaired by Els Torreele, Belgium, and Lucía Zarauz, Spain, will work on ToRs and generate deliverables as listed in the table below.

	MEETING DATES AND VENUES	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2023	20–24 November 2023, ICES HQ, Copenhagen, Denmark	E-evaluation and interim report by 1 March 2024 to DSTSG	
Year 2024	25–29 November 2024, ICES HQ, Copenhagen, Denmark	E-evaluation and interim report by 1 March 2025 to DSTSG	Three-year period ends for Els Torreele, Belgium.
Year 2025	24–28 November 2025, ICES HQ, Copenhagen, Denmark	E-evaluation and final report by TBD to DSTSG, ACOM, SCICOM	New chair: Harriët van Overzee, Netherlands.

ToR descriptors

	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Follow-up the status of the development of the Regional Database & Estimation System (RDBES) and its project plan for implementation, including the funding of the outstanding development. Adjust the project plan as required. Oversee and advise on the interpretation and prioritization of recommendations for the RDBES development. Identify user guidance and training required for RDBES users.	The Regional Database & Estimation System (RDBES) will be extensively used by ICES member states, the EU Regional Coordination Groups, and ICES expert groups to store detailed commercial fisheries sample data. The RDBES will replace the current ICES InterCatch system and will become a database and estimation system for ICES Fisheries Advice. The RDBES is therefore a key development to support the ICES advisory process.	3.1, 3.2, 3.3	3 years	An up-to-date roadmap for the Regional Database & Estimation System (RDBES) developments describing when functionality will be available. The RDBES project plan is monitored and fulfilled. Recommendations for relevant workshops are made.

	Description	Background	[Science Plan Codes]	Duration	Expected Deliverables
b	Provide a platform for feedback to the Regional Database & Estimation System (RDBES). Liaise with the ICES EGs, (incl. workshops) and RCG using and supporting the RDBES. Appropriate actions to be taken with assigned responsibilities in cooperation with the FRSG chair and the ACOM chair, and resource requirements will be listed and prioritized. Establish and follow-up the required subgroups (ISSGs including the existing "Core group"), created in support of the functioning and use of the RDBES.	The Regional Database & Estimation System (RDBES) should develop to meet the requirements of a broad range of users and needs to be responsive to user feedback.	3.1, 3.2, 3.3	3 years / generic ToR	A public Regional Database & Estimation System (RDBES) GitHub site is maintained - this makes the data model available, and provides a platform for users to raise and discuss issues. ISSG (such as the existing "Core group") complete any required tasks (e.g. refining specifications and answering user queries) Recommendations from users are responded to.
c	Oversee and summarize how the Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) are used in the EU Regional Coordination Groups (RCGs), and ICES expert groups, along with any other uses. Where possible, share any outputs with other interested groups and users.	The aims of the new Regional Database & Estimation System (RDBES) include increasing the awareness of fisheries data collected by the users of the RDBES and the overall usage of these data. Therefor it is important to monitor how different users are using the data.	3.1, 3.2, 3.3	3 years / generic ToR	Summaries of the existing commercial fisheries Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) data calls are published annually. Summaries of the use of RDB/RDBES data are published annually.
d	Review the data licence and data policy of the Regional Database &	The Regional Database & Estimation System (RDBES) is intended to host	3.1, 3.2, 3.3	3 years / generic ToR	Appropriate Regional Database & Estimation System (RDBES) data license and

	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
	Estimation System (RDBES)	data from multiple ICES Member Countries and EU member states. Different users will have different permissions (depending on their needs). Data license and governance of the RDBES is therefore a key topic to ensure that it can function in a secure and efficient manner.			governance policies are agreed and implemented

Summary of the work plan

Year 1	An annual meeting will be held, as well as any intersessional work required, to work on the ToRs. ToR a) • Review the Regional Database & Estimation System (RDBES) project plan. • Review feedback summaries from RCGS, RDBES workshops (e.g. WKRDBES-INTRO, WGRDB-EST, WKRDBES-RAISETAF) and supporting WGs (ex WGCATCH, WGBIOP) • Review results and feedback from the RDBES data call. • Adjust the project plan as required. ToR b) • Information on the public RDBES GitHub (https://github.com/ices-tools-dev/RDBES) site is kept up-to-date • Issues raised on the GitHub site are responded to in a timely manner • The required ISSGs (incl the 'Core Group' meet as required to work effectively. ToR c) • Review and summarize responses to the RDBES data calls • Determine which groups have used RDBES data during the year and, where possible, view any of their outputs based on RDBES data. • Review any feedback arising from those groups. • Ensure data licence and governance policies are being adhered to during data use. • Where possible, share outputs and code from the different users of RDBES data ToR d) • Agree to a RDBES data license and data policy • Make any further changes required to the RDBES data governance policies and procedures • Ensure data governance will be suitable for using RDBES data within ICES stock assessment
Year 2	An annual meeting will be held, as well as any intersessional work required, to work on the ToRs. ToR a) • Review the Regional Database & Estimation System (RDBES) project plan.

	• Review feedback summaries from RCGS, RDBES workshops (e.g. WKRDBES-INTRO, WGRDB-EST, WKRDBES-RAISETAF) and supporting WGs (ex WGCATCH, WGBIOP) • Review results and feedback from the RDBES data call. • Adjust the project plan as required. ToR b) • Information on the public RDBES GitHub (https://github.com/ices-tools-dev/RDBES) site is kept up-to-date • Issues raised on the GitHub site are responded to in a timely manner • The required ISSGs (incl the 'Core Group' meet as required to work effectively. ToR c) • Review and summarize responses to the RDBES data calls • Determine which groups have used RDBES data during the year and, where possible, view any of their outputs based on RDBES data. • Review any feedback arising from those groups. • Ensure data licence and governance policies are being adhered to during data use. • Where possible, share outputs and code from the different users of RDBES data ToR d) • Agree to a RDBES data license and data policy • Make any further changes required to the RDBES data governance policies and procedures • Ensure data governance will be suitable for using RDBES data within ICES stock assessment
Year 3	An annual meeting will be held, as well as any intersessional work required, to work on the ToRs. ToR a) • Review the Regional Database & Estimation System (RDBES) project plan. • Review feedback summaries from RCGS, RDBES workshops (e.g. WKRDBES-INTRO, WGRDB-EST, WKRDBES-RAISETAF) and supporting WGs (ex WGCATCH, WGBIOP) • Review results and feedback from the RDBES data call. • Adjust the project plan as required. ToR b) • Information on the public RDBES GitHub (https://github.com/ices-tools-dev/RDBES) site is kept up-to-date • Issues raised on the GitHub site are responded to in a timely manner • The required ISSGs (incl the 'Core Group' meet as required to work effectively. ToR c) • Review and summarize responses to the RDBES data calls • Determine which groups have used RDBES data during the year and, where possible, view any of their outputs based on RDBES data. • Review any feedback arising from those groups. • Ensure data licence and governance policies are being adhered to during data use. • Where possible, share outputs and code from the different users of RDBES data ToR d) • Agree to a RDBES data license and data policy • Make any further changes required to the RDBES data governance policies and procedures • Ensure data governance will be suitable for using RDBES data within ICES stock assessment

Supporting information

Priority	The activities of this group will ensure the development, the use of the Regional Database and Estimation System, RDBES. The RDBES will be the database for the Baltic Sea, North Sea & Eastern Arctic, North Atlantic and Long-Distance Fisheries Regional Coordination Groups (RCGs). The RDBES will replace the current ICES InterCatch system so it will become the database and estimation system for ICES Fisheries Advice. Consequently, these activities are considered to have a high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. Countries are encouraged to ensure that their national members have sufficient resources to conduct the necessary intersessional work to address the ToRs. For EU Member States, work within this WG can be funded under the Data Collection Framework (DCF)/European Maritime, Fisheries and Aquaculture Fund (EMFAF).
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	SharePoint and meeting room requirement.
Financial	No financial implications.
Linkages to advisory and science committees	The stock assessment Working Groups will be impacted by the development of the RDBES.
Linkages to other groups	There is a strong thematic link with groups including WGCATCH and WGBIOP. Since the RDBES will interact with the ICES Transparent Assessment Framework (TAF) there is also a close link with WGTAFGOV. It will also be relevant to other data governance groups under the new Data Science and Technology Steering Group (DSTSG).
Linkages to other organizations	The RDBES will support the work of the EU Regional Coordination Groups (RCGs).

Annex 3: Feedback from RDBES WG and WK

1. Workshop on introduction to RDBES data submission (WKRDBES-INTRO2)

The Resolutions for the WKRDBES-INTRO3 are following:

The Workshop on introduction to RDBES data submission (WKRDBES-INTRO) chaired by Henrik Kjems-Nielsen, ICES Secretariat will be held online for a total of three days from 24–26 September 2024 to:

a) Describe and explain the RDBES data model to national data submitters and introduce participants to the necessary documentation for providing data.
b) Arrange support sessions where participants can request expert guidance on adapting national data to the RDBES data model.

At the WKINTRO the data model/format of the commercial fisheries RDBES was described and explained to national data submitters, so the data submitters can convert the national data into the RDBES format and successfully upload the data into the RDBES. Henrik Kjems-Nielsen, who chaired the workshop, gave many presentations, and many persons from the Core Group; Liz Clarke, Dave Currie, Kirsten Birch Håkansson and Ana Claudia Fernandes also gave presentations. The workshop is divided into two parts. The first 1½ day presentations and explanations are given regarding the data model and use. The second 1½ day the countries can request a support session for clarifying country specific questions. Typically several participants from the same country ask specific national questions. The questions were answered by the Core Group, and therefore it is essential that the Core Group participated in the workshop. The questions could of course be asked at any time during the workshop. But the support sessions give an obvious opportunity for the countries to describe the national situation and to ask more detailed national specific questions (e.g. which hierarchy to use?). There were 41 participants from 17 countries. This year only 3 countries requested support sessions, last year it was 9 countries, but it is still relevant to have the support sessions.

At the next WKRDBES-INTRO the countries will be asked if other persons can listen in to potential learn from the country specific questions.

The participants said that the WKRDBES-INTRO was very good, well organized and explained the format well. The participants agreed that the workshop should continue in the setup it has 3 days online and with the setup of the presentations and the country support sessions. Then there is also time for the participants to do other needed tasks. Autumn is good timing because it is a less busy time compared with the first part of the year, because of all the stock assessment Working Groups. It is important to keep the country support sessions.

The subgroup in the WGRDBESGOV suggested to make it more clear in future for participants that they can sign up for the whole workshop, but they can also participate in the presentation part, which is the first 1½ day and/or participate in only the second half, where they can request a country specific session for clarifying country specific questions.

2. Workshop on Raising Stock Data with the RDBES data model (WKRDBES-RaiseStock)

During their 2023 meeting WGRDBESGOV (https://doi.org/10.17895/ices.pub.25358395) voiced the clear need to develop solutions for the use of the RDBES in replacement of InterCatch. National institutes need to be prepared to change the national raising of data towards the use of the RDBES format. Realistic use of RDBES estimates is also necessary in order for the RDBES development to proceed according to the roadmap. National estimates are an important intermediate calculation for current estimation practices, and an important result in itself for other uses of the RDBES, such as responding to EU data-calls.

The work done in previous workshops demonstrated that some national estimations could be produced from RDBES data however it was necessary to prove that we can successfully reproduce current outputs for a single stock. Thus, the Workshop on Raising Stock Data with the RDBES data model (WKRDBES_RaiseStock) was focused on Northeast Atlantic mackerel (mac.27.nea) data. In previous workshops it had been noticed that participants tended to spend a lot of time thinking about how to work with TAF and this reduced the time spent on migrating code to use the RDBES format. So, it was decided that TAF would not be a focus of the current workshop.

The terms of reference (ToR) for the workshop were:

a) Re-produce national InterCatch estimates of commercial catches of mac.27.nea using R scripts that start from national RDBES extracts;
b) Re-produce all other types of national files related to commercial catch data usually supplied to stock assessments of mac.27.nea using R scripts;
c) Document in a template R script the steps taken with regards to data extraction, cleaning, preparation, estimation and production of final formats and other outputs for mac.27.nea from national RDBES extracts;
d) Compile information on any aspects found limiting reproduction of existing outputs and propose a path forward for the solution of those problems that is in line with the RDBES implementation plan.

The main aim of the workshop was to provide a space for countries to work on re-producing national InterCatch estimates of commercial catches of mac.27.nea. To this end the majority of the workshop agenda was reserved for participants to work on adapting their national code to the RDBES. Plenary sessions were used to introduce the overall terms of reference and tasks, and well as reporting back on progress.

Results

Participants made good progress in migrating their national estimation code for Northeast Atlantic mackerel (mac.27.nea) data to use the RDBES data (see summary table below). Three institutes expressed confidence that if required they would be able to fulfil at least the mac.27.nea requirements of the 2025 WGWIDE data call using RDBES format data.

Participant Institute	Prior effort	RDBES upload status	Quantity	Implementation	Reproduction
DTU Aqua, Denmark	None	Complete	LLN, LAN	Partial	Started
Faroe Marine Research Institute, Faroe Islands	None	Partial	Individual fish and total landings	None	Partial
Thünen Institute of Sea fisheries, Germany	Days	Complete	LAN	Partial	Partial
Marine and Freshwater Research Institute, Iceland	None	None	None	None	None
Marine Institute, Ireland	Weeks	Complete	LAN, LLN	Complete	Reproduced
WUR, Netherlands	Weeks	Complete	LAN, LLN	Complete	Reproduced
IMR, Norway	None	Complete	LAN	Ad-hoc method: Partial True estimate: Issues	Ad-hoc method: Reproduced True estimate: Issues
National Marine Fisheries Research Institute, Poland	Weeks	Complete	Not applicable	Not applicable	Not applicable
Scottish Government, Marine Laboratory, Scotland (UK)	Weeks	Complete	LLN, LAN	Complete	Partial
AZTI, Spain	Weeks	Complete	LLN	Partial	Partial
IEO, Spain	Weeks	Complete	LLN	Partial	Partial
SLU Aqua, Sweden	None	Complete	Landing weights. No biological samples are collected.	Completed	Reproduced

An R template for estimation was evaluated during the workshop – the feedback from this will be given to the chairs of the Workshop on TAF National Estimation Templates (WKTNET), scheduled for January 2025.

While no new issues that would prevent progress were identified it was highlighted that there are two known issues that will cause problems but that haven't been resolved yet.

Issue 1) Stock code is still needed

There is a need for the stock code to be appended to the RDBES data. The intention is that ICES will maintain the stock code list and that it will be automatically appended to the RDBES data to avoid inconsistencies between countries. However, this is not in place yet.

Issue 2) TAF, GitHub, and Confidential Data

During the Second Workshop on Raising Data using the RDBES and TAF (WKRDBES Raise&TAF2, https://doi.org/10.17895/ices.pub.24648546) it was identified that not all countries would be allowed to push confidential RDBES data to a GitHub repository (public or private). This would mean that not everybody would be able to use the proposed RDBES/TAF system for estimation data. The workshop believed that the best way forward was for the ICES Secretariat to develop a secure web service to fetch RDBES data. This would have the benefits of: i) being a more efficient way for scripts in TAF to import data (as compared to manually downloading and copying RDBES data files), and ii) remove any potential problems related to storing RDBES data on GitHub. During discussions at the WKRDBESRaiseStock it was pointed out that this web service has not been developed yet so the problem related to storing detailed RDBES data on GitHub still remains unresolved.

Future Workshops

It was planned that this would be the first of a set of three workshops aiming to support the transition of current national estimation procedures to RDBES. In order to help with planning these future workshops WKRDBESRaiseStock discussed whether participants would like to continue with the same workshop format or make changes.

Generally, it was agreed that it would be good to look at a group of related stocks rather than a single stock – this would mean more countries would need to participate, and would also speed up the transition to the RDBES. However, we should avoid making the workshops too general since the content would then overlap with the proposed WKNatEst workshops.

The current workshop was held in a split format, with 2 days in June and 2 days in November. The long gap between the two sessions was necessitated by the ICES cyber-attack[1]. The participants generally felt that a single session would be better than a split format since it would allow them to concentrate on the work for a longer period.

In terms of the content it was identified that TAF training was still needed but that this might be covered by other proposed workshops. Future workshops should describe the Regional Catch Estimates Format (RCEF) which will replace the InterCatch format for estimation outputs. This format is not finalized yet so was not included in WKRDBESRaiseStock. It was also pointed out that there will be a function available to transform files from the InterCatch format to RCEF so there is no need for countries to delay migrating their estimation code.

3. Working group on estimation with the RDBES data model (WGRDBES-EST)

The Working Group on estimation with the RDBES data model (WGRDBES-EST) met for the 4th time from 14 to 18th October 2024 at Lisbon, Portugal, with 10 participants (4 online). The Working Group aimed to:

a) Discuss the feedback from WGRDBESGOV and RDBES core group on WGRDBES-EST progress alongside results achieved intersessionally, and identify the R-code from the RDBEScore package that needs development, refinement and/or testing. Continue to develop code and functions.
b) Continue to develop and document R scripts and functions for visualization of data in RDBES data format to be compiled in the RDBESvisualise package. Discuss new types of summary information useful to be included in the RDBESvisualise package.
c) Continue the work in RDBEScore and RDBESvisualise packages, incorporating existing developments; prepare stand-alone ices packages; test and implement compatibility of both packages with CRAN requirements; suggest a work-flow and roadmap for peer-review of RDBEScore and RDBESvisualise functions and scripts.
d) Evaluate updates of the RDBES data model from an estimation perspective. Document any problems with RDBES data model relating to statistical estimation and suggest solutions.
e) Evaluate progress obtained in estimation of commercial catches and suggest a way forward to WGRDBESGOV.
f) Continue the collaboration with WGRDBESGOV (and relevant groups thereunder) and WGTAFGOV to identify requirements for an integration of WGRDBES-EST outputs into TAF.

ToR a. (and part of ToR c.) RDBEScore

The RDBEScore package aims to provide functions based on the RDBES data format to assist end-users. It includes sets of functions for: 1) data import and data handling; 2) data preparation for the estimation; 3) estimation (e.g. unbiased design-based, ratio). It also includes example datasets to test the code and vignettes demonstrating the use of the main functions.

In the 2024 meeting, the RDBEScore GitHub issues list was updated: the group went through the list of pending issues that needed a plenary discussion to be solved and also, as the work progresses, more issues were also added for future discussions.

There was a subgroup dedicated to discussing and draft a plan to develop ratio estimation functions, since this type of estimation is the most commonly used by countries. The group agreed that the inclusion of this type of functions can be useful for stock assessors and make the RDBEScore package more prone to be used for estimation purposes. Two different approaches are being developed and discussions were held during the meeting, about the input data needed, the linkage between sampling data and fishery data, etc. The progress made during this year's meeting is still under development and it was not incorporated yet in the RDBEScore package. The last version of the package is available for download on the ICES GitHub (https://github.com/ices-tools-dev/RDBEScore).

ToR b. (and part of ToR c.) RDBESvisualise

The RDBESvisualise package aims to include a set of functions that are exported to allow the end-user to explore the data and also give the possibility to produce a final overview (in *.Rmd* format) built on them. There is already a draft plan on the type of outputs to produce. The set of functions to be exported (and available for the end-user) refer to subsetting the data of interest for the user, visualization of data and checking it to identify problems that may affect the estimation process. They are also meant to provide tools to summarize the data through visualization (i.e. plots and tables) and assist the estimation by providing p.e. a summary of the methods used and the sampling sizes, among others.

The other subgroup worked on the development of this package and started by looking at the plan drafted, functions developed and issues from the previous year (https://github.com/ices-tools-dev/RDBESvisualise). Participants assigned themselves for developing/improving specific functions of the package and also for starting to draft the package vignettes.

Discussions within each subgroup were held to agree on specific features of the code related both to the functions and RDBES formats. Plenary sessions were also used to discuss/agree on different types of code-related issues or specific questions. WGRDBES-EST has not encountered significant data model issues that prevent the use of RDBES for statistical estimation.

WGRDBES-EST made a recommendation to WGCATCH to collect information on the ratio estimation methods national institutes use (update of the information from 2019 WGCATCH report) in order to have a clearer idea on what to code for the ratio estimation function.

ToR c. (…) Test and implement compatibility of both packages with CRAN requirements; suggest a work-flow and roadmap for peer-review of RDBEScore and RDBESvisualise functions and scripts.

Not much progress was made.

ToR d. Evaluate updates of the RDBES data model from an estimation perspective. Document any problems with RDBES data model relating to statistical estimation and suggest solutions.

No major data model issues, that prevent the use of RDBES for statistical estimation, were detected.

ToR e. Evaluate progress obtained in estimation of commercial catches and suggest a way forward to WGRDBESGOV.

- Started the development of the ratio estimation code as this method is more commonly used and will probably make the package more prone to be used by end-users for estimation purposes
- Regarding the ratio estimation, the group made a recommendation to WGCATCH to update the information reported in 2019 in what relates to the way countries are doing the ratio estimation. The aim is to try to incorporate different approaches in the package.
- No progress was made on the code for the design based (unbiased) estimation

ToR f. Continue the collaboration with WGRDBESGOV (and relevant groups thereunder) and WGTAFGOV to identify requirements for an integration of WGRDBES-EST outputs into TAF.

- Presentation of the RCEF in the WGRDBES-EST meeting – RDBEScore will need to export the estimates in this format
- Subgroup on Data Quality – possible collaborative work for the sampling data (RDBESvisualise package)
- Presentation of the developments of this WG
- WGTAFGOV – not much progress also because the estimation and the output format are still being worked and discussed under WGRDBES-EST/WGRDBESGOV
- Presentation from RDBFIS in the WGRDBES-EST meeting to have an overview of the project and to exchange some ideas

Future plan

- Work on the roadmap for peer-review of RDBEScore and RDBESvisualise functions and scripts

- Continue developing/improving the code for the ratio estimation; build the RDBEScore package with the new updates
- Continue developing and work for the launch RDBESvisualise package
- Request RDBES real data available to test the packages
- WK for end-users - WGCATCH proposed WGRDBES-EST to have a 1-day WK dedicated to explaining the workflow and functionalities of the RDBES packages
- 5 intersessional meetings are planned and scheduled (11th February, 25 March, 6th May, 17 June and 23 September, at 10h CET)
- Date for the next meeting: 13–17 October (IJmuiden, The Netherlands)

Plenary discussion in WGRDBESGOV 2024

The progress of the WGRDBES_EST packages development was discussed because there is a limited number of people involved in the work and there is the need for the packages to be ready for use in 2027.

For this type of ongoing RDBES work, where there is a need for regular code updates and R package development and maintenance, WGRDBESGOV is proposing to have a dedicated project with specific funding to accommodate this effort to progress faster in the RDBES-related work (see brief description of the project aims in Section 12. Funding).

Regarding the 1-day WK proposed by WGCATCH, to explain the workflow and functionalities of these RDBES packages, it was decided to postpone it to a later stage of the RDBES work because during 2025 there are already several WGs and WKs planned and the group thinks that, at this stage, the training for the use of those packages may not be the priority.

4. Working group on Stock Coordination with the RDBES data model (WGRDBES-StockCoord)

The Working Group (WG) on Stock Coordination with the RDBES data model (WGRD-BESStockCoord), chaired by Kirsten Birch Håkansson (Denmark) and Sofie Nimmegeers (Belgium), was held online, 21–25 Oktober 2024 with the objective to:

a) Refine the specification of the exchange format (RCEF) between national or regional catch estimation and stock coordination
b) Develop R scripts and functions for stock coordination using the RCEF.
c) Coordinate the peer-review and inclusion of the outputs in the RDBES R packages.
d) Establish a road forward to the development of code and procedures used in ICES stock coordination.
e) Collaborate with WGRDBESGOV and WGTAFGOV to secure the integration of outputs from WGRDBESStockCoord in TAF.

The new national/regional catch exchange format (RCEF) serves to standardize the data exchange between the national estimation procedures and the stock coordination tasks within the RDBES. Initial specifications and draft format proposals were developed during the WKRD-BES_Raise&TAF 2022–2023 workshops and by the intersessional subgroup of WGRDBES-GOV. The WGRDBESStockCoord further refined these proposals, to meet the needs of most of the assessment working groups, but this format still requires further intensive testing by the national estimators and stock coordinators and may need to be expanded to ensure broader applicability and robustness. The following format requirements were defined by the WG:

The Census Catches Table is designed to declare census landings and link them with estimated catches (discards and BMS) and biological distributions (age, length, width). Changes include adding columns for working groups (to reflect fleet differences across working groups), stock-specific data (to handle complex stock definitions), and removing the "month" and “statistical rectangle” column, now in the Spatial Landings Details Table. The inclusion of "fisheriesManagementUnit" for functional unit stock assessments and the ability to provide multiple variables 5 (scientific weight, official weight and total number of fish), enhance the flexibility.

The Spatial Landings Details Table specifies census landings by rectangle, month, and fleet, separating detailed statistical rectangle data for simplicity.

Age/Length/Width Distributions and the Fish Domain Table organize biological parameters, adding columns for flexibility and specificity, like biological variable type and plus-group age categorization.

The Estimated Catches Table handles discard and BMS data separately from biological distributions as the link of the latter with the Fish domain table is not relevant to those estimated discard and BMS fractions. In some cases, e.g. a commercial species Lophius, the landings are estimated but that will need to be reviewed later.

The Effort Table mirrors the Census Catches Table's structure, addressing multiple variables and fleet definitions across working groups, ensuring comprehensive and adaptable reporting formats.

Since the WG focused on refining the RCEF in this first meeting, the specifications of the stock coordination format (SCF) were not defined during this meeting.

Prior to the meeting, participants completed a questionnaire on their use of InterCatch in stock coordination procedures. The survey prioritized function development by asking about applied weighting factors and whether discard raising and allocations were stratified or grouped. Responses covered 26 stocks across various working groups, including WGBIE, WGNSSK, WGWIDE, WGBFAS, HAWG, and WGCSE. Most stock coordinators used InterCatch, while others relied on R scripts for specific tasks, such as splitting the her.27.3a47d stock, which InterCatch does not support. Default weighting factors (Landing CATON) were commonly used for discard raising, and both manual and automatic methods were employed for landing-discard matching and age/length allocations. Stratification setups varied, with some grouping strata and others addressing them individually.

The WG worked on developing tools to support data quality checks and raising processes for discard tonnage and BMS, using the RCEF and focusing on flexibility and usability. The proposed approach involved modular functions to define raising strata, use linked census and catch estimates for ratio estimation, and ensure consistent strata. Initial implementations were tailored for discards and included functions for defining strata and performing raising, with user options for assembling results. However, user-friendly wrapper functions and support for BMS were not yet developed due to time constraints. The group emphasized modular coding for maintainability and opted for widely-used R packages (e.g. dplyr, tidyr) to enhance collaboration and debugging.

A generic function for tile plots was developed to visualize census or other data by representing catch weights as colours in a grid, using customizable x- and y-axes and facets (e.g. year, country, catch category). The function consists of two parts: data aggregation at chosen levels and visualization with tiles. Built with ggplot and tidyr, it supports piping and additional ggplot elements for flexibility. Preliminary work also explored visualizing data used to fill in missing entries, aiming to avoid unreliable imputations based on small or unrepresentative samples. While various display methods were tested, these visualizations remain a work in progress.

A function was designed to facilitate the transition from the InterCatch input format to the RCEF, primarily focusing on supporting historical submissions and assisting during the transition period (swift from InterCatch to RDBES).

The ultimate objective is to integrate the functions into an R package that will be made publicly available on the ICES GitHub. However, since the development of the R code is still in its early stages, this aspect was not discussed during the initial meeting.

The integration of the RCEF within the RDBES/TAF framework was provided by Colin in an online presentation later (22 November) than the actual meeting days. The concept of using artifacts was explained, highlighting a new procedure in the TAF output phase to save national estimation output on the TAF server in the RCEF format.

To ensure continued progress over the coming three years, a structured approach involving intersessional work is essential. Therefore, the WG decided to schedule an intersessional 1 day meeting each quarter to have an update on the progress and to involve WGCATCH and WGTAFGOV.

Plenary discussion in WGRDBESGOV 2024

- The question was raised whether the RCEF should be expanded to meet the needs of all working groups. It was decided to focus initially on the working groups that use the InterCatch output for assessments, with the possibility of later expanding to those that only upload data into InterCatch but do not use it further for assessments, as well as those who do not use InterCatch at all. Henrik was asked to provide an overview of this information, but due to GDPR concerns, it needs to be checked first whether this is possible to provide.
- Input was also requested regarding whether other types of data, besides commercial data, should be supported in the RDBES, e.g. mortality and recruitment indices? It was agreed that this is not the intended purpose.
- What is the view of WGRDBESGOV on a sustainable framework for future maintenance of the R packages? As the R functions continue to evolve, they will need regular updates

and maintenance within the R package. To support this ongoing effort, funding is essential. The required funds will be requested through the RDBES project, which will be submitted as part of a proposal for EU action grants focused on Scientific Advice for Fisheries. These grants are provided under the European Maritime, Fisheries, and Aquaculture Fund (EMFAF). The funding call falls under the 2024–2025 Work Programme, specifically under action 2.1.2, which aims to improve scientific knowledge to strengthen the science-based management decisions under the Common Fisheries Policy (CFP). This initiative will be managed by the European Climate, Infrastructure and Environment Executive Agency (CINEA).

Annex 4: Feedback from ICES WG

1. ICES RDBES development

2. Commercial catches (WGCATCH)

The 2024 WGCATCH meeting addressed several key topics relevant to WGRDBES-GOV. Among these was the review of the RCG ISSG Métier and Transversal template, aimed at collecting information on the current methodology used by each MS for the provision of the CL and CE tables. Under ToR a/e, discussions focused on the transition to RDBES and TAF, emphasizing the need for recommendations to facilitate the integration process. Challenges contributing to low or no confidence in this transition were highlighted, including:

- Lack of prior experience with TAF.
- Concerns about adapting the TAF environment to manage a large number of stocks per country.
- Misalignment between the TAF structure and current national estimation frameworks.
- Capacity-building efforts that are only now being initiated.

A critical topic was the benchmark data calls and how to streamline the process post-transition to RDBES. To that end, WGCATCH recommended the following:

WGCATCH recommends a coordinated approach among parties to streamline the datacall process for both benchmark and the annual fishery data calls related to commercial catch data compilation and provision. With the upcoming transition to RDBES, replacing InterCatch, WGCATCH considers its involvement essential to properly structure data requests and ensure they reflect the data collection designs. Building on the 2020 WGCATCH recommendation and subsequent actions, WGCATCH proposes scheduling an online meeting to ensure the action list remains relevant and outline new goals relating to the RDBES.

Additionally, a one-day tutorial is proposed, followed by a work proposal (WKNatEst) aimed at easing the transition. Finally, the RCEF will be reviewed to ensure comprehensive alignment with ongoing process improvements.

3. Biological data (WGBIOP)

i. Maturity

1. Maturity Scale and Data Reporting Issues

- *SMSF Adoption (2020):* The internationally agreed maturity scale for reporting.
- *Identified challenges:*
  - o Some countries continue to use national scales but upload data using the international SMSF scale.
  - o Errors in scale conversion have led to confusion across various assessment and survey working groups, as well as within national institutes.
- *Pending Decisions:*
  - o Should there still be an option to upload data in national scales?
  - o No consensus reached within WGBIOP.

During WGRDBESGOV 2023, this topic was also raised by WGBIOP and discussed in WGRDBESGOV. As described in the report WGRDBESGOV, this creates confusion in many assessment WGs, survey WGs and in national institutes. IWGBIOP has advised all institutes to the SMSF scale with substages and is in favour of mandatory upload of data to RDBES in the SMSF scale. It was decided that the option for using national scales in RDBES is not allowed to reduce all confusion. The conversion of national scales (if still used) into the SMSF scale is the responsibility of the institutes who should keep track of the conversion used. This is also in line with the DATRAS database. WGRDBESGOV 2024 confirms what was agreed in 2023.

2. Adding Preparation Method for Gonads

- RDBES inquiry: would it be an added value to include preparation methods for gonads.
- WGBIOP agrees that this could add value. Especially when the switch towards histological determination of maturity stage will be made.

3. Review of Vocabularies in Databases

- *Datras Inquiry (2022):* Interest in adding "conservation status" (e.g. fresh, frozen, cooked) to their database.
- *Vocab Discussion:*
    - o Discussion about whether to integrate this information into existing vocabularies or create a new category altogether. Relevant vocabularies for preparation methods, pretreatment methods, storage methods, and processing states have been considered, but no decision has been made (Work for WGBIOP 2025).
- *Remark from RDBESGOV:* "conservation status" is not the vocab to use here as it is already used related to the extinction status of species.

ii. WGSMART – Development and Budget Issues

1. Proposed New Modules

- *Reference Collection Module:* Simplifies compilation of reference collections.
- *Training Module***:** Allows self-training with agreed age samples.
- *Exploration of AI Integration:* Inclusion of Artificial Intelligence in SmartDots.

2. Budget Constraints

- Current pragmatic funding options (e.g. DG MARE and individual countries) are not possible.
- Suggested next steps involve pursuing support through RCGs and CINEA-EMFAF

3. New chair

- WGSMART will require a new chair in the coming year – still to be decided

4. Next Steps:

- Further discussion and planning of funding at the WGSMART meeting on 28th of November and have common meeting between RDBESGOV-WGSMART on how to work together for EMFAF funding

4. Bycatch data

A presentation was provided during the meeting with the objective of giving an update on the current situation regarding bycatch data and the RDBES.

All the work carried out since 2021 in relation to the incorporation of these data in the RDBES was put into context:

- During 2021 and 2022 WGBYC members worked with RDBES core group to ensure that data fields relevant to bycatch assessments were included in the data model
- In 2023, WGBYC carried out further checks of data fields and reported back to RDBES core group. There was a general consensus that all important fields were present.
- At WGBYC 2023 meeting some initial comparisons were made between WGBYC data and RDBES test data from 2021.
- Only Ireland and Sweden submitted data, and Sweden data were partial, so the main focus was on the Irish data, where several unusual entries were found.

Based on the above, the next steps for the incorporation of these data into the RDBES were identified. During 2024, there was not too much progress. In addition:

- WGBYC also mentioned that would benefit from some clarity on data acquisition from RDBES: Would the working group get raw data, or would the group develop the details of what is needed and then a script or annual extraction would be made etc.
- WGBYC will carry out a further comparison on more complete RDBES data based on 2023–2024 datacall submissions.

With this objective in mind, a specific subgroup under WGBYC, will work intersessionally during 2025. For this task, is essential to have involved experts that are: familiar with the RDBES, experts who respond to WGBYC datacall, main users of the data and members from WGBYC.

For this, collaboration with WGRDBES core group will be essential during 2025.

5. Marine recreational data

A presentation was provided during the meeting with the objective of giving an update on the current situation regarding recreational fishing data and the RDBES.

A first official datacall was launched during 2022, where the variables requested were specified, based on the agreed format for this. Seven member states responded and none of them identified any problems with the format for reporting the required data.

The data provided were in most cases partial, not covering all the modalities practised in recreational fisheries (e.g. charter, on shore etc.) and not all species were reported.

Based on this response to the datacall, several actions were taken during 2023–2024:

- The reasons for the limitation in the reported data were analysed.
- The list of people responsible for carrying out recreational fisheries surveys was updated, so that they would be informed in case there was another requirement.

At the end of 2024, another datacall was launched, requiring the same data as the previous one, with the difference that the latter requested the historical series of all the data collected.

During 2025, the WGRFS will analyse the reported data, and the results will be presented at the annual meeting of the group in June. Based on the results obtained, next steps to consider will be discussed, with the main objective of including recreational fisheries data in the assessment groups. For this, collaboration with WGRDBES will be essential during 2025.

6. Diadromous data

Diadromous species are currently covered by WGTRUTTA, WGNAS (Atlantic Salmon), WGBAST (Atlantic Salmon and Trout in the Baltic) and WGEEL. Their specific ecology raises specific challenges for data collection and storage. Currently, expert groups display heterogeneous strategy to store data supporting their assessments. The EU-funded DIASPARA project aims to develop FAIR databases in support of their Spatial Stock Assessment Models that would be more compliant with the ICES TAF framework.

Data used by diadromous expert groups:

Landings: only a part of catches of Salmon and eel is done in the marine environment and thus covered by the RDBES datacall. A large part of catches originate in inland waters; WGEEL and WGNAS have developed home-made databases to store those data. For WGEEL there is also a need to cover the Mediterranean, including North-African countries.

Other data: A large part of data used by working groups (traps on rivers, electrofishing, release data) are not landings. The diadromous working groups are currently relying on their own databases to store data. These data are aggregated at the regional (functional unit: rivers for WGBAST, stock unit for WGNAS, EMU for WGEEL) level, and used in support of Stock Assessment Bayesian models (though WGEEL does not have a model yet).

In its postgres database, WGEEL also collects site-specific time-series of abundance as well as group and individual metrics. It includes data from electrofishing, traps, experimental fisheries and sampling programs within the DCF or other monitoring frameworks.

DIASPARA is working on creating:

- A database of stock assessment common to all diadromous species (this will include aggregate catch, but also model input and output variables).
- A database of continental habitats.
- A database of electrofishing
- A database of dams
- Extend the sampling and monitoring database from eel to other diadromous species.

Work with ICES:

- Vocabularies specific to diadromous species, these will be done in close liaison with ICES data centre and the different working groups. These will include precisions on habitats (C, MO, F, T), stages. This is critical for diadromous species since fisheries operate successively on different life stages depending on the habitat. Definitions of functional units (e.g. rivers, stock units, EMU) will also be required.
- The quality check controls are currently developed within DATSU and will replace the checks currently done within the shiny integration tools (WGNAS and WGEEL). The sampling and monitoring database will be the first to use QC.
- The databases developed within the project will be handed over to ICES. There is currently a lack of funding for these integration in ICES and resources should be found after DIASPARA to further work on the integration (in 2026-2027).

RDBES:

- Landings data in the marine environment have been this year reported to RDBES. The institutes in charge of data reporting are sometimes different between inland and marine environments, and this might explain some differences between data reported in the diadromous databases and RDBES. Coordination is thus needed at the national level to report catches during specific data calls (WGEEL, WGBAST, WGNAS) and RDBES. This also highlights the need for well-defined vocabularies to avoid duplicate reporting.
- RDBES theoretically collects data at the vessels (or group of vessels scales), however, this might not be possible in inland waters (the EU fishing fleet register does not cover inland

waters). A solution will have to be found to aggregate data at the functional unit scale and designate it as a "virtual vessel".

- Storing continental landings within the RDBES will start in the Baltic in which a preliminary work on functional units has already been achieved. For other groups it will require some work on vocabularies, which will be coordinated by ICES data centre, DIASPARA and expert WGs. Once this is done, and a vocabulary for stock units at the continental level has been handed over by DIASPARA, continental data should start to be integrated within the RDBES.
- The RDBES has been adapted to integrate fishing area, freshwater name, month, and total number of fishes. The freshwater names are only applicable in the Baltic and will be extended by DIASPERA. Adding stages to the RDBES is necessary to hold diadromous fish catches, and this should be done soon.
- The diadromous working groups will start working on the RDBES data, to group at the regional / river / stock unit scale and integrate the aggregated landings within their own databases within TAF. For eel there is currently a mismatch between the definitions of marine part, transitional waters, and freshwater habitat, and the limits used by ICES. The WGEEL will need to address these issues.
- In WGEEL, landings data are reported at the fishing season scale (e.g. glass eel landings 2025 refer to landings from Octobre 2024 to August 2025). A way to handle such data in RDBES will have to be found when monthly disaggregated data are not available in inland waters.
- DIASPARA will report a database on electrofishing. Work will be done later to check and integrate these data within the RDBES. This will require a detailed workshop (2026 ?).

7. Electronic monitoring data

Electronic monitoring (EM) associates positional, gear sensor, and video data and has emerged as a promising way to collect long time-series of fisheries-dependent data, at a cost that is generally reduced compared to an equivalent fisheries observer scheme.

During the WGRDBESGOV 2024 meeting, an example from the Danish ETP (Endangered, Threatened, and Protected) species bycatch monitoring programme using EM was presented to demonstrate the relative ease with which such data can be organized to fit into the RDBES.

Long time-series of fisheries dependent data are essential to estimating the frequency of rare events such as incidental captures (bycatch) of ETP species and in turn to inform fisheries management appropriately. In Denmark, DTU Aqua started an ETP species bycatch monitoring programme using EM in 2010 that now routinely collects information on catches of mammals, birds, and elasmobranchs. The Danish EM programme contributes inter alia to the reporting of reliable fisheries bycatch data to the DCF and to the ICES WGBYC database. As of December 2023, DTU Aqua had reviewed 8215 unique fishing days onboard 20 different commercial vessels and documented the bycatch of thousands of marine mammals (n = 1872), seabirds (n = 2458), and elasmobranchs (n = 11,917). Achieving such sampling coverage is considerably cheaper with EM than what an equivalent fisheries observer scheme would cost, but it requires many man-hours from trained EM analysts. To produce regular updates of bycatch rates of ETP species in Denmark, DTU Aqua has established protocols to collect, review, and analyse EM data, and to make these data fit the requirements of the RDBES. This includes the development of tools to automatise raw data extraction processes and further data management that are put together as an R package. Although tailored for handling the EM collected in Denmark, these tools are susceptible to be tweaked to the needs of individual national or local EM programmes and they could help with standardizing data handling at regional level.

EM data are usually recorded as a collection of separate tables keyed together and describing the sampled fishing effort, the (by)catches within at some effort metric level (e.g. at trip, fishing day, or fishing operation level), additional information on sampling protocol, and other associated sensor data (e.g. winch hydraulic pressure, GPS, etc.). In addition, a species list, determined *a priori* based on the sampling goals and design, or *a posteriori* using the list of species observed, needs to be created to fit the RDBES needs (Figure A4.1).

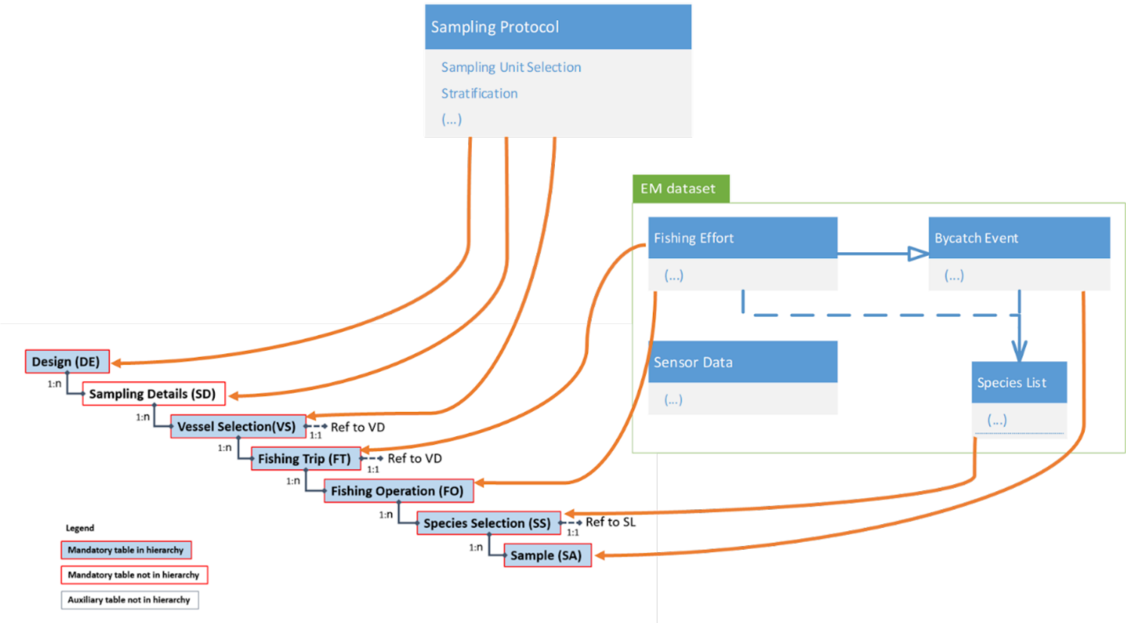


Figure A4.1. General principle of the integration to the RDBES of an EM database in an ETP species bycatch monitoring programme, using one of the existing RDBES hierarchies.

By explicitly integrating the sampling options taken in the monitoring programme, the RDBES gives the users the ability to understand the sampling design clearly and reduces some of the uncertainty associated with poor datasets. For instance, the RDBES is flexible enough to accommodate EM data stemming from different sources on the same vessel, which may give complementary information on the fishing operations and catch records (Figure A4.2). Moreover, the species list required in the RDBES translates to being able to obtain true zero in (by)catch counts/estimates. That is, if a species is on the list in a given year, but no (by)catch is reported that year, it indicates that (truly) no (by)catch was recorded in that year. Note that each individual part of the fishing process observed with EM (e.g. presorting, sorting, slipping, etc.) is susceptible to having its own separate species list.

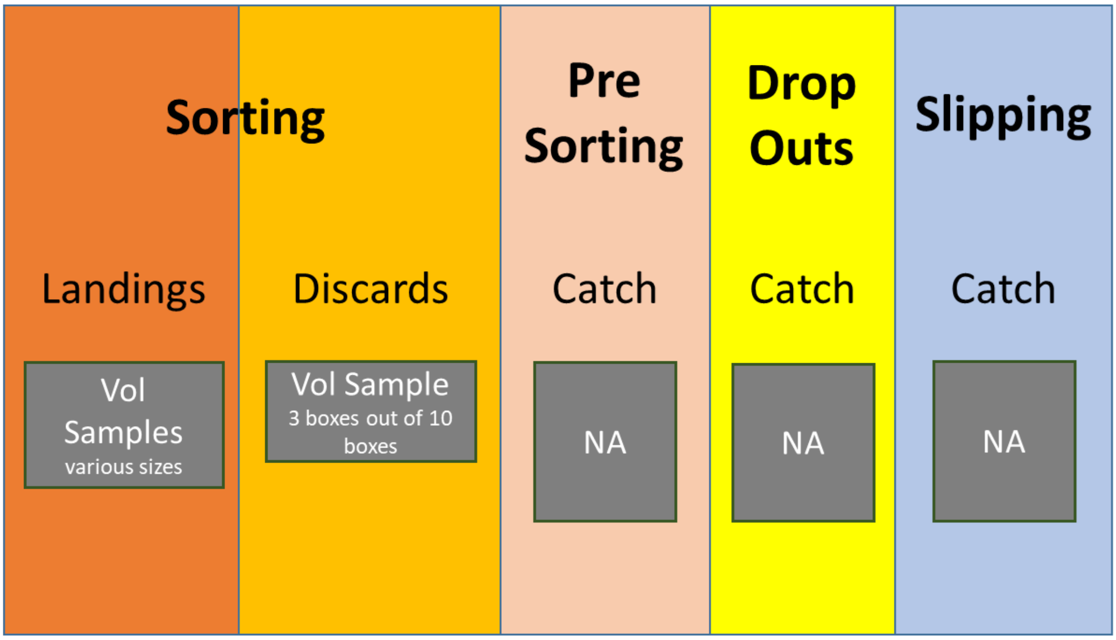


Figure A4.2. Example of an explicit sampling stratification in the RDBES for an EM programme where cam-eras are placed in a way that different parts of the fishing operations can be monitored (here, sorting landings and discards).

In summary, EM data can easily be fitted to the RDBES in a relatively straightforward manner as shown in the Danish EM example. Additionally, compared to the existing RDB, fitting EM data into the RDBES provides important "metadata" to describe sampling options explicitly, including the species list integrated at some level of the fishing process (e.g. trip- or haul-level, specific part of the fishing process, etc.), as well information currently not reported otherwise on e.g. the EM data quality.

8. TAF (WGTAFGOV)

An overview of the Transparent Assessment Framework (TAF) was presented, covering the basics of documenting data sources and non-standard software sources, and the general structure of a TAF analysis: data processing, model fitting, processing of outputs, creation of plots, tables and reports. This was followed by a summary of how TAF assessments are run and stored on the TAF server, and an overview of the TAF database (DB), which can be thought of as a look up table in a sense. The principle job of the DB is to store standard outputs from TAF analyses. These standard outputs need to be defined by a group and have metadata (or attributes) associated with them to that can be looked up and retrieved at a later date for use in further analyses. These standard outputs are names "artifacts" of a TAF analyses and are subject to several quality control procedures. Examples were given from a stock assessment: an FLStock object created in R using FLR (Fisheries Laboratory in R), and contains a suit of data on a stock assessment; and the SAG (Stock Assessment Graphs) upload file. The quality checks that are run are: 1) does the artifact have the appropriate meta-data – for stock assessment outputs example meta-data are Year and StockCode. Because these objects have well defined formats or structure, it means that checks on the validity can be run, and where possible meta-data can be checked against vocabularies. Where entries do not match, the R user is notified and some help is provided. In the case of the SAG upload file, its contents are checked against the format definition:

```
r$> sagtest <- artifact("output/ple.27.420_notok.xml", type = "SAG")

[09:10:48] Still to code DATSU checks for SAG artifacts
Error in artifact("output/ple.27.420_notok.xml", type = "SAG") :
  Failed to create artifact
In addition: Warning messages:
1: Invalid metadata codes:
                 code value                                                                                url
1 AssessmentModelName FLAAP https://vocab.ices.dk/?codetypeguid=b3952764-e46b-49b2-9f0b-a2a639d3cecb

2: Artifact type (SAG) checks failed:
[1] "SAG info part failed"
```

And in the case of the FLStock the metadata are checked, and the validity of the structure of the object is checked against its class definition.

```
r$> artifact(
        "data/flstock_notok.rds",
        type = "FLStock",
        Year = 2017,
        ICES_StockCode = "ple.27.4",
        Purpose = "assessment"
      )
Error in artifact("data/flstock_notok.rds", type = "FLStock", Year = 2017,  :
  Failed to create artifact
In addition: Warning messages:
1: Invalid metadata code type: Purpose

2: perhaps you meant:
               codeType
1     AssessmentPurpose
2 CatchScenariosPurpose
3    MeasurementPurpose
                                                                  url
1 https://vocab.ices.dk/?codetypeguid=df07b00e-80b9-44cd-8fc1-6fd35d4a1777
2 https://vocab.ices.dk/?codetypeguid=2fd23b0e-7a74-4f89-8865-69f725ce819e
3 https://vocab.ices.dk/?codetypeguid=a108c5ed-451c-48e7-9179-96449396f189

3: Invalid metadata codes:
            code    value
1 ICES_StockCode ple.27.4
                                                                  url
1 https://vocab.ices.dk/?codetypeguid=6687d747-ec08-49a0-b13f-f202779c907c
```

Once the checks pass, then a file is created which provides a way to upload these artifacts to the TAF DB, this file is in JSON format:

```
[
  {
    "file": "output/ple.27.420.xml",
    "type": "SAG",
    "metadata": {
      "Year": 2017,
      "ICES_StockCode": "ple.27.420",
      "AssessmentPurpose": "Unofficial"
    },
    "hash": "cf13e04da1b48a0ca85249c908fabd22"
  },
  {
    "file": "data/flstock.rds",
    "type": "FLStock",
    "metadata": {
```

Discussion then followed on how this system would be used to allow standard output from RDBES TAF analyses to be defined.

Security

This system allows for authentication processes to be applied to certain outputs, such as intermediate estimates from the RDBES where access to these would be ascertained based on the users rights and whether they match the meta-data associated with the data.

Annex 5: Feedback from RCGs

1. RCG NANSEA and RCG Baltic

The feedback from RCG NANSEA and Baltic was presented at the WGRDBESGOV meeting. Several RDBES-related topics were discussed at the June 2024 RCG technical meeting

RDBES data call for RCG work 2024

The first joint RCG-ICES RDBES data call was issued on 29 January 2024, with a deadline of 2 April and requested landings and effort data for 2021–2023 and commercial sampling data for 2023. The data were used for the NANSEA and Baltic RWP Table 2.1, with the deadline for submission to the Commission of 31st May 2024. After the data call deadline, an issue was identified that if data had already been uploaded previously, there could be duplicate data in the database, as the unique key had been changed. The ICES secretariat sent out an e-mail to MS potentially affected, advising those MS to delete data on a high level, and reupload the data. Other issues were spotted in data while processing for the RWP (e.g. species/area on too high level) and data were not final until 29 May. There was an extensive e-mail correspondence between ISSG RWP, RCG chair, MS and ICES in this process. Consequently, data available for other RCG ISSGs with deadline beginning of May was therefore also delayed.

RCG ISSG use of RDBES data 2024

RDBES data were made available on a restricted ICES sharepoint, accessible for RCG experts designated by RCG chairs, after they had signed the conditions of use of data. Data were used for RWP table 2.1 'List of required species/stocks' which was completed based on 2021–2023 CL data. ISSG Overviews used it for the RCG overview reports. The ISSG Métier and transversal variables created an overview of the métiers used, presented in a hierarchical way.

Documentation of methods used for creating the RDBES data

RCG ISSG Métier and transversal variables proposed a word document template to document the methods and data sources used for creating RDBES CE/CL data. From the RCG TM RDBES subgroup, it was recommended that WGCATCH and WGBYC revise the template. The template was discussed and has been reviewed by WGCATCH ToR b (SSF). RCG ISSG Métiers and transversal variables can gather the templates and process the information, but a question remains if the template should also be populated by third countries and who should process it.

Funding

Funding of the RDBES was discussed at the RCG TM, and it was clear from the Commission that there is also a need to engage with third countries (UK, Norway, Faroe). A more stable long-term solution is needed as it will be a main database in ICES used for multiple purposes including stock assessment, and will replace InterCatch. It was also highlighted that the communication around the RDBES to different groups can be improved and made more clear and less technical. Special request can still be useful for exclusive EU functionalities, e.g. FDI export module.

Conversion module from RDBES to FDI

Conversion from RDBES to FDI is a priority for the Commission, to streamline and harmonize data flows. It will include the adaptation of the RDBES and ICES estimations to FDI. The RDBES format has been prepared to be able to convert to FDI, but the RDBES is not ready for export to FDI yet, as the biological data national estimates (number at length, number-at-age, discards etc.) need to be calculated in RDBES, and this is not expected to be ready before 2027. Some MS, e.g.

Spain and France, have areas that are not covered by ICES RDBES and will still need to process part of the FDI data outside RDBES.

Roles and permissions needed in RDBES system for RCG work

There is a recommendation from 2022 for ICES to give download rights of RDB/RDBES data to ISSG chairs for the ISSG work. Selected RCG users should be able to download data from RCG MS fishing in the RCG NANSEA and Baltic regions. Regarding definition of roles and permissions, the RCG needs a new user type "RCG" who has download access to all stocks and countries in the RCG area.

Historical RDB data

Three options were discussed: 1) Keep the RDB database (long-term maintenance cost). 2) Add historical RDB data to new tables in RDBES database (one-time cost of development and data migration) 3) Download data as csv files and store them somewhere accessible to RCGs (considered as a bad practice). During the WGRDBESGOV, ICES suggested that the RDB data can stay in the database, but the web-interface be closed down, as this is where the maintenance costs are.

Recommendations from RCG NANSEA and Baltic 2024 relevant to WGRDBESGOV

A number of recommendations related to RDBES were formulated at the 2024 Technical Meeting of the RCG NANSEA and Baltic. The recommendations were communicated to relevant recipients. Some action on these recommendations has already been taken.

NANSEA BALTIC_2024_R02: The RCG recommends NC to use the markdown script developed by WGRDBESGOV to quality check their data and give feedback to the WGRDBESGOV in November.

Action taken: An online introductory meeting for the CL and CE R Markdown Quality Check script was organized by WGRDBESGOV ISSG on Data Quality on 22.10.2024.

NANSEA BALTIC_2024_R03: The RCG recommends that ICES WGCATCH, WGBYC review the template developed by the RCG to document the methodology and data sources used to populate the calculated RDBES fields in the commercial landings and effort files and provide feedback.

Action taken: WGCATCH reviewed the template and gave feedback.

NANSEA BALTIC_2024_R04: NCs to put resources in the development of the estimates using RDBES data and also to start filling the FDI fields in the RDBES data model.

NANSEA BALTIC_2024_R05: Commission to set up a Workshop for NCs to clarify data confidentiality concepts and find the best solution for the RDBES Data License.

Action taken: A workshop for NCs will be organized by the EC in 2024.

NANSEA BALTIC_2024_R12: For RCG and ICES to write a joint support letter that will be sent from ICES to NCs to achieve access for MS to control data, which should then make contact to national control agencies to obtain access to control data that can support MS in submitting scientifically adjusted landings weights for RDBES ICES WGs.

Action taken: The support letter has been drafted with the collaboration of ICES Secretariat, and has been sent by the ICES secretariat.

NANSEA BALTIC_2024_R13: RCG recommends that both the scientific landings and official landings to be mandatory in the RDBES format.

Action taken: It was agreed at the WGRDBESGOV meeting that both fields will be mandatory from 2025 data call. The implication of this is that all commercial landings data that currently exist in RDBES must be re-submitted.

2. RCG Long Distance Fisheries

The 2024 data call focused on a subset of active Member States (MS), requesting historical and outermost regions' data. Despite technical issues with ICES systems, MS provided the required data separately. The first use of the RDBES yielded some mixed results due to format and technical transitions. Some improvements in validation and data processes were recommended for future calls, which will be discussed with the Data centre as usual. Also, some references for species and fishing areas still need to be identified and will be requested to be updated, in particular as the NPFC area has been added under the area of competence of the RCG LDF, as are the outermost regions.

Due to technical issues at ICES, data processing during the RCG faced challenges with RDBES and R-scripts. Despite intensive efforts, generating a comprehensive Fisheries Overview was hindered, so the group focused on tables for the report instead.

Next year's call will request data from all MSs, explicitly addressing the outermost regions. Deadlines and data formats are being refined to ensure smoother uploads and analysis. The RCG will explore options to include biological data from the NAFO area to facilitate central storage and use of the data.

3. RCG Large Pelagic

Text to be added.

4. RCG Mediterranean and Black Sea

QualiTrain presentation

Isabella Bitetto (COISPA, Italy), as the project coordinator, presented the objectives and achievements of the QualiTrain project (Quality Checking of Mediterranean and Black Sea Data and Training for Member States Experts). Launched in December 2022 and now nearing completion, the project focused on enhancing data quality and expert training.

The initiative consolidated and refined two R tools, building on prior efforts from various initiatives, projects, and grants:

- **RDBqc** (for commercial data): GitHub link
- **RoME** (for MEDITS survey data): GitHub link

These tools were applied, within the project, to assess the consistency of data collected under the Data Collection Framework (DCF) for 146 stocks not routinely assessed. Results of the checks were shared with Member States, who were encouraged to address identified issues and resubmit corrected datasets for the 2025 data call.

The project also organized two training sessions to familiarize Member State experts with these tools. All MSs participated in one or both sessions, allowing experts to independently run the tools on their systems and analyse their datasets.

The foundational work of the QualiTrain project will be carried forward by the recently established ISSG on Data Quality, under the RCG Mediterranean and Black Sea, chaired by K. Toulomis (Greece).

Annex 6: Data submission for RDBES data call

Feedback on RDBES data submissions 2024:

In the RCG ICES RDBES data call 2024 for landings and effort data were requested from years 2021–2023 and biological sample data from all species from year 2023 was requested to be uploaded into the RDBES.

The fifth RDBES data call was sent the 29 January 2024 with a deadline for upload of the data the 2 April 2024.The new version of RDBES was released on the web the 1 March 2024.

Landings - number of species

Number of species in landings (CL) by country for the data years 2021–2023 is shown below.

Country (n species in landings)	2021	2022	2023	Grand Total
BELGIUM	62	71	68	201
Denmark	136	137	145	418
England	153	143		296
ESTONIA	58	56	42	156
FAROE ISLANDS		4	3	7
FINLAND	20	19	19	58
FRANCE	290	284	265	839
GERMANY	113	105	105	323
GUERNSEY	24	26	37	87
IRELAND	124	121	126	371
ISLE OF MAN	36	42	35	113
JERSEY	32	38	16	86
LATVIA	65	63	71	199
LITHUANIA	54	53	63	170
NETHERLANDS	103	101	101	305
Northern Ireland	63	53	61	177
NORWAY		124	133	257
POLAND	69	57	54	180
PORTUGAL	280	276	284	840
Scotland	111	118	122	351
SPAIN	528	519	498	1545
SWEDEN	100	97	97	294
Wales	67	59	61	187
Grand Total	**2488**	**2566**	**2406**	**7460**

In general, there is a very good upload of landings by species. Norway is missing landing data for year 2021. England is missing landing data for year 2023. Faroe Islands have for the first time uploaded landing data to the RDBES, which is very positive.

Effort - numbers of métiers

Number of métiers in effort (CE) by country for data years 2021–2023 is shown below.

Country	2021	2022	2023	Grand Total
BELGIUM	15	11	11	37
Denmark	111	101	92	304
England	185	185	190	560
ESTONIA	13	15	11	39
FAROE ISLANDS		3	4	7
FINLAND	18	17	16	51
FRANCE	343	360	328	1031
GERMANY	77	89	102	268
GUERNSEY	5	7	10	22
IRELAND	39	33	34	106
ISLE OF MAN	20	24	18	62
JERSEY	8	4	2	14
LATVIA	17	16	17	50
LITHUANIA	27	23	24	74
NETHERLANDS	41	46	48	135
Northern Ireland	36	40	38	114
POLAND	41	41	37	119
PORTUGAL	42	43	42	127
Scotland	97	92	97	286
SPAIN	35	34	37	106
SWEDEN	89	94	89	272
Wales	34	31	26	91
Grand Total	**1293**	**1309**	**1273**	**3875**

In general, there is a very good upload of effort data by métiers (fishing gear specified to métier level 6). Norway is missing effort data for all 3 years 2021–2023. Faroe Islands have for the first time uploaded effort data to the RDBES, which is very positive.

Samples data – number species in Sample (SA) by hierarchies

Number species in Sample (SA) by hierarchies for data year 2023 is shown below.

Country	1	2	3	4	5	6	7	8	9	13	Grand Total
BELGIUM		53									53
Denmark	130	25							15		170
ESTONIA			4				2	5			11
FAROE ISLANDS		3									3
FINLAND	36										36
FRANCE	302				79						381
GERMANY	173			1		5					179
IRELAND	124				33						157
LATVIA	29									5	34
LITHUANIA	7							7			14
NETHERLANDS	42				14						56
Northern Ireland			70		11						81
NORWAY										5	5
POLAND	44										44
PORTUGAL					206						206
Scotland		97			35						132
SPAIN	322		150		183		18				673
SWEDEN	124		2		1						127
Grand Total	**1333**	**178**	**226**	**1**	**562**	**5**	**20**	**12**	**15**	**10**	**2362**

It is clear to see that hierarchy 1 and 5 are the most used hierarchies. Spain and France have uploaded most sample records. Hierarchy 10, 11 and 12 are not used at all by any country. There is a large difference in the number of species the countries have uploaded. Norway have not uploaded all species since they only have uploaded 5 species. The following countries have not uploaded sample data: Iceland, England and Wales. Faroe Islands have uploaded sample data for the first time, which is very positive.

Samples data – number records in Frequency Measure (FM) by hierarchies

Number records in Frequency Measure (FM) by hierarchies in data years 2021–2023 is shown below. The Frequency Measure table most often contain the number at each length class, potentially the table could also contain weight class.

Country	2021	2022	2023	Grand Total
BELGIUM		67932	68137	136069
Denmark		22566	34955	57521
England		127295		127295
FINLAND		6972	6303	13275
FRANCE			232201	232201
GERMANY		38359	36261	74620
IRELAND	55828	47925	68548	172301
LATVIA		1981	2377	4358
LITHUANIA		1507	2490	3997
NETHERLANDS		13467	19661	33128
Northern Ireland		54539	56773	111312
POLAND		4295	6874	11169
PORTUGAL		35304	42526	77830
Scotland		112163	121964	234127
SPAIN	1815	257930	212447	472192
SWEDEN		19451	16790	36241
Grand Total	**57643**	**811686**	**928307**	**1797636**

Data in the Frequency Measure (FM; typically length class) is uploaded by most countries. The following countries have not uploaded sample data for the requested data year 2023: England, Estonia, Faroe Islands, Iceland, Norway and Wales.

Samples data – number records in Biological Measurement (BV) under Frequency Measure (FM) by hierarchies

Number records in Biological Measurement (BV) by hierarchies in data year 2022. The Biological Measurement table contain the measured value for any biological measured parameter for the individual sampled fish, e.g. age, length, weight, sex, maturity etc.

Country	2021	2022	2023	Grand Total
Denmark		15182	58847	74029
England		9052		9052
GERMANY		162172	169546	331718
IRELAND	103820	110458	89826	304104
LATVIA		44287	49283	93570
LITHUANIA		20384	30655	51039
NETHERLANDS		178476	32356	210832
POLAND		42085	65303	107388
Scotland		34713	35866	70579
SPAIN	26136	22260	27300	75696
SWEDEN		59630	76937	136567
Grand Total	**129956**	**698699**	**635919**	**1464574**

A large number of Biological Measurement records data have been uploaded under FM. It is the same countries as last year, which have uploaded BV under FM. There has been a large increase of BV uploaded data from Denmark, Lithuania, Poland and Sweden. There has been a drop in the BV uploaded data under FM from Ireland and Netherlands. Other countries have also uploaded Biological Measurement (BV) data, but directly under the Sample (SA) table, see below. England have not uploaded biological data for 2023.

Samples data – number records in Biological Measurement (BV) under Sample (SA) by hierarchies

Number records in Biological Measurement (BV) by hierarchies in data years 2021–2023. The Biological Measurement table contain the measured value for any biological measured parameter for the individual sampled fish, e.g. age, length, weight, sex, maturity etc.

Country	2021	2022	2023	Grand Total
BELGIUM		35081	38916	73997
Denmark		4914	21328	26242
ESTONIA		150998	138353	289351
FAROE ISLANDS		14293	15160	29453
FINLAND		37096	34604	71700
FRANCE			20803	20803
IRELAND	103004	73598	139663	316265
LATVIA		21873	28006	49879
LITHUANIA		7481	7847	15328
NETHERLANDS		28320	26862	55182
NORWAY		22754	28622	51376
Scotland		5123	6208	11331
SPAIN	77932	277343	267163	622438
SWEDEN		64143	90418	154561
Grand Total	**180936**	**743017**	**863953**	**1787906**

A large number of Biological Measurement records have been uploaded. Belgium, Estonia, Finland, France and Norway have uploaded Biological Measurement (BV) directly under the Sample (SA). The other countries have also uploaded BV under FM. There has been an increase of BV uploaded data under SA for Denmark, France, Ireland, Latvia, Norway, Scotland and Sweden. Faroe Islands have uploaded Biological Measurements data for the first time, which is very positive.

Countries upload overview

Below is the complete overview of what data the countries have uploaded to the RDBES compared with last year. More data have been uploaded by the countries, which was missing some data types last year, see all the ‘Yes’ marking. The cells are colour coded. All the green cells indicate the data were also uploaded last year. Orange indicated the data were uploaded last year but not this year. The yellow indicates the data were not uploaded last year, but the data have been uploaded this year.

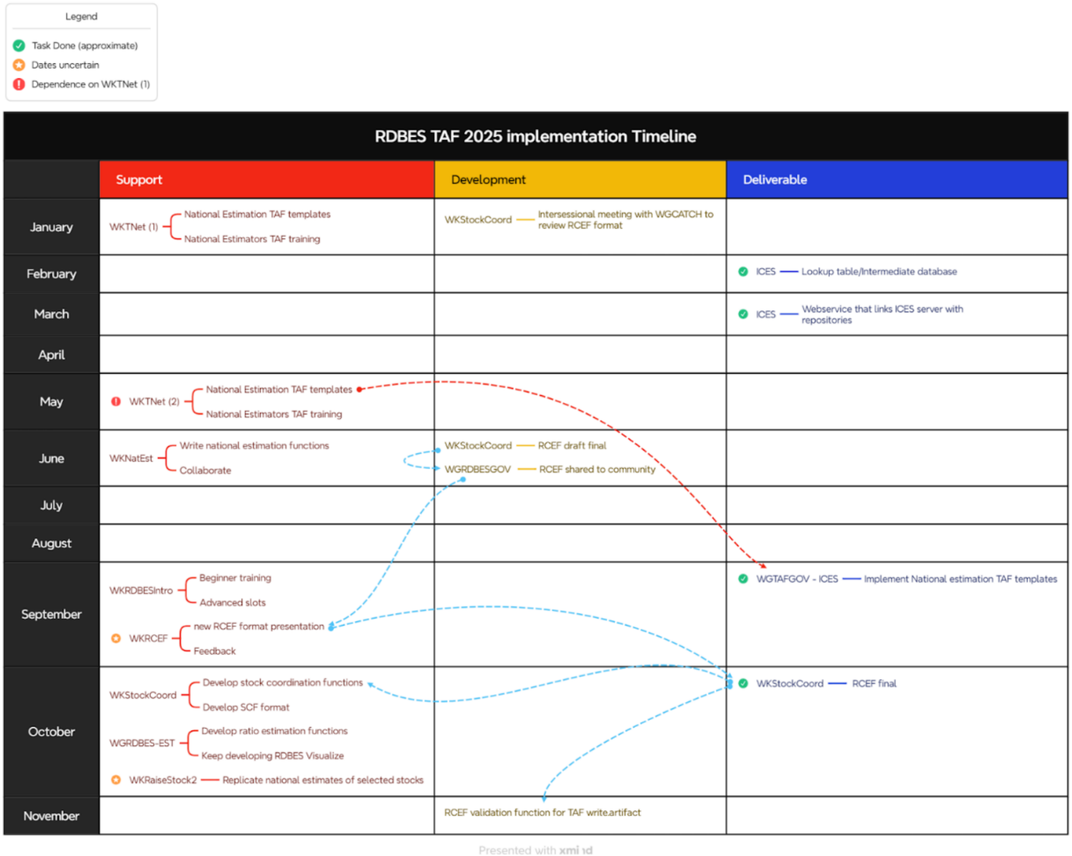
Country\Data type	Landing	Effort	Sample	Freq. Me	Bio. Var.
BELGIUM	Yes	Yes	Yes	Yes	Yes
DENMARK	Yes	Yes	Yes	Yes	Yes
England		Yes			
ESTONIA	Yes	Yes	Yes		Yes
Faroe Islands	Yes	Yes	Yes		Yes
Finland	Yes	Yes	Yes	Yes	Yes
FRANCE	Yes	Yes	Yes	Yes	Yes
GERMANY	Yes	Yes	Yes	Yes	Yes
Iceland					
GUERNSEY	Yes	Yes			
IRELAND	Yes	Yes	Yes	Yes	Yes
ISLE OF MAN	Yes	Yes			
JERSEY	Yes	Yes			
LATVIA	Yes	Yes	Yes	Yes	Yes
Lithuania	Yes	Yes	Yes	Yes	Yes
NETHERLANDS	Yes	Yes	Yes	Yes	Yes
Northern Ireland	Yes	Yes	Yes	Yes	
NORWAY	Yes		Yes		Yes
POLAND	Yes	Yes	Yes	Yes	Yes
PORTUGAL	Yes	Yes	Yes	Yes	
Scotland	Yes	Yes	Yes	Yes	Yes
SPAIN	Yes	Yes	Yes	Yes	Yes
SWEDEN	Yes	Yes	Yes	Yes	Yes
Wales	Yes	Yes			

It is concluded that the countries in general have uploaded all requested data types (green (also uploaded last year). It is clear to see that there is a stability regarding all countries uploading almost all data again this year (see the green, uploaded this year and the previous year). Unfortunately, England has only uploaded effort data. Norway have not uploaded effort data and length class data this year. Wales have not uploaded any sample data. There is only one data type that is missing for a few countries. Faroe Islands have for the first time ever uploaded data to the RDBES, landing, effort and sample data except length class data, this is a very positive development. The countries should have declared in the Upload log if data are missing.

Upload Logs

In general almost all data are uploaded for most countries, it is typically a few percent or less of the data, which potentially is missing. The reason for missing uploads is generally more national work is needed and/or national procedures need to be in place, a few countries need to request codes. There is no indication of issues with the RDBES.

Annex 7: Timeline of the roadmap



Timeline for RDBES and TAF implementation in 2025.

Annex 8: Workshop on RDBES data confidentiality and data use

Some specific/practical questions for the workshop:

- What is the basis of the national rules and why are they different, i.e. one MS using 3 vessel rule, other using 5, some not applying any confidentiality clauses.
- what does it mean for data to be *anonymised*?
- If data comes from different regulations than the DCF, should it still be disclosed what data are withheld on the grounds of confidentiality?

Preparation of the workshop:

To prepare any guidance and consult the legal services, the Commission needs to have information on the national rules in advance. Only a limited number of MS provided feedback to the previously circulated questionnaire on the national applicable rules.

For the workshop, the proposal is to prepare a set of questions for the NCs relating to the national practices and rules and confidentiality and run an EU survey with a deadline of late January. The workshop could be a special NC meeting with invited experts, RCG chairs and end-users with the following agenda points:

- Summary of NC feedback on national processes and applicable rules.
- Feedback from end-user how confidentiality is handled in the use and publication of data and how restriction of data are impacting data availability (ICES, JRC, RDBFIS-GFCM, ESTAT).
- Feedback from legal unit.
- Discussion on coordinated approach for handling data.

Use and sharing of data:

1. Do you have any confidentiality restrictions in the **use and/or sharing** of detailed data to end-user under the DCF?
2. If yes, what data does it apply to:

a) Sampling data,
b) data from the control regulation relating to commercial fisheries;
c) data from the control regulation relating to recreational fisheries;
d) socio-economic data,
e) other (please specify)

3. If yes, can you specify the specific restriction for each of the data types?
4. For each of the data types above, are they part of data sharing agreements and/or conditions of use from the national data providers?
5. For each of the above, what legal obligations on data protection do these restrictions aim to address:

a) GDPR and personal protection,
b) commercial secrecy (article 113 of control regulation)
c) statistical integrity
d) other, comments box.

6. For each of the data types above, do they follow specific national decrees? If so can you specify?

7. Do you have other concerns resulting from the use and/or sharing of detailed data under the DCF? (Free text)

Publication of data:

1. Do you have any confidentiality restrictions in the **publication** of detailed data to end-user under the DCF?
2. If yes, what data does it apply to:

a) Sampling data,
b) data from the control regulation relating to commercial fisheries;
c) data from the control regulation relating to recreational fisheries;
d) socio-economic data,
e) other (please specify)

3. If yes, can you specify the specific restriction for each of the data types?
4. For each of the data types above, are they part of data sharing agreements and/or conditions of use from the national data providers?
5. For each of the above, what legal obligations on data protection do these restrictions aim to address:

a) GDPR and personal protection,
b) commercial secrecy (article 113 of control regulation)
c) statistical integrity
d) other, comments box.

6. For each of the data types above, do they follow specific national decrees? If so can you specify?
7. Do you have other concerns resulting from the publication of detailed data under the DCF? (Free text)
8. Do you have any questions or comments in relation to data confidentiality under the DCF?
9. Do consent for the detailed output of the questionnaire to be shared with the DCF regional coordination groups and the key scientific end-users.

Annex 9: Key selling points to develop the communication on different levels

A. The common and important RDBES selling points across recipients

- New basis for stock assessment
- Efficiency (when everything is up and running)
- Better Quality
- Multiple use of data (answer more questions). Better advice. Better estimates
- Support use of uncertainties measures, which can identify where to spend "sample money" better
- One stop shop for data (one system for all)

B. Selling points for four different recipient groups

Recipient 1: Institute directors

- Efficiency
- Better decision-making
- Optimize cost
- Streamline data
- New basis for stock assessment
- Data collection according to regulatory standards

Recipient 2: ICES decisions bodies Council/ACOM

- Ecosystem based assessment
- Better estimates
- Data Quality
- Transparency, Traceability, Reproducibility,
- Efficiency

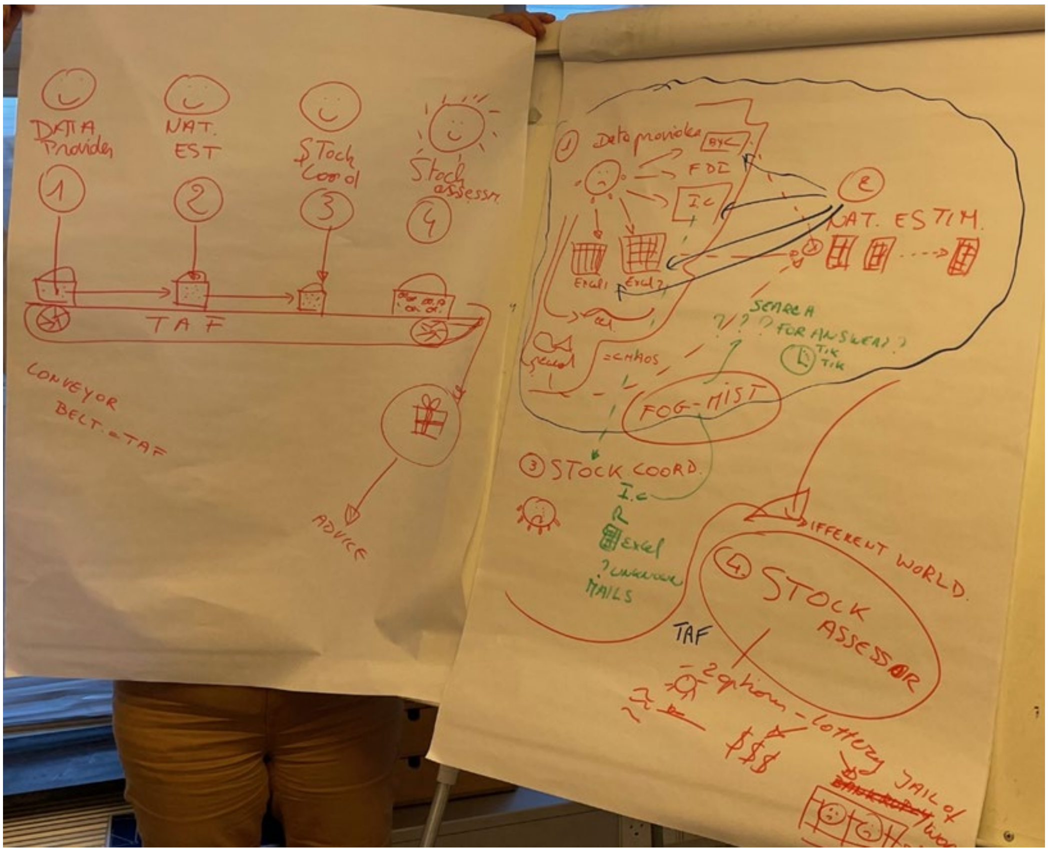
Recipient 3: EU and third countries

- Support legislation
- Better decision-making
- Data collection according to regulatory standards
- Efficiency
- Optimize costs
- Other data (like EM. Bycatch)
- Streamline data
- New basis for stock assessment
- Make more use of data
- Submit data once - fewer data calls

Recipient 4: Experts data users

- Better estimates
- Make more use of data
- Ecosystem based assessment
- Data gaps
- Reproducibility
- TAF
- Submit data once
- New basis for stock assessment
- Less stress
- Share best practices, Save time, Efficiency, Better estimates

C. An illustrative example of the positive/simple situation with RDBES and one without RDBES



Annex 10: Key topics to develop project for funding RDBES development

Harmonize and/or improve protocols of data collection, handling and management to serve the scientific advisory process

- Link RDBES data and DCF workplan and annual reports (National and regional)
- Strengthen the link between data collection and stock assessment/data use
- Optimize sampling design/data collection for end-user needs
- Reports/outputs needed by RCGs
- Sampling overviews and coverage
- Use KPIs

Trials (e.g. exploring methods for improving surveys, collection of data, monitoring methods, risk assessments, etc.)

- Case study to demonstrate improvement
- Identify user needs and wishes, and prioritize
- Easy for users to use – so users love RDBES
- Define end-user needs for advice + midterm goals for assessment needs, coordination
- RDBES -> FDI?

Data validation/Data preparation

- Upload logs integrated in data submission and available for end-users
- Facilitate/improve review and transparency
- Develop estimation R package
- WGRDBES-EST -> needs to include
- Stock status dashboard -> advice sheet
- User visualizations
- Pull out statistics (dashboard?)
- Stock coordination – R package

Expanding current databases or creating new databases and link with existing initiatives with the aim of improving data quality and serving scientific advice / Modelling (development, improvement, testing)

- Recreational data (estimates and samples)
- Large pelagic data
- Diadromous data
- Dashboard (link to power BI)
- Facilitate new datatypes (visuals, use)
- Develop functionalities and improvements in RDBES (upload logs, RCG chairs download, stock model etc.)
- Longterm development/maintenance clarified
- Ensure resources for RDBES development
- Make RDBES sure needed functionalities and funded
- Bycatch outputs (showing true zeros and monitoring data) + estimation

- New data to be stored easily
- Export modules for different data requesters/reports
- List of weak points (not enough measurements)

Data quality

- Quality levels (measures)
- Implement high quality checks
- Quality tool box (data validation protocols)
- Feedback mechanism (changes, impact to improve data collection)
- Data quality module (explore data quality at different levels for data submitters, stock coordinators, stock assessors etc.)
- Secure storage and access of historical data (InterCatch)
- How to identify data gaps
- RDBES upload logs
- RDBES web functions to get data
- Data communication module (alert system if there are data corrections, communication between data submitters, stock coordinators, stock assessors), RCGs and ICES
- Standardized metadata overview also for communicators
- Dashboard to visualize data/progress – overall inventory of RDBES
- Set of KPIs

Other

- RDBES training workshops
- Resources for training experts in RDBES
- Link to communication tools (visualize, text etc.)
- Support transition to RDBES (R-packages, Information/Communication, User interface)
- FAQ development page
- How to involve third countries? Should they be partners in the project?
- RDBFIS? How to tackle this in the proposal?
- Make clear and easy for RDBES users what they can publish
- Nice logo
- Presentation materials (incl. flyers)
- Core group – need to be included in WP
- Make institute managers aware of the importance of RDBES
- A chat box for quick questions