Working Group on Governance of the Regional Database & Estimation System (WGRDBESGOV; outputs from 2023 meeting)

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ICES BUSINESS REPORTS

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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 2023 and plans for the work required in 2024 and beyond.

The RDBES has already replaced the RDB data system in 2023, and it is planned to replace ICES InterCatch by 2027. It has an important part to play in increasing transparency and improving the quality of stock assessment within ICES. To this end, WGRDBESGOV:

- works intersessionally during the year. Three intersessional subgroups (ISSG) are planned for 2024: The Core Group (continued), ISSG Data Quality (new), and ISSG Format on finalizing Regional Catch Estimates Format (RCEF) (new).
- plans workshops and working groups which help data submitters and stock coordinators with the transition to the new system. The outcomes of the groups held in 2023 were presented and four WG/WK have been planned for 2024: WKRDBES-INTRO, WKRDBES-RaiseStock1, WGRDBES-EST (2024-2027) and WGRDBES-StockCoord.
- works in coordination with the RCGs, to ensure that their needs are fulfilled.
- coordinates with a number of ICES WG who provide technical support in relation to different types of data: WGCATCH, WGBIOP, WGBYC and WGRFS.

During the WGRDBESGOV 2023, the participants worked in four subgroups about: Revision of the Roadmap, Data Quality, Funding, and Confidentiality.

Revision of the Roadmap

The subgroup dedicated to the revision of the roadmap gathered the feedback received from developers and from the different working groups, workshops, and users of the RDBES in 2023. From the ICES data centre there was a clear message that the core parts of the RDBES are complete and ready to be used by countries, ICES expert groups and RCGs. InterCatch uploads are expected to stop after 2026, discontinuing the usage of this platform in 2027 annual assessments. WGRDBESGOV reaffirms its plans that by 2027 all countries should be able to provide their estimates to all assessment working groups (AWGs) presently using InterCatch working with scripts that start from RDBES data and run on transparent assessment framework (TAF) repositories.

However, significant challenges are ahead to ensure that national data and estimates can be produced in time for RCG and AWG work. Some relevant features and enhancements are still pending, and attention is needed to develop the RDBES-TAF system and to train data estimators and stock coordinators in the set up and use of that system. Deadlines are located early in the year, reducing the time available for data transmission, quality checks, data submission and national estimation procedures. In order to address this challenge, fixed calendar for deadlines of data submission for AWGs is proposed. Additionally, some countries have indicated that they may need more time to get their national estimation routines ready, and there is uncertainty regarding the maintenance and usability of historical data presently stored in RDB, InterCatch and WGBYC databases (which contain important time-series). Using RDBES in benchmarks comes with some additional complications that need to be addressed before its use can be generalized.

A joint RCG-ICES data call (DC) is expected for April 2024, and smaller data calls are also planned for the testing of data by specific WG.

Confidentiality

A second subgroup worked in the Data license and proposed a number of changes to the document. The Conditions for RDBES data use were also updated. Among the changes proposed, one of the most relevant is the inclusion of a statement that data will be requested by a data call which will specify the data required, what it will be used for, and who will use it (thus, replacing the list of WG requiring access). In addition, all users of data from ICES groups and RCGs are now required to sign the "Conditions for RDBES data use" document. Finally, the rules around publication have been simplified. The existing Annex 1 describing rules on publishing data was amended so that it now only refers to RDB data. And an additional annex describing how data from the RDBES can be published has been added, removing the restriction on only publishing a single figure. The proposed changes will be distributed to all relevant National Correspondents / ACOM representatives during 2024 for approval.

Funding

During the meeting, WGRDBES discussed current and future funding solutions to support further development and implementation of the RDBES continuously. The group produced a list of short and long-term needs to achieve quality standards and fulfil specific end-uses needs. The functionalities selected to be developed in the short term (2024) will be included in a special request to the European Commission. The list of functionalities for the long term will be worked intersessionally, and potentially be framed in a regional project aiming to improve the data regionally, for all EU Member States and non-EU countries.

Data Quality

Ensuring and evaluating the quality of the data submitted to the RDBES was extensively discussed in the meeting. WGRDBESGOV decided to establish an intersessional subgroup on Data Quality, to develop a plan to integrate a quality procedure for RDBES data. To that aim, two levels of quality checks were identified: a Data Quality report for data submitter, and End-user checks. The format of the upload logs for reporting the completeness of RDBES data submitted was reviewed at WGRDBESGOV 2023. The format of the upload log was also reviewed and some improvements were proposed.

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	1/3
Chair(s)	Els Torreele, Belgium
	Lucía Zarauz, Spain
Meeting venue(s) and dates	20 November – 24 November 2023, 29 participants

1. RDBES annual workflow and support

The work done during the year impacting the WGRDBESGOV is impressive, and the output is of a very high quality. **Figure 1** describes the structure of the annual workflow WGRDBESGOV for 2024-2027. During the WGRDBESGOV 2023, this structure designed in 2022, was evaluated, further improved and adjusted where needed.

The setup of (flexible) intersessional work during the last years, has increased the overall achievement for the RDBESGOV work significantly. During the WGRDBESGOV 2023, the participants worked in four subgroups about: Data Quality, Funding, Revision of the Roadmap, and Confidentiality. From these subgroups, the ISSG active in 2023 was evaluated, dissolved when not needed anymore, and new ISSG was established. The list of ISSG for 2024 are described in Section 6 of this report:

- The Core Group (continued)
- ISSG Data Quality (new)
- ISSG Format on finalizing Regional Catch Estimates Format (RCEF) (new)

In addition, the following Working groups and Workshops have been proposed by WGRDBESGOV to support the RDBES implementation and are newly initiated or ongoing (Annex 2 and Annex 3):

- WGRDBES-EST
- WKRDBES-INTRO – 3
- WGRDBES-StockCoord
- WKRDBES-RaiseStock1

The WGRDBESGOV works in coordination with:

- the RCGs, to ensure that their needs are fulfilled
- a number of ICES WG who provide technical support to the WGRDBESGOV in relation to different types of data:
  - WGCATCH
  - WGBIOP
  - WGBYC
  - WGRFS
  - WGEEL

To enhance and support the communication about the RDBES, to present clearer the tremendous work done, to highlight the need of the input of the ICES community, specific actions, with background, and recommendations will be communicated to the RCGs, the National Correspondents, ICES ACOM and Secretariat.

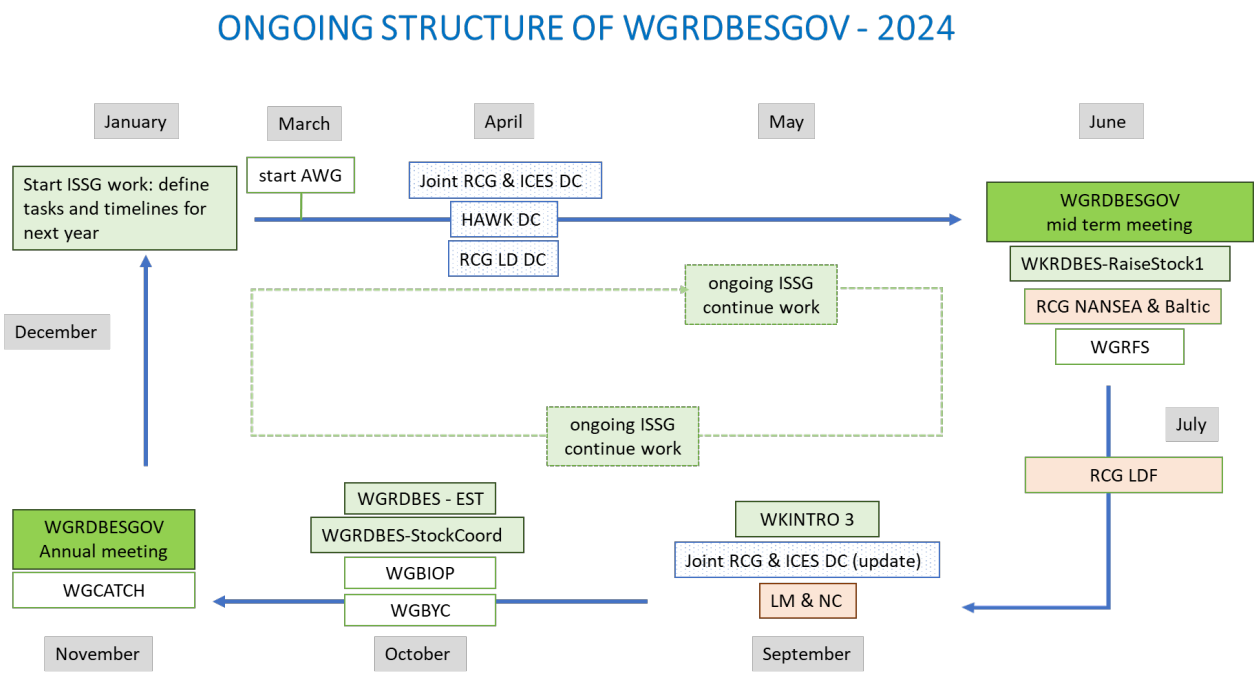

Figure 1. The test structure of the annual workflow WGRDBESGOV for 2024. (AWG: Assessment Working groups, DC = Data Call, ISSG = inter sessional subgroup, LM = Liaison Meeting, NC = National Correspondent Meeting, RCG = Regional Coordination Group). Green boxes filled are those events directly related with the WGRDBESGOV work. Dotted boxes show the Data Calls requesting RDBES data. White boxes filled are those ICES EG giving support to the WGRDBESGOV. Orange boxes correspond to RCG related events. (*) indicates that WK dates need to be confirmed

2. Roadmap

Based on the feedback received from developers and from the different working groups, workshops, and users of the RDBES in 2023, the WGRDBESGOV established a subgroup during the meeting to revisit and update the roadmap for RDBES development and implementation proposed by WGRDBESGOV in the 2022 meeting, with respect to the 2024-2027 period. The roadmap for RDBES implementation was reviewed and is summarized in **Table 1,** with some detailed considerations presented next. An outline of main data call types, quality issues involved in RDBES data extractions are given in the next chapter, alongside a description of the main data calls expected for 2024.

Table 1. Summary of the roadmap 2024-2027 (The roadmap extends to 2027 so that it is coordinated with the timeline of the present Data Collection Framework (DCF). WGRD-BESGOV will revise the roadmap regularly and make adjustments where needed)

	2024	2025	2026	2027
RDB	Data download	Data download	Data download	Data download
InterCatch	Data uploaded & download	Data* uploaded & download	Data* uploaded & download	Data download
RDBES	Data uploaded & download	Data uploaded & download	Data uploaded & download	Data uploaded & download
RDBES Data Calls	. Joint RCG-ICES RDBES DC (April) . HAWG RDBES data calls (n=2) (April/May) . RCG LDF RDBES DC (tbd)	. Joint RCG-ICES RDBES DC (TBD) . RDBES older data? (TBD) . RCG LDF RDBES DC (TBD)	. Joint RCG-ICES RDBES DC (TBD) . RDBES older data? (TBD) . RCG LDF RDBES DC (TBD)	. Joint RCG-ICES RDBES DC (TBD) . RDBES older data? (TBD) . RCG LDF RDBES DC (TBD)
Other Data Calls	. ICES Fisheries DC . ICES Recreational DC . ICES WGBYC DC	. ICES Fisheries DC . ICES Recreational DC . ICES WGBYC DC	. ICES Fisheries DC . ICES Recreational DC . ICES WGBYC DC	
Use of RDBES in stock assessment	. Test of RDBES uploads and estimations ahead of some stock assessment groups	. Test of RDBES uploads and estimations ahead of some stock assessment groups	. Test of RDBES uploads and estimations ahead of some stock assessment groups	. Use of RDBES data in the assessment of stocks currently uploaded to IC (in TAF)

	2024	2025	2026	2027
ICES & DCF Community	. WGRDBES-EST . WGRDBES-StockCoord (tbc) . WKRDBES-RaiseStock1 (tbc) . WKRDBES-INTRO . WGRDBESGOV – ISSG Quality - WGRDBESGOV – ISSG Format - WGRDBESGOV Core Group	. WGRDBES-EST . WGRDBES-StockCoord (tbc) . WKRDBES-RaiseStock2 (tbc) . …	. WGRDBES-EST . WGRDBES-StockCoord (tbc) . WKRDBES-RaiseStock3 (tbc) . …	. TBD
Deliverables	. R Package RDBEScore update . R Package RDBESvisualize launch . R Package RDBESstockCoord start	. R Package RDBEScore update, . R Package RDBESvisualize update . R Package RDBESstockCoord launch	. R Package RDBEScore update, . R Package RDBESvisualize update . R Package RDBESstockCoord update	. TBD

3. Implementation of RDBES

From the ICES data centre there was a clear message that **the RDBES is ready for full-scale usage and testing by countries, ICES expert groups, and RCGs**. Although significant features and enhancements are still pending (upload logs; keys to FDI; recreational fisheries tables, inclusion of estimation system in TAF), the core parts of the RDBES are complete and ready to be used. WGRDBESGOV has produced a list of short and long-term needs to achieve quality standards and fulfil specific end-uses needs (see Annex 2). In addition, considerable attention is needed on the development of TAF routines and the training of the national estimation community in their use. Finally, it is expected that upcoming widespread usage will improve the system, as the feedback given by users will prompt the development of new features that will increase its utility and usability.

From the ICES community side, **there was a clear message that efforts are underway 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 are being deployed with limited resources, hand-in-hand with annual routine data provision to AWGs. Thus far, efforts have focused mainly on the phase-in of national procedures for production and upload of data to RDBES data format by the September deadline. **Countries are now expected to focus on meeting the early deadlines required by AWGs and RCGs, and setting the RDBES data format as the starting point for their annual catch estimates.** To be fully implemented, the latter will need to take place in TAF, within a data flow that is still being developed at ICES level. The complexities involved in adaptation and configuration of national scripts within TAF appear to be the cause of some concerns among data providers.

3.1 Use of RDBES data in RCGs

The storage capabilities of RDBES are ready for full-scale RCG usage in 2024 and beyond. 2023 was the last year of RDB uploads. From 2024 onwards, RCG NANSEA, BA and LDF countries will upload data only to the RDBES.

In 2024 RDBES data will support RCG production of annual and multiannual summaries of RDBES data (under RCG ISSG "Catch, Effort and Sampling Overviews"). Data will also be used by RCG ISSGs in the production of upcoming Regional Work Plan tables, namely the production of Table 2.1 which is part of the upcoming RWP NANSEA and RWP Baltic, as well for the respective NWPs 2025-2027. In coming years RDBES is also expected to support RCGs in the production of Annual Reports of the DCF and in regular data provision to other entities like, e.g. STECF EWG FDI. In January 2024, a joint RCG-ICES data call (DC) with deadline 1st of April will be issued for that purpose.

3.2 Use of RDBES data in ICES AWGs

The storage capabilities of RDBES are ready to host commercial landings (CL), commercial effort (CE), and commercial sampling (CS) data from all ICES stocks, namely those which national estimates are presently being uploaded to InterCatch. Maintaining two systems (RDBES and In-

terCatch) in parallel is costly and suboptimal from the point of view of countries workload, version control of the data and scripts, and securing the reproducibility of national inputs to ICES assessments. InterCatch uploads are expected to stop after 2026, discontinuing the usage of this platform in 2027 annual assessments. By that time national estimation routines and stock coordination routines used in data provision for ICES stock assessments need to have moved to R environment and the ICES Transparency Framework repositories.

Still, in 2024 the usage of RDBES data in AWGs is expected to still be limited. A joint RCG-ICES data call (DC) is expected for April 2024 and the testing of specific sets of RDBES data is expected to take place in HAWG (via a specific data call) and WGMIXFISH; but, for the most, TAF roles and permissions still need some development before widespread AWG use can be considered (recommendation in Section 12).

Still, WGRDBESGOV reaffirms its plans that **by 2027 all countries should be able to provide their estimates to all AWGs presently using InterCatch working with scripts that start from RDBES data and run on TAF repositories.** WGRDBESGOV also **highlights that** the full implementation of RDBES in data provision to AWGs requires a set of adaptations and systems to be ready at both national and ICES levels, namely:

- Countries need to be secure that they are able to upload annual (y-1) CL, CE and CS data and provided the requested estimated, by current deadlines set for AWG in the ICES general Data Call;
- Countries need to secure that they are able to produce their annual data deliveries to AWGs using R scripts that use RDBES data as a starting point;
- Countries and ICES need to secure that national staff is adequately trained and competent in the use of both RDBES and TAF;
- 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, and the final stock-level coordinated commercial inputs to assessment models.

The calendar is ambitious but necessary, and it will bring new data and new procedures for commercial estimates used in ICES advice, increasing its overall quality.

WGRDBESGOV advises ICES countries to steadily transition their estimation procedures to the RDBES format so that they have fully transitioned to the new system in 2027. By then, national institutes will need to upload data to RDBES and produce national-level estimates of commercial catches early in the year (possibly as early as 1 March). To facilitate that process WGRDBESGOV has promoted (and will keep promoting during 2024-2026) a set of working groups, workshops, and training events focused on RDBES usage and implementation of national estimates in TAF (more details in Section 6).

WGRDBESGOV further recommends 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 that system once it is specified. WGRDBESGOV suggestion is that a core-group for RDBES-TAF development is established that includes TAF developers, national estimators, and stock coordinators. The aim of such a core group should be specifying the TAF system with regards to estimation of commercial data and setting up a training programme with a focus on the national data providers that will use that system.

3.3 Use of RDBES data in ICES Benchmarks

In addition to routine AWGs, it is expected that RDBES is also used by ICES benchmarks. Using RDBES in benchmarks comes with some additional complications that need to be addressed before its use can be generalized. Benchmarks frequently issue data calls on 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. Based on this, **WGRDBESGOV suggests that, while InterCatch is operational and before issues related to annual AWGs are solved and the benchmark process receives full consideration at WGRDBESGOV and other groups (e.g. WGCATCH), benchmark requests for RDBES data are restricted to more recent years or work of exploratory nature, and that InterCatch uploads remain the preferred means to obtain the updated estimates.**

3.4 Challenges in RDBES implementation

A few significant challenges are ahead, namely with regards to ensuring that national data and estimates can be produced in the desired form (RDBES format) in time for RCG and AWG work. The main problems are that:

- Deadlines are located early in the year, which reduces the time available for data transmission (e.g. last year's logbooks sent by control agencies to national institutes preparing data), quality checks (e.g. of biological data), data submission, and national estimation procedures. In order to address this challenge, it is proposed to set fixed deadlines of data submission for AWGs, in order to help data submitters in the planning of their annual data provision work (more details can be found in Section 4.1.4).
- It is uncertain to what degree national estimation routines will be ready for deployment via RDBES-based estimation scripts for all stocks presently in InterCatch by 2027. Some countries have indicated that they may need more time for some working groups (analysis made on WGCATCH 2023 informal questionnaire).
- It is uncertain to what degree the TAF system will be ready, as difficulties have been reported by ICES data centre to develop TAF procedures related to RDBES, and by countries to understand TAF and implement new routines there.
- Some non-EU countries did not upload data to RDBES in response to the September 2023 data call. There is a need to follow-up closely on this.
- There is uncertainty regarding the maintenance and usability of historical data presently stored in RDB, InterCatch, and WGBYC databases, as data they contain important time-series being routinely used or consulted by different end-users.

4. Data Calls

WGRDBESGOV planned the data call calendar for 2024, and compiled an overview of the different types of data calls and implications they have in terms of data found in RDBES at a given moment. The aim of the overview is to help end users request data in an orderly fashion and managed their expectations with regards to the quality of data they will obtain during the 2024-2026 transition period. This overview can also support data submitters and national estimators in the planning of their annual data provision work for RCG and ICES purposes.

4.1 Types of data calls

Data contained in the RDBES are relatively similar to the data contained in the previous RDB but are fundamentally different from data stored in InterCatch. In fact, RDBES does not store stock-by-stock national estimates of commercial catches, like InterCatch, but rather raw (or close-to-raw) sampling data (CS table) and population data (CL and CE tables). InterCatch-type stock-by-stock estimates (HI and SI) can be partially derived via R-scripts integrated in TAF[1].

Two entities currently issue data calls to populate the RDBES: RCGs (specifically RCG NANSEA, RCG BA, and RCG LDF) and ICES. Data calls can request data to be uploaded to RDBES for the first time or updates of data previously uploaded.

4.1.1. RCG data calls

RCG data calls request the population of the CL, CE, and CS tables of RDBES for RCG work. In synchronization with the RCG annual work cycle, RCGs data calls require full data to be uploaded in a one-off event in April each year. RCG data calls are restricted to RCG NANSEA, BA and LDF countries and geographical regions.

In 2024, RDBES data will support RCG production of annual and multiannual summaries of RDBES data (under RCG ISSG "Catch, Effort and Sampling Overviews"). Data will also be used by RCG ISSGs in the production of upcoming Regional Work Plan tables, namely the production of Table 2.1 of the upcoming RWPs and NWPs 2025-2027. In coming years RDBES is also expected to support RCGs in the production of Annual Reports of the DCF and in regular data provision to other entities like, e.g. STECF EWG FDI.

4.1.2. ICES data calls

ICES data calls aim at gathering the data and catching estimates from specific countries and fish stocks, needed for ICES advice work. Data calls also support the work of EGs involved in the development of the RDBES system. Consequently, ICES uploads requests and data usage take

[1] In most cases (though not all) the national effort currently uploaded as InterCatch HI rows and the landings records currently uploaded as InterCatch SI rows for a stock should provide relatively close values to careful aggregations of RDBES CE data and CL data, respectively. However, estimates of discards and estimates of catch age and length composition uploaded to Intercatch as SI and SD rows that can only be derived from RDBES sample (CS) data via R scripts and procedures that for the most are still being developed or adapted to the RDBES format at national institute level.

place continuously during the year dependent on AWG and advice needs. ICES data calls are restricted to ICES member countries.

Between 2024 and 2027 ICES data calls will aim mostly at testing the capabilities of countries to upload data to the RDBES and provide commercial catch estimates from RDBES data in time for AWGs.

In addition, taking advantage of the new system being ready and the capabilities in some countries to already prepare the RDBES upload format from their national databases, some RDBES data calls will also start being issued for purposes of data inventory and data exploration within specific EGs (e.g. benchmarks as for HAWG DC).

4.1.3. Joint data calls

The RCG and ICES data calls partially overlap in their aim of populating the RDBES tables. However, they differ in the calendar of their data calls and in their geographical coverage. This situation generates (partial) overlap between the data calls in both time, geographical and data coverage. It is therefore advantageous that the timings and content of the RCG and ICES data calls are closely coordinated and, where possible, joint data calls are issued[2]. WGRDBESGOV is presently the forum for that annual coordination.

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).

This joint DC requires a few developments on ICES data centre side: a mechanism is found for the storage and maintenance of upload logs and data submitter messages alongside the RDBES data. Additionally, it is important that the outstanding issue preventing the upload of FDI fields in CL and CE tables is solved. ICES data centre is expected to make these changes and open the upload facilities ahead of 1st of March, making it for a challenging calendar.

It should also be noted that the issuance of a data call so early in the year requires countries to prepare their CL, CE, and CS data much earlier than previously done (in April vs September) and that uploads requested for RCG usage will take place during the typical season of data provision to ICES AWGs. This is an increase in workload, and it has never been tested, but the shift in the calendar cannot be avoided and will need to be the norm for RCG countries and ICES members. To accommodate for these challenges and possible implications they may bring to the quality of the data uploaded, WGRDBESGOV calls the attention of ICES Secretariat and RCGs that, during this first year, the April data call should be clear considered a test with regards to CS data, whereby countries are asked to upload all data from their sampling programmes but there is some understanding for potential data omissions and quality issues as long as these are reported in the upload logs.

4.1.4. Proposal of fixed deadlines for providing data to ICES WG

The implementation of commercial catch estimation of ICES stocks in RDBES will require countries to carry out uploads and updates of RDBES data and deploy new estimation routines in TAF that run on those uploads, in the time period till now reserved to AWG data provision. While the system is being tested and implemented (2024-2026) that additional work will have to

[2] Access to specific data sets is afterwards controlled within the system via access permissions to different types of end-users.

be "squeezed in" by each country alongside the usual data deliveries done to ICES AWGs, constituting significant additional work for national data estimation teams.

At present the deadlines of data submission for AWGs are flexible, changing from year to year, even if the advice calendar stays, for the most part, largely the same.

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. Such fixed calendar of deadlines would not differ much from the current flexible deadlines but would be a significant help to data estimation teams in ICES countries, allowing them to plan ahead their activities with a multi-annual perspective (2024-2026) and make room for the two processes (routine data provision to AWGs and transition from IC uploads to RDBES) to be carried successfully.

In response to that need, a proposal for a data submission calendar with fixed dates was elaborated to be sent for consideration of the ICES Secretariat and FRSG. With few exceptions the proposal is based on the 2023 deadlines for AWGs so as to encompass the needs of ADGs and not cause significant change to the usual timings of AWGs.

	2023 DC DEADLINE	Fixed Calendar proposal	Type of Change	COMMENTS
HAWG	01-Mar	01-Mar	Same	
WGNAS	10-Mar	15-Mar	slightly later	
WGBFAS	17-Mar	15-Mar	slightly earlier	
AFWG	22-Mar	22-Mar	Same	
NWWG	31-Mar	01-Apr	slightly later	
WGNSSK	27-Mar	07-Apr	later	Helpful to avoid overlap with RCG data call (1-Apr). 3 or 4-Apr suggested as alternative if needed
WGBIE	03-Apr	07-Apr	slightly later	
WGDEEP	05-Apr	07-Apr	slightly later	
WGCSE	11-Apr	15-Apr	Slightly later	
NIPAG	not specif	15-Apr		
WGCEPH	17-Apr	01-May	later	WGCEPH 2023 started 3-July
WGMIXFISH (METH&ADVICE)	12-May	15-May	slightly later	
WGEF	26-May	22-May	slightly earlier	
WGHANSA-1	04-May	01-May	slightly earlier	
WGWIDE	01-Aug	01-Aug	same	
WGSCALLOP	14-Aug	15-Aug	slightly later	
NIPAG	21-Aug	21-Aug	same	
WGHANSA-2	31-Oct	01-Nov	slightly later	

4.1.5. Data call updates: Completeness and quality of data.

The time of the year and the purpose of the data call determines the overall completeness and the quality of data present in the RDBES at any given point in time. Data calls that take place very early in the year, when the data required for populating the RDBES are only partially available at national institutes, result in data present in RDBES being incomplete (e.g. a restricted number of tables and/or a limited number of variables in those tables). As the year goes on and datasets become fully available and quality checked at national institutes, it is increasingly possible to upload complete quality-checked national data to RDBES and therefore to increase the overall completeness and quality of the data.

Those updates can take place voluntarily (by member state initiative or in response to end-user reports on errors found) or be requested to take place at a designated date in the original data call.

This process needs to be further discussed and tested, with the aim that for 2027, all the issues related with data completeness and quality are solved. Below we present the results of the discussions taken place at the WGRDBESGOV this year.

Previous year data

The quantity and the quality of last year's data that can be extracted from the RDBES at any given moment evolves constantly. Data calls (and countries own uploads) issued early in the year rarely generate complete last-year data because data from the previous year is not yet fully available. Such requests need necessarily to be restricted in their content to the few species and sampling programmes for which data are available and quality checked early in the year.

As the year evolves, data available at national institutes becomes more and more complete and available for upload to RDBES. Quality also increases as result of increased internal checks and increased end-user feedback. Consequently, as the year evolves increased completeness and quality is expected in terms of overall data content of RDBES making it possible to service confidently an increased number of end-usages. By the end of summer few to negligible changes occur in data available at national institute level and RDBES uploads provide a near complete quality view of last year's data

Historical data

The quantity and quality of historical (*sensu* before last-year) data in the RDBES at any given moment also evolves, albeit much less systematically in time. Data calls on historical data are generally one-off events which content is strongly dependent on the specific purpose at hand and that may request data respecting different time spans. E.g. data may be requested for a very specific period with uploads requested for full CL, CE, and CS data (e.g. if RCG needs it) in a specific data call while another data call requests specific RDBES tables or even only CS data from a particular sampling programme that targets a specific stock (e.g. a stock being handled in an ICES benchmark). In addition, how far backwards historical data are available at national institutes, how complete and quality assured they are and how well documented they are and fit into the RDBES data model, really depends on historical data management practices in individual countries involved in the different data requests. This diversity in completeness and quality of historical data advises that historical data is not extracted from RDBES unless i) a specific data call is issued or ii) a previous consultation is taken with data submitters on data availability and quality before data are extracted.

The specific case of benchmarks

Benchmarks constitute moments in time when historical data can be requested and used in the re-estimation of catches from a specific stock. As such, during a benchmark process vast parts of historical data in RDBES are expected to be uploaded (if never uploaded before) or updated (if new values have become available since last call). It is important to note that, when benchmark data calls are issued targeting data from a specific stock, uploads and updates to the RDBES are not restricted to a single stock but rather involve the entire programmes related to it potentially adding/changing/improving data from other stocks[3]. Still, it is rarely the case that a benchmark triggers the update of all programmes – more frequently only a few national programmes are uploaded (those involving the stock the benchmark aims to re-analyze). For that to happen a broader data call (such as the joint RCG-ICES data call referred to in section 4.1.3) needs to take place that ensures the completeness and quality of historical data.

[3] These changes to the data make it even more important that the TAF system of version control is used otherwise results from previous assessments may no longer be reproducible.

4.1.6. Data Call calendar

Table 2. RDBES data Calls planned in 2024

Data Call name	Timeline	Data requested	Purpose	Remarks
Joint RCG+ICES DC on general RDBES data	- Issuance: Jan 2024 - Deadline: Apr 2024; - Update1: TBD (mackerel related data) - Update2: Sept 2024 (all data)	- 2021-2023 CL/CE and 2022-2023 CS including bycatch (DCF pilots and routine); - upload logs documenting completeness and quality of data uploaded	- RCG: CL and CE data will be used by RCG NANSEA+BA in the production of RWP tables and RCG Catch, Effort and Sampling Overviews; CS data will test the capabilities of countries to upload CS data in this earlier deadline; CS data will also assist RCG work on the transition of sampling overviews from RDB to RDBES format; - ICES: CL, CE and CS will be used in WGRDBESGOV and related workshops (e.g. WGRDBES-RaiseStock1) to help specifying, developing and test RDBES-TAF system.	- Data call will include a request for an update with deadline in September 2024. - Data call will be sent to countries in January 2024, final model specification and upload facilities will be ready from 1st of March. - A separate data call will be issued by RCG LDF - This is an RDBES data call and should not be confused with the ICES Fisheries DC 2024 (Landings, discards, biological sample and effort data from 2023 in support of the ICES fisheries advice in 2024).
ICES HAWG DC on her.27.20-24	- Issuance: TBD - Deadline: April/May 2024	2019-2022 CL and CS data used in national estimates of her-ring in 27.20-24	Detailed data are needed to correct the mean weights per stock after stock splitting. This issue has become more and more prominent since 2019. The data will also be used to set up proper stock splitting routines with RDBES data as the input and explore possible future estimation routines.	- upload request will target CS data from all programmes related to this stock and all CL data relevant for the stock.
ICES HAWG DC on spr.27.3a4	- Issuance: TBD - Deadline: April/May 2024	2022 CL and CS data used in national estimates of sprat in 27.3a and 27.4	Presently the commercial estimates for the stock assessment are estimated at a regional scale. During the benchmark all estimations scripts will be migrated to R and the RDBES format. A single year of data will be needed to test this migration.	- Upload request will target CS data from all programmes related to this stock and all CL data relevant for the stock. - The same data are requested by the joint RCG/ICES data call in the beginning of April 2024, so the data call is more to highlight the stock and the use of data in the benchmark.

Data Call name	Timeline	Data requested	Purpose	Remarks
RCG LDF DC on long-distance data	- Issuance: May 2024 - Deadline: June 2024	- 2023 CL/CE - upload logs documenting completeness and quality of data uploaded	- CL and CE data will be used by RCG LDF in the production of RWP tables and RCG Catch, Effort and Sampling Overviews.	- MS to provide all data to the new RDBES, as far back in time as possible; - in order to obtain a comprehensive overview of the fisheries in the outermost regions listed in Table 1 (EU waters around French Guiana, Martinique and Guadeloupe islands (FAO area 31) and EU waters around Mayotte and La Réunion islands (FAO area 51)) will stress the provision of the CL and CE data from mentioned regions.

5. Other systems

5.1 Regional Database - RDB:

2023 has been the last year that the RDB was used to upload new data. From 2024 onwards there will not be a data call for this DB anymore. RCG will use the RDBES for their work, and the RDB will only be used to download historic data.

WGRDBESGOV further notices that the long-term maintenance of present RDB and the data it presently contains needs to be discussed at RCG level. Those data constitute a time series of CL landing; CE effort and CS sample data with some inconsistencies but that may be important for some specific purposes. Still, keeping RDB alive reduced to a data storage facility, from which historical data can only be downloaded, while maintaining the new RDBES and keep it running for present and future data will be costly. WGRDBESGOV recommends RCGs to discuss the long-term maintenance of the RDB and to engage with the ICES data centre and WGBYC in an investigation of possible solutions (see recommendations in Section 12).

5.2 InterCatch - IC:

Due to the number of stocks and AWG using InterCatch, and the complexity of the data contained, the pashing out of IC needs to be done progressively. InterCatch will work normally until 2026, and **by 2027** the assessment of all stocks will be integrated in the RDBES workflow, and therefore there will not be a need of an InterCatch data call. In the meanwhile, selected stocks will progressively complete the transition to RDBES in order to be ready to accomplish the transition in 2027. A series of workshops, called WKRDBES-RaiseStock1-3 will be organized (see Annex 3).

One scenario for InterCatch in the future could be to keep InterCatch until it is agreed to not allow more stocks to use InterCatch, and then to keep InterCatch alive to be able to download the historical data used for previous assessments (until it is not relevant or serious work have to be done to keep it alive). The good thing with InterCatch is that unless a serious system upgrade is needed, not much work is needed to keep InterCatch alive.

WGRDBESGOV recommends the ICES data centre to discuss the long-term maintenance of InterCatch and to engage with the RCGs and WGBYC in an investigation of possible solutions (see recommendations in Section 12).

5.3 Bycatch database

WGBYC is currently working with RDBES data, to test if the data model for bycatch data fulfils their needs. WGBYC is giving feedback to the core group on the issues encountered. Once it is confirmed that RDBES data fulfils the WG needs, 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.

The core group is already in contact with WGBYC and is providing them support. This support will continue during the year.

WGRDBESGOV recommends WGBYC 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.

WGRDBESGOV recommends the ICES data centre to discuss the long-term maintenance of InterCatch and to engage with the RCGs and WGBYC in an investigation of possible solutions (see recommendations in Section 12).

6. RDBES subgroups, workshops and training

WGRDBESGOV reaffirms that from 2024 onwards EU countries should be able to upload to the RDBES the data needed for RCG work. By 2027 all ICES countries should also be able to provide final estimates from data uploaded to RDBES by the time of usual ICES AWGs submission deadlines. From 2024 data will not be uploaded to RDB and from 2027 no more uploads will be made to InterCatch and WGBYC databases.

To support countries and ICES Data Centre in the transition from InterCatch to RDBES-TAF system, WGRDBESGOV suggests the following Expert Groups to be formed/continue their work in 2024:

WGRDBESGOV Intersessional subgroups:

1. **WGRDBESGOV Core Group of development of RDBES**: With similar objectives to previous work period. More details in Section 10.
2. **WGRDBESGOV ISSG Format on finalizing Regional Catch Estimates Format (RCEF)**: to finalize the draft RCEF produced by WKRDBES-Raise&Taf2 and deliver to WGRDBES-StockCoord. The ISSG shall be composed of a small number of members of WGRDBESGOV. It should work early in the year to give feedback to WGRDBES-StockCoord. If that is not possible, the RCEF will need to be finalized during the WGRDBES-StockCoord. More details can be found in Annex 3 of the WGRDBES-WKRAISE&TAF2 report.
3. **WGRDBESGOV Quality**: to develop a procedure to ensure the quality of WGRDBESGOV data. More details in Section 9 of the report.

WGRDBESGOV- related expert groups:

1. **WGRDBES-EST (2024-2027):** to continue developing R tools for design-based estimation and visualization of RDBES data. Resolutions available in Annex 3.
2. **WKRDBES-INTRO:** to inform on latest RDBES updates and support data submitters in data submission. Resolutions available in Annex 3.
3. **WKRDBES-RaiseStock1:** this will be the first of a set of three WKs aiming to support the transition of current national estimation procedures to RDBES. The first stock approached in mac.27.nea. The plan is for the WKs to take place in Q3-2024 ahead of WGWIDE. And for the second and third workshop to take place Q2-2025 and Q1-2026 so as to test countries abilities to upload and estimate from RDBES in time. Stocks related to other EGs will be approached in WKRDBES-RaiseStock2 (2025) and WKRDBES-RaiseStock3 (2026). Resolutions available in Annex 3.
   Target participants: data submitters and stock coordinator involved in production of commercial catch estimates used for selected stocks, extends to those involved in other stocks of main stock AWG.

4. **WGRDBES-StockCoord:** this EG will develop a set of R functions for stock coordination. These functions will replace current InterCatch procedures, receive as input a new format of national/regional estimates (see WGRDBES-WKRAISE&TAF2 report) and produce as output regional catch inputs for stock assessment. The functions will be incorporated in a R package to be made available in the ICES GitHub. Resolutions available in Annex 3.
   It was **s**uggested to take place back-to-back with WGRDBES-EST exploring synergies in building RDBES related R packages.
   Target participants: Stock coordinators and national data submitters with R expertise. Data analysts with experience in R package development.
5. **TAF training**: training for TAF will be discussed by the TAFGOV group and will be organized by WGTAFGOV in consultation with WGRDBESGOV.to train national estimators in implementing their estimates in TAF.

A summary of the experts groups related to the RDBES and the TAF training held in 2023 is presented in Annex 7.

7. Confidentiality

7.1 Background

It has previously been noted[1] that the RDBES Data License needs to be updated. The main reasons highlighted were:

- The current RDBES Data License allows a pre-approved list of ICES groups access to aggregated data. Commercial effort and landings data (CE and CL) in the RDB was considered aggregated data however with the greater level of disaggregation of this data in the RDBES that is no longer the case. The relevant section of the Data License therefore needs to be updated.
- The annex of the current RDBES Data License provides rules for how to present data in public reports – these rules are based on the columns that are present in the RDB. The RDBES now provides more columns which can be used to determine when data should be considered sufficiently aggregated such that it is no longer confidential.
- Data confidentiality is handled differently in different data calls (e.g. RDBES, ICES spatial fisheries and EU Fisheries Dependent Information data calls) and it would be useful to harmonize the approaches when dealing with the same data types and/or sources.
- Summary reports based on the RDB/RDBES have been created and they have been found useful by different groups (e.g. the Baltic Fisheries Assessment Working Group WGBFAS) but these relevant graphs/maps could not be included in public reports due to the current confidentiality constraints.

When updating the RDBES Data License it is necessary to take into account the proposals around data roles and permissions during data provision for stock assessment that have already been agreed[2] – in particular, that access to detailed data is only granted if the data provider gives permission. (Whilst these permissions have been defined, they have not been implemented in RDBES/TAF yet.)

It should also be remembered that all ICES restricted data licenses follow a common format with some common text – any changes to these common license elements would need to be coordinated with all other data governance groups dealing with restricted data licenses.

7.1.1. Proposed Changes

A number of changes to the Data License were proposed and these are presented in full in Annex 4. The Conditions for RDBES data use have also been updated and are presented in Annex 5. The main changes proposed are:

- In the License Grant section, the text:

"*Countries grant permission for aggregated data, see Annex 1, to be used by ICES in the provision of scientific advice to the European Commission and other ICES clients of scientific advice. A list of the ICES*

groups that require access to aggregated data will be provided to the RCG's and ACOM members by 31 Jan each year."
was replaced with:
"Countries grant permission for data to be used by ICES in the provision of scientific advice to the European Commission and other ICES clients of scientific advice. Data will be requested by a data call which will specify the data required, what it will be used for, and who will use it."

- All users of data from ICES groups and RCGs are now required to sign the "*Conditions for RDBES data use*" document.
- The existing Annex 1 describing rules on publishing data was amended so that it now only refers to RDB data.
- An additional annex describing how data from the RDBES can be published was added. The rules around publication have been simplified so that a Rule of Three applies to CE, CL, and CS data i.e. in general data needs to be aggregated such that each aggregated unit contains data from at least three unique vessels. There are no restrictions on publishing more than one figure.

7.1.2. Communication

Under the update rules previously agreed[3] any Data License changes need to be approved by all relevant National Correspondents / ACOM representatives. It was agreed that when asking for approval evidence should be presented to i) support the necessity of the changes, and ii) allay data providers' concerns related to the inadvertent disclosure of personal or confidential data.

It was agreed that previous legal guidance provided by the European Commission on their view that the data in the RDB/RDBES should not be considered personal data under the General Data Protection Regulation (EU GDPR) was helpful. A similar legal guidance on whether a Rule of Three would be sufficient to preserve confidentiality of commercial fisheries data was requested during the meeting.

It was noted that asking permission to use data from the RDB/RBDES is currently a difficult and time-consuming process since it involves contacting each data provider's National Correspondent / ACOM representative each time there is a new end-user request.

It was agreed that this process could be improved if the requests foreseen for 2024 and 2025 could be amalgamated into a single request. To do this we can look on the RDBES development roadmap, find which groups will need access to the data in the next couple of years, and then create a single request for data use by those groups. This will reduce the amount of paperwork whilst still honoring the need for data providers' consent.

[1] WGRDBESGOV 2022 https://doi.org/10.17895/ices.pub.22786034.v1
[2] WKRDBESRaise&TAF2 2023 In press
[3] WGRDBESGOV 2020 https://doi.org/10.17895/ices.pub.7976

8. Funding

WGRDBES discussed current and future funding solutions to support further development and implementation of the RDBES continuously. The funding of maintenance and support to RDBES users is secured through various Memorandums of Understanding (MoUs) between ICES and advice recipients. Over the last years, the development of the RDBES and the expansion of its functionalities have been supported by ICES' equity funds. This funding will conclude at the end of 2024, and a new funding structure will be required to support the foreseen developments sustainably. Further RDBES development is crucial to ensure the availability of high-quality data for stock assessment and advice, as well as RCG needs.

Different funding options were explored to fulfill identified needs. An open procurement procedure is not deemed viable for RDBES, and a two-step approach is proposed. First, a short-term special request for support is prepared, covering urgent development needs in support of DCF (i.e. RCG) needs. Secondly, the requirements for a long-term development plan are defined, linked to the evolution of the needs to fulfil the need of the transition process.

The proposed approach for the short-term plan builds on the positive experience gained through the jointly funded EU and UK SmartDots initiative. Based on consultation with the Commission, WGRDBESGOV drafted a recommendation specifying short term development needs.

For the long-term plan, two scenarios are considered:

- Scenario 1: a non-recurrent special request is developed, containing an updated list of development needs, including stakeholders and proposed shareholders and anticipated budget implications. The long-term development will be modular and fit for non-recurrent special requests and aligned with the current funding arrangements. The modules or work packages contain logical building blocks where different functionalities are developed in conjunction to reach maximum efficiency. This modular approach could allow the spread the funding across different advice requestors. Milestones may be defined to support intermediate reporting of deliverables and funding mechanisms.
- Scenario 2: WGRDBESGOV reaches out to the ISSG Regional Workplan (RWP) under the RCGNANSEA & Baltic with the objective to investigate the possibilities to start a regional project for all EU Member States and non-EU countries aiming on regional improving of data. The further development of the RDBES would be one out of many work packages, WP, which is expected to be developed by ICES Secretariat. The project idea will be presented by the chairs to RCGs NA NSEA, Baltic and LDF. It is expected that all countries participate, but not all countries will be expected to receive funding and work on the WP.

After the WGRDBESGOV meeting, a discussion took place between chairs WGRDBESGOV, ICES Secretariat and ICES Data Centre. It was decided that Scenario 2 would be the optimal approach.

A list of prioritized functionalities is presented in Annex 2. The functionalities selected to be developed in the short term (2024) by means of a special request are identified. The list of functionalities for the long term will be worked intersessionally.

Risk and Challenges

While a potential lack of funding remains the prime risk for the development of the RDBES, insufficient engagement of users, AWGs, and advice requestors may hamper future sustainable funding opportunities. Especially when it comes to the engagements of non-EU countries concerning joint funding of the developments in the future. Some high-priority development needs related to the broader advisory process cover the need to secure the inclusion and availability of by-catch data and recreational fisheries. Determining which elements of the RDBES are purely DCF-related and which are related to a wider community may be difficult. Working groups requesting the data may not consider regulations under which data were collected. WGRDBESGOV, therefore, suggests ACOM addresses the development and implementation of the RDBES with higher priority as the support of ACOM and subsequently from the countries and national institutes is crucial for long-term support of the system.

9. Data Quality

Intersessional Data Quality subgroup

Ensuring and evaluating the quality of the data submitted to the RDBES was discussed in the WGRDBESGOV 2023 meeting. In WGRDBESGOV 2022, a Quality Control (QC) procedure was suggested, and it was recommended that the RCG ISSG Quality should be restarted to evaluate the data quality. This recommendation was rejected by the RCG, with the opinion that the RCG can only check data from EU MS and only data for RCG purposes, and not for ICES purposes.

Based on the above, WGRDBESGOV decided to establish an intersessional subgroup on Data Quality, chaired by Karolina Molla Gazi (the Netherlands). Starting from February 2024, monthly 3-hour meetings are expected until the end of May.

Main tasks of the ISSG Data Quality:

- To develop a plan to integrate quality procedure, taking into account the three levels of quality checks defined below.
- To start developing further the Data Quality report for data submitters.
- To present the concept, roadmap, and a draft Data Quality Report at the RCG NANSEA & Baltic Technical Meeting in June, asking the RCG for feedback and endorsement on this.
- To see where it fits in the total approach of ICES quality procedure.

During the WGRDBESGOV, three levels of quality checks are identified:

a) **RDBES data upload checks:** some data checks are already implemented when uploading RDBES data (formats, codes, duplicates etc.).

b) **Data Quality report for data submitter:** a report giving the data submitter an overview of data uploaded will be useful, similar to reports generated for other data calls (e.g. STECF FDI, ICES VMS/Logbook). A script producing an html report giving an overview of RDBES effort and landings already exist on RDBES GitHub, but it should be improved and advertised, and will need to be maintained. It is also suggested to implement some cross-checking between tables, e.g. landings without corresponding effort.

   One option that would increase the use of the data check tool is to retrieve the quality report after the submission of data on the RDBES data upload facility. To enable this, a functionality would need to be developed at the data upload website where it should be made possible to request a data quality report, which would then run the script based on the uploaded data and make it available to the data submitter.

c) End-user checks

- When data checks are made by end-users, there should be a feedback loop to data submitters in case of data issues. According to the RDBES data license, ICES should be contacted if errors are spotted.
- Examples of end user groups where data checks can be performed are shown in Annex 6.
- It would be useful to have a data submitter email address by country to be contacted in case of issues with data.

- If a data issue is spotted, it should be possible to resubmit data, meaning that the RDBES data upload facility should be kept open.
- End users can suggest data checks to the Data Quality subgroup and be evaluated and eventually incorporated in the data quality procedures (the Data Quality report; in the RDBES data upload checks, etc). Requests for checks **should come** with R code to perform the check.

RDBES upload logs for reporting data completeness

The format of the upload logs for reporting the completeness of RDBES data submitted was reviewed at WGRDBESGOV 2023.

The main purpose of the upload log is to assess the completeness of the data uploads and to report any known issues with the data.

It was discussed if there should be a possibility to direct a message to an end-user/WG directly in the upload logs, but the opinion was that it might not be the most efficient way to communicate with end-users. In the future, it will be possible to direct a message to end-users in the TAF framework when providing overviews and estimates. Currently messages to stock assessors can be included in the email to ICES (accessions@ices.dk).

When changing to multiple data uploads to the RDBES in 2024, it was discussed when to request upload logs from data submitters. If requesting for every data upload, it would be complicated to keep track of upload log excel-files throughout the year. In 2024, it is suggested that upload logs are requested in April (for the RCG/ICES data call) and in October for final uploads. For the RCGs it is important to know if something is missing in the CL file for completing the RWP Table 2.1.

Currently the format of the upload log is an excel sheet that is emailed to ICES. WGRDBESGOV suggest to add information about institute and sampling scheme for CS data and to update the guidelines for filling in the upload logs. The indication of percentages of data missing should come with the metrics used for reporting the percentage.

Data upload for the RDBES data call for 2023 data

UniqueID	Year of Data call	Country	Institute	Date of data call deadline	Data type	Sampling scheme if data type is CS	Full upload	If *No* then missing data description	Issue description
Unique number	*Year of call*	List			List	SamplingScheme vocabulary //vocab.ices.dk/?ref=1664	List	*Description of data that is missing (give an indicative percentage)*	*Description of issue and of any action that will be taken by the submitting instution to resolve it.*
1	2023	ZW	ZW Administration	01/04/2024	CL		No	SSF are missing, about 2% of landings.	Logbook data are not available for SSF
2	2023	ZW	ZW Administration	01/04/2024	CE		No	SSF are missing, about 5% of trips.	Logbook data are not available for SSF
3	2023	ZW	ZW National Fisheries Intitute	01/04/2024	CS	National Routine Onboard	No	About 10 % of the samples were not uploaded (demersal at sea samples)	New internal procedures will be made and the conversion tool will be updated.
4	2023	ZW	ZW National Fisheries Intitute	01/04/2024	CS	National Routine Bycatch	No	None of the bycatch data were uploaded.	New internal procedures will be made and the conversion tool will be updated.

Figure 2. Revised suggestion for RDBES upload log 2024

Below are suggestions for points to include in the sheet 'How to fill in upload logs':

CL	○ **Are data from full fleet reported?** ○ **Are all species reported? (commercial and non-commercial)** ○ **Are data from all areas reported?** ○ **Provide an indication of the percentage of landings missing.** ○ **Are logbook registered discards and BMS landings reported?**
CE	○ Are data from full fleet reported? ○ Are data from all areas reported? ○ Provide an indication of the percentage of trips missing.
CS	○ Are all sampled species reported? ○ Are all sampled biological variables reported? (length, weight, maturity, age, sex) ○ If the data upload is not complete for any of the sampling scheme, please disaggregate the upload log by sampling scheme. For sampling scheme, use the code from SamplingScheme vocabulary //vocab.ices.dk/?ref=1664.

For future development, there is a wish of a possibility of informing about the data completeness directly within the upload facility at the time of data upload.

- When uploading data there could be a checkbox if the data uploaded are complete (Y/N).
- There could be a box to add a comment.
- For CS data the possibility to add information by sampling scheme (optional).

10. Progress achieved in the RDBES and status of the different types of data and core group

ICES RDBES development

This year is the last year within the project funding agreed by the ICES Council a little more than four years ago. Therefore, it is an issue to find new funding, because there are still essential developments, which needs to be done, to have the full benefit of the RDBES.

Years	Task completed (expectations at the start of the project)
2020-2021	Fully operational ICES Regional Database (RDBES) with a regional estimation system such that statistical estimates for stock assessment can be produced from detailed sample data in a transparent manner
2022-2023	Incorporate detailed data on Bycatch and PETS AND/OR Recreational data (to be determined by WGRDBES-GOV(SCRDB))

This year a large part of the development was made on renewing the synchronization of the code lists in ICES Vocabulary and the RDBES, and internal data communication with other ICES system. Even though the RDBES have been developed a lot. One of the main developments have been to implement the new data model changes into the RDBES modules adding fields to the landing CL, effort CE and samples CS (updating of: DB, XSD, checks, converter, export).

The following development have also been implemented:

- Updating the order of Trip and Landing Event for some sample hierarchies, to ensure uniquely identified linking data.
- Move the RDBES to a production environment both web server and database server: RDBES.ICES.dk.
- Checks:
    - Implement a check for unique "DEsamplingScheme", "DEyear", "DEstratumName" per hierarchy imported
    - Check for valid file separators
    - Check only single year's data in a data file
    - Check to allow lower hierarchy code to be optional when a subsample followed the sample
    - Check that the WoRMS species code and the FAO species code match each other
- Development changes and bug fixing.
- Refactoring of the schema validation component to solve an issue discovered when an error in xml file occurs for an attribute. The correct line number was not reported.
- Bug fix when trying to insert duplicate in CE, CL, and data deletion issues.

- On the delete page integrate summary of data deleted, with design data that is connected to other SD data (Insure regional Design data is not deleted when one country under the Design is deleting data).
- Smaller issues found during data upload.

Beside the development of the RDBES ICES Secretariat also; chair the RDBES Core Group, participated and contributed to the RCG Tech NA NSEA Baltic, support RCG NA NSEA Baltic data call, support RCG Long Distance Fisheries, data extracts for the RCGs NA NSEA Baltic and LDF, WGRDBESGOV work and presentations, Data License and data call, supported national data submitters of the RDB and RDBES, answer format and data upload questions, fix errors, maintain users and codes.

The new version of RDBES was released on the web the 29 August 2023. The fourth RDBES data call was send the 4th July 2023. The RDBES Documentation of the Data Model.docx' can be found in the following link: https://github.com/ices-tools-dev/RDBES/tree/master/Documents

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 have been 23 online meetings. The last 3 ¾ year there have been about 130 online meetings. 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 Claudia Fernandes, IPMA, Portugal; and Marta Suska, MIR, Poland.

The main tasks of the Core Group are:

- To answer issues regarding RDBES on GitHub,
- To discuss new needed fields and related codes,
- To explore solutions to sampling issues from the ICES community, from the Core Group members or coming from workshops.

Every year the RDBES have been specified further, and this year needed updates was made to the data model, before the data call was send out.

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

- CL: Include the Confidentiality Flag (nationally seen as confidential: Y/N) and Encrypted Vessel ids (list of encrypted vessel ids) fields and make them mandatory.
- CE: Make the Confidentiality Flag and Encrypted Vessel ids fields mandatory.
- CL/CE: Fisheries management unit. Mainly for distinguishing redfish caught shallower or deeper than 500 m, and Norwegian coastal cod from the Northeast Arctic cod, but also used in the assessment WG for sub stocks.
- CL/CE: Exclusive Economic Zone Indicator (EEZI) was re-inserted again after it was not possible to combine EEZ and EEZI.
- CL/CE: FDI fields was inserted: Mesh size range, Supra Region, Geographical indicator, Specific conditions to technical measures and FDI confidentiality code.

The main updates to sample data CS this year was:

- 'Non-response collected at this level' was added to all sample hierarchies data table, except Sample Details, Frequency Measure and Biological Variable.
- Four Auxiliary Variable fields were added: Auxiliary Variable Total, Auxiliary Variable Value, Auxiliary Variable Name and Auxiliary Variable Unit. For support of ratio estimations.
- Fisheries management unit was added to Fishing Operation, Landing Event and Sample. So a link between Landing and Effort is possible. Mainly for distinguishing redfish caught shallower or deeper than 500 m, and Norwegian coastal cod from the Northeast Arctic cod, but also used in the assessment WG for sub stocks.
- Reason for not sampling was added to the Sample table – it was missing.
- Berried was added to the vocab code type BiologicalMeasurementType.

Tasks for the Core Group next year

- Answer issues and questions asked by the countries through the RDBES GitHub.
- Update the documentation.
- Potentially a new field 'Number selected' is needed.
- Deal with issues that appears as the RDBES is getting more used.

Commercial catches data

WGCATCH shared the results of its November 2023 meeting, specifically focusing on RDBES, in the context of discussions at the WGRDBESGOV meeting. Various subjects were presented for consideration at the WGRDBESGOV meeting:

Addition of a new table (Capacity table)

Currently, the RDBES data model does not support the inactive and active vessel information. WGCATCH recognized that the inclusion of this new table is subject to funding, however, a table that gives more information on the fleet characteristics by vessel length is essential not just for the development of FDI export functionality but also for broader applications within ICES. This includes tasks such as evaluating and providing a more accurate description of the fleet in question.

RDBES quality checks

Providing a comprehensive overview of all available data could significantly improve the understanding of the data quality within the RDBES. To accomplish this, WGCATCH suggested to establish a dedicated ICES working group in the data flow. This group would engage with data submitters, investing time to thoroughly discuss the RDBES data, revise the uploaded information, and evaluate its quality and completeness.

RDBES data model fields

WGCATCH identified the need to revisit the RDBES official and scientific fields in the CE and CL tables, as they may not be the optimal method for reporting this information. It is important to reduce the complexity the inclusion of this information adds to the data model, in order to assess the uncertainty of the estimated variables particularly in the context of the small-scale fisheries (SSF).

RDBES data call calendar

The complete integration of the RDBES system and TAF is scheduled to take place in 2027, with the gradual phase-out of InterCatch until that year, after which it will only be maintained for downloading purposes. WGCATCH discussed several key issues that will have an impact on the national workflows and identified the need for a transition phase that will ensure a smooth implementation.

Until now, the deadline for the RDBES data calls was at the end of September to ensure countries had sufficient time to populate the data model as accurately and complete as possible in respect to the data requested. However, to be able to answer the AWG data calls, the data call timeline has to overlap the current Fisheries data call that is released early February for the traditional data submission. Additionally, compared to InterCatch, RDBES is a "two-step" process; first the data have to be uploaded to the RDBES database and then the estimator designated by the national lab has to process the data and produce the estimates under the TAF. To that end, WGCATCH created a questionnaire to explore the implications for the national labs. Some of the answers indicate the increase in workload, potential capacity issues and the need for personnel training that will have to be addressed at a national level during the transition phase and receive support from the relevant bodies responsible for RDBES.

RDBES & historical data

The re-estimation of historical time series is a time consuming and complicated process. In the RDBES context, the complexity increases significantly. WGCATCH briefly discussed this topic and recognized that it is not possible to populate the data model with historical data, especially the CS table. Any future steps towards that end will have to address the potential impact throughout the advice process chain and should be in close collaboration with the respective AWGs.

Bycatch data

The bycatch data subgroup (experts from WGBYC) looked into the RDBES data and carried out further checks of data fields. The general consensus was that all important fields were present. WGBYC made comparisons between WGBYC data and RDBES Irish test data from 2021. Only Ireland and Sweden submitted data. Several unusual entries were found but these might have been due to a misunderstanding of the RDBES data format by the subgroup.

The bycatch data subgroup would like to look further into the data and structure and they also had some questions, which were answered. The bycatch experts need to make sure all the needed information is included. WGBYC will continue to work intersessionally with the core group to develop further the transition to the RDBES. Similar as in 2023, a data call should be launched by WGBYC in 2024.

WGRDBESGOV recommends WGBYC 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 (see recommendations in Section 12).

Biological data

Measurement uncertainty using a scoring system

When developing new SmartDots modules, it became clear that quality scores were necessary not only for age data, but as well for maturity, fecundity, and other biological data. Therefore, WGBIOP developed generic quality scores for all biological data.

After consulting DATRAS and RDBES, it became clear that data users were in favour of keeping the already existing code for age reading "AQ", with new more generic descriptions. After feedback from ICES RMG, it became clear that the concept and description of an existing code cannot be changed because this would result in poor data management and lack of traceability.

Therefore, it was decided that the Age Quality (AQ) codes would remain the same with the existing description, and that for all other biological parameters, the newly developed common descriptions would be used, with new codes (QS).

The codes and descriptions are available in the ICES vocabulary under "MeasurementCertainty".

Code	Description
AQ1	Rings can be counted with certainty
AQ2	Rings can be counted with difficulty and some doubt
AQ3	Rings can not be counted, the calcified structure is considered unreadable - no age assigned
AQ3_QA	Rings can not be counted, the calcified structure is considered unreadable - age assigned for QA purposes only
QS1	Biological parameter was determined with certainty
QS2	Biological parameter was determined with doubts but is sufficiently reliable for stock assessment
QS3	It was not feasible to determine the biological parameter
QS3_QA	It was not feasible to determine the biological parameter – Value assigned for quality assurance purposes only. Not to use for stock assessment

WGBIOP would like feedback from WGRDBESGOV on how institutes are using the quality scores. Are the (age) quality scores uploaded? Is all data uploaded, or only data with a good quality score?

Maturity Scale

The situation with the Sexual Maturity Scale (SMSF) scale was explained. SMSF has been the internationally agreed maturity scale since 2020 for reporting (WKASMSF, 2018). However, few countries started to use it in 2020. Some countries still use their national scales and upload data in their national scale, and others use the national scale but upload data using the international scale. However, in some cases the conversion is wrong. There is also confusion around Stage B and whether this should be in the mature part or not. This caused confusion in many assessment WGs, survey WGs and in national institutes. WGBIOP advises all institutes to the SMSF scale with substages and is in favour of mandatory upload of data to RDBES in the SMSF scale. There was a discussion on the possibility of still uploading data in the national scale as well. It was decided that this option wouldn't be given any more 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.

Next WGBIOP term, there will be a separate Term of Reference related to those maturity issues.

State	Stage	Possible sub-stages
SI. Sexually immature	A. Immature	
SM. Sexually mature	B. Developing	Ba. Developing but functionally immature (first-time developer)
		Bb. Developing and functionally mature
	C. Spawning	Ca. Actively spawning
		Cb. Spawning capable
	D. Regressing/ Regenerating	Da. Regressing
		Db. Regenerating
	E. Omitted spawning	
	F. Abnormal	

Figure 3. Sexual Maturity Scale, SMSF (WKASMSF, 2018).

Others:

- Session on Artificial Intelligence for Age Reading during WGBIOP.
- Effort to move the documents from the WGBIOP quality repository to the ICES library => not public yet, but most documents have been moved (Work In Progress).
- https://www.ices.dk/community/Pages/PGCCDBS-doc-repository.aspx.
- Effort to increase 2-way communication between WGBIOP and relevant (assessment/survey) working groups.
- Genetic data. WGBIOP is still figuring out if and which role they can take up in this. The only question is related to plans to incorporate genetic data (stock ID) into the RDBES? It seems that there are possibilities to incorporate such data in the RDBES, but RDBES needs input on how this data looks like. WGAGFA, specialized in genetics, is probably the group to contact regarding this data.

Marine recreational fisheries data

The incorporation of the Marine Recreational Fisheries (MRF) data to the RDBES is key to improve sampling coordination at regional level and to make data available for stock assessment groups. It is thus a fundamental component of the ICES Roadmap for Marine Recreational Fisheries, which is currently in elaboration and is foreseen to be published in March 2024.

In 2023, a regular data call was launched by ICES in May, with a deadline in June. National estimates of catch and effort of Marine Recreational Fisheries were requested for year 2022 (or the most updated estimates). The geographical scope covered the Northeast Atlantic and adjacent areas including FAO Major Fishing Area 27.

The ICES WG on Recreational Fisheries Surveys (WGRFS), in collaboration with the RCG ISSG on Marine Recreational Fisheries, will review the results of the data call at the beginning of 2024. The principal focus in this revision will be:

- Identify which countries have answered and for which species.
- Identify which countries have not answer and try to investigate the reasons: Has the DC arrived to the people which is working with MRF? Has there been any problem with the format?
- Revise the completeness of the information (some countries may have problems to provide a national estimate).
- Identify any improvements needed in the data model.

The final data model will be also shared with the RCG Mediterranean and Black Sea in order to harmonize the data calls of both regions. A new data call will be launched in April 2024 (with a deadline in May).

WGRFS considers that with these two data calls the data model will be tested and ready to be incorporated in a RDBES for MRF estimates. The development of this database needs to be incorporated in the financial plan for the RDBES in order to ensure that the needed resources are available. In a later stage, WGRFS will need to work on how raw sampling data (coming from on-site and off-site surveys, apps, etc) can be incorporated into the RDBES in a similar way as the commercial fisheries data. The development of marine recreational database will be inserted in the long-term funding project.

Diadromous data

Data collection and stock assessment for diadromous species comprises data for different life history stages in marine, transitional and freshwater environments. While European eel is present as one panmictic stock over all relevant regions, salmon and sea trout occur in hundreds of individual river stocks in NANSEA and Baltic regions. Data collection for diadromous species (eel and salmon) under DCF was introduced in 2007 and further developed in 2012. Sea trout was added later. Assessment models and data requirements for diadromous fish differ according to species and region and are still being actively developed for improvements. Parts of the data mandatorily collected under DCF are currently not used in ICES EGs / international assessments for these species. ICES EGs, namely WGNAS (Working Group on North Atlantic Salmon), WGBAST (The Assessment Working Group on Baltic Salmon and Trout), and WGEEL (Joint EIFAAC/ICES/GFCM Working Group on Eels) are considered the most important international end-users of DCF Data.

Currently, the infrastructure of ICES databases (e.g. RDBES, DATRAS, RDBFIS etc.) is either partly or not at all used by diadromous data end users. In their current state, these databases are not fully fit or adapted to store data on diadromous species, as certain data types, especially for inland waters and survey types are specific for these species compared to other stocks covered by DCF. In order to store all relevant eel, salmon, and sea trout data on RBDES, additional adaptations (such as creating new tables and hierarchies) will be needed. Also, large fractions of commercial eel fisheries are conducted in inland and transitional waters and RDBES does not yet have full capability to capture all necessary information on eel landings.

WGBAST will start to use RDBES to store fisheries data (comm. & recr. Landings, effort, discards, seal damage, catch and release data) soon. Survey data (e-Fishing & biological recruitment data) will stay in locally stored data tables for the time being. Some adaptations have already been initiated, e.g. to include Baltic salmon and sea trout data in the landings table of RDBEs. New categories such as "Freshwater name", "Fishing area category" and other metrics have been added to accommodate the needs for salmon and sea trout in the Baltic Sea region.

WGEEL has developed and currently uses its own separate, functional postgreSQL database that hosts eel-specific assessment data beyond the geographical and mandatory range of DCF-collected data. The WGEEL database is currently hosted on a server at Eaux et Vilaine, France, and is accessible on demand through a shiny app. A copy of the database has been stored on ICES servers but is currently not accessible through the shiny app. WGEEL's request to host the database through the data profiling tool is currently under review by Johana Ribeiro, data officer at ICES. Priority was given to migrate the existing database to ICES servers over the use of RDBES. In 2024, the database will be hosted on ICES servers and access will be provided through a shiny app from the ICES homepage. Once this is completed, the next priority is to host landings data in RDBES, given the technical requirements are met; subsequently it will be evaluated if and how additional data can be stored in RDBES.

WGNAS also uses data beyond the geographical and mandatory range of the EU Data Collection Framework in its assessment. The expert group has developed its own database and shiny web app to support the stock assessment workflow for the life cycle model (LCM), which is currently hosted on a French national server under https://sirs.agrocampus-ouest.fr/discardless_app/WGNAS-ToolBox/.

Discussions with ICES regarding hosting the data used for stock assessment in the ICES database infrastructure have just recently been initiated. Older model data is held by those who run the Run Reconstruction Model and Pre-Fishery Abundance models (RRM-PFA), that have been used to generate catch advice until now (changing in 2024). Catch reporting is a separate activity and that is the bit that is managed now through excel spreadsheets for the data call and r-script for analysis and reporting. In accordance with ICES transparent assessment framework (TAF) policy, WGNAS is using GitHub as the standard tool for codes repositories. One repository has been set up as the main WGNAS repository for contributions to the annual ICES data call for national catch data, and for the codes to collate, analyse and report standard catch metrics. Five separate repositories have been set up under the TAF to deposit model codes for the Life Cycle Model, Run Reconstruction and Pre-Fishery Abundance Models used in support of ICES catch advice for high seas fisheries.

WGTRUTTA has created its own data holding for sea trout biological characteristics and habitat characteristics which is currently used for scientific study of sea trout, not assessments at this time.

All EGs will continue exploring possibilities on utilizing RDBES and ICES Database infrastructure for their specific data in the near future.

RCG Long Distance Fisheries

Since 2015, RCG LDF has been issuing data calls to all non-landlocked Member States. This process was modified based on the 2022 recommendation to conduct it triennially while annually requesting data from active Member States. Subsequently, the 2023 data call was sent to all national correspondents of member states with relevant fisheries in recent years. All Member States responded and provided their data on time. In 2025, all Member States will be contacted to avoid overlooking emerging fisheries.

Based on the RDB data and the work conducted by the intersessional RCG subgroup on fisheries and sampling overviews, the RCG LDF generated a standardized annual overview of fisheries in the respective region. This overview includes graphs and maps to extract the maximum information from the available data. Ongoing efforts are being made to review the necessary output for RCG LDF activities. Currently, the overviews are highly detailed, and some customized solutions may aid in digesting all the information.

RCG LDF emphasizes that for future overviews to be as helpful as possible, Member States must upload their data to the Regional Database. The 2023 RCG LDF identified missing codes for harbours, (groups of) species, and regions. The RCG LDF data manager will contact the ICES Data Centre to request the inclusion of these codes.

As mentioned, in 2024, RCG LDF will issue a data call to all active Member States. This call will not be part of the main RCG data call, as only a few Member States are addressed by RCG LDF. The call will be launched earlier and will request data from the outermost regions to obtain a comprehensive overview of remote fishing activities.

Contrary to the earlier intention of transferring historical data from RDB to RDBES, RCG LDF now aims to request Member States to provide historical data to the RDBES. A full extract from the RDB will be stored for future reference. RCG LDF may request data from the last three years, as these serve as reference years for data collection. Requesting data back in time may require effort from (former) Member States, while the data is currently not used for coordination purposes.

RCG NANSEA & RCG Baltic

The feedback from RCG NANSEA and Baltic was presented at the WGRDBESGOV meeting. Several RDBES-related topics were discussed at the June 2023 RCG technical meeting.

R01: Overviews created by the RCG for ICES

The RCG ISSG RDB catch, effort and sampling overviews currently produce outputs for ICES working groups. The list of groups is becoming longer, and it was agreed at the RCG Technical Meeting that the overviews made for ICES WGBFAS could be seen as a test case. The ISSG focus

should be on products to be used by RCGs for regional coordination. In addition, the RCGs have access to EU MS RDB/RDBES data and not to data from third countries. Therefore, ICES should discuss how this task and the scripts developed can be taken over by ICES. Following the abovementioned argumentation, a recommendation (R01) to WGRDBESGOV was formulated. The recommendation is asking to consider how ICES can take over the outputs created by ISSG RDB Overviews for ICES (WGs, Benchmarks).

The answer to this recommendation can be found in Section 11 of this report.

R04: Commercial landings and effort data from 2019-2023

Another point related to the work of ISSG Overviews is a need for commercial landings and effort data from 2019-2023. A recommendation (R04) addressed to WGRDBESGOV was formulated to request this data in the 2024 RDBES data call. The aim of this request is to prepare multiannual overviews of the data, which is planned by the ISSG. This is also in line with the recommendation addressed do the RCG from the WGQUALITY, which suggests that a variability over time should be included in the data analysis. Moreover, the most recent 3-years data on landings and effort will be necessary to update the Regional Work Plans (Table 2.1) before MSs start to integrate them in their National Work Plans.

The answer to this recommendation can be found in Section 11 of this report.

R08: Data of diadromous species

The storage of data on diadromous species was discussed at the RCG Technical Meeting, ISSG Diadromous Meetings, as well as the Liaison Meeting. Although some developments to store diadromous data in the RDBES have been made, this database is generally not adapted to accommodate it. WGEEL and WGNAS have developed their own databased which stores data collected beyond DCF. The databases are currently hosted on a national institute's server. RCGs' recommendation (R08) addressed to ICES Secretariat, ICES DIG, Commission and non-EU countries asks to explore the feasibility for hosting the existing databases on ICES server.

The answer to this recommendation can be found in Section 11 of this report.

R03: RCG NANSEA and Baltic priorities for RDBES development

RCG NANSEA and Baltic is aware of the list of priorities for RDBES development specified by WGRDBESGOV. In the context of RCGs' work the most important elements are FDI conversion module and inclusion of recreational fisheries data. It is important to assure funding for further developments of RDBES as the current funding system ends in 2024. A recommendation (R03) on that matter was formulated by RCGs and is addressed to WGRDBESGOV and ICES Secretariat.

The answer to this recommendation can be found in Section 11 of this report.

RDB/RDBES download rights for ISSG chairs

There is a pending recommendation from RCG addressed to ICES, which requests download rights from RDB/RDBES to ISSG chairs. The feedback from ICES on this recommendation has been reviewed by RCG chairs. ICES raised several concerns, both procedural and technical, that should be considered with regard to granting access to data. After discussion it was concluded that RDBES system is not mature enough to setup access requested by RCG. Firstly, the system

of roles and permissions needs to be implemented and should reflect the provisions of the data licence. The data licence itself also needs updates in this regard.

The answer to this recommendation can be found in Section 11 of this report.

ISSG on Data Quality

In 2022, the WGRDBESGOV issued a recommendation addressed to the RCG to restart the ISSG on Data Quality, which could have a task to check the quality and completeness of the data uploaded to the RDBES. It was concluded at the Technical Meeting that the RCGs could quality check EU MS data that is used for regional coordination but not data from non-EU countries submitting the data to ICES. Quality check procedures for ICES work and advice should also be set up in ICES. To make this conclusion more visible, the following sentence has been added to the RCG Mandate and remits document, and was agreed by NCs at the RCG Decision Meeting:

'RCGs work with RDBES data from EU countries, and can quality ensure the data in relation to RCG work. Outputs for ICES EGs and ensuring the data quality of RDBES data from non-EU countries should be done by ICES.'

This feedback of the recommendation that WGRDBESGOV sent to the RCGs in 2022 is also gathered in Section 11 of the report.

Conversion from RDBES to FDI

An important issue for RCG NANSEA and Baltic is a conversion from RDBES to FDI database. Some work on comparison of the two data formats has already been done, and the STECF EWG 23 05 FDI Methodology meeting discussed the suggestions made by WGRDBESGOV last year (Annex 8).

However, a full data transmission from one database to another requires further RDBES development, potentially integrated with TAF. Since the FDI group does not work intersessionally, RCGs need to collaborate with ICES on this task. The elements identified so far, that need to be implemented are the raising of biological data by domains of landings and discards, as well as the fleet capacity table.

Use of RDBES data in 2024

According to the RDBES roadmap, the 2024 RCG data call will request to submit data to RDBES instead of RDB, with a deadline on 1st April. RDB will be put into read-only state. The data will be used by relevant ISSGs mainly to prepare overviews, update the Table 2.1 of the RWPs, etc. Additionally, the work may be initiated at the Technical Meeting to check the quality of the RDBES data and test FDI fields. The work on these tasks may be continued in an intersessional group if needed. Potential need for RDBES data from ISSGs other than the Overviews and RWP still needs to be identified.

Data confidentiality

Regarding data confidentiality, RCG points out that the is a need for clear operational rules for publishing outputs produced from RDBES data. Data policy should be aligned across different data calls.

RCG Large Pelagic

A state of play related to the inclusion of the large pelagic data in the RDBES was made by Mathieu Depetris.

Since the last 2022 WGRDBESGOV, discussion rise regarding the future regional database system, especially in the 2022 RCG LP annual meeting. However, in opposition to the past discussions and to consider needs and comments highlighted, RCG LP members reducing the scope of discussions and focus on a "low hanging fruit" process. Instead of trying to select a unique database and go back to pending questions related to confidentiality, financing and topics like that, the group focused on selecting a single database format. Associated with that, the group proposed a recommendation to move forward. The following is available below:

Link to the last state of play release during the Regional Coordination Group on Large Pelagics (RCG LP) annual meeting, regarding the development of the RDBES and the RDBFIS and according to the historical works and discussions on the development of the future LP Regional Database the group request a decision to:

- Accept or not the RDBES format as a common exchange format,
- If the first point is not accepted, national correspondents should share new alternative proposal(s).

Unfortunately, this recommendation was rejected during the 2023 decision meeting by three member states. The main reason was the fear of the veracity of the RDBES format for large pelagic data, especially regarding the ICCAT data format, associated with fear of the consequences in terms of the resources to be supplied. Directly linked to this output, the ISSG LP regional database development met on the 13th of November and tried to make a new proposal to move forward. Concrete specifications of this proposal are not available yet because discussion is still ongoing among the ISSG, but the main idea is to make a test with the RDBES format on large pelagic data, from the beginning (LP data preparation for the RDBES format) to the end (RFMOs data format preparation from the RDBES format).

So far, the provisional roadmap is to produce a final proposal before the 30th of November, send it by the 1st of December to all the NCs involve and ask feedback before the 31st of December.

Link to the presentation, the WGRDBESGOV remind that the RDBES Core Group will be happy to support this test, especially in terms of help regarding the referential and the data conversion process and encourage the RCG LP to highlight any needs in terms of update.

RCG Mediterranean & Black Sea

The current status of the Regional Database and Information System for the Mediterranean and Black Sea (Med&BS RDBFIS) was presented by Martina Zilioli. She is the Task 6 Leader, responsible to disseminate the achievements and activities related to the system within the framework of the current follow-up project coordinated by Stefanos Kavadas, who supervised the results presented. The presentation revolved around the results of the two projects funded by DG MARE/CINEA that supported the development and maintenance of this system (i.e. a web-based integrated fisheries information system for the Mediterranean and the Black Sea).

The speaker recalled that the development of the Med&BS RDBFIS constitutes a long process involving multiple stakeholders, while the initial discussions started ten years before the launch of the first regional grant (MARE 2020/08).

The first 2-year project ended in February 2023 with the fulfilment of the legal requirements under the Data Collection Framework Regulation 1004/2017, i.e. the establishment of a regional database for the Mediterranean and Black Sea basin. The main features and logical components of the released application were shown, underlining that DG MARE considers that the product provides a solid basis for the establishment of a regional database. The system meets all the needs identified so far, while providing options and functionalities that could add value to its core tasks, namely i) to centralize the collection and storage of DCF data from the Med&BS-MS and ii) to provide users with common means/facilities to validate, process and report data in the context of DCF/GFCM data calls.

During the first project, the Med&BS RDBFIS was tested with real data submitted by Med&BS Member States in the past DG MARE data calls in order to assess the functionalities and performances of the first version of the system.

In addition, issues related to data policy and governance of the system by the Steering Committee as part of each data infrastructure were addressed. Three documents were submitted, two of which still need to be revised by some Member States.

The turning point of this final product – which is now fully operational – is to populate the database with historical data uploaded by the Med&BS MS themselves and to use RDBFIS to respond to future DG MARE data calls and other recurring requests and reporting requirements.

Therefore, RDBFIS will be further developed under a second contract which initiated on 1 April 2023. This contract covers the hosting, maintenance, fine-tuning and further development of RDBFIS as well as support for users of the end product.

An overview of the planned activities has been presented:

- the fine-tuning and updating of various R scripts (Bioindex package for MEDITS and MEDITS-like survey data, routines for spatial FDI checks, 'fprmcda' R package) already integrated into the system or to be integrated in the future;
- the integration of MEDIAS survey data through the extension of the database schema and the inclusion of data processing routines;
- populating the system with real data (both detailed and aggregated) through a 2-stage data call launched on 10 November 2023. The data call will give Member States the opportunity to familiarize with the system, thanks also to a dedicated team set up through bilateral contacts and in cooperation with the Member States.

11. Recommendations addressed to WGRDBESGOV

Id		Year	Recommendation	Comments
1	RCG NANSEA & BA	2023	**Recommendation R01:** Recommendation to ICES WGRDBESGOV to consider how ICES can take over the outputs created by ISSG RDB Overviews for ICES (WGs, Benchmarks). **Background:** The RCG ISSG RDB catch, effort and sampling overviews currently produce outputs for ICES working groups. The overviews made for ICES WGBFAS can be seen as a test case. RCGs have access to EU MS data only. The main focus of the ISSG products is the regional coordination. It should be discussed with ICES how overviews and scripts developed can be taken over by ICES.	WGRDBESGOV agrees that ICES shall take over the outputs created by RCG ISSG RDB Overviews for ICES. 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 the overviews 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 WGBFAS report and the benchmark template, as these groups fall under the remit of ICES. Any ICES EWG interested in the referred overviews will need to ask for access to the data, conform what is agreed in the RDBES data license. The current developed code for the overviews can be provided by RCGs (data until 2022). But for data coming from 2023 and onwards, a discussion with ICES need 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. WGRDBESGOV will present the benchmark template (based on WGBFAS report) to the Benchmark Overview Group (BOG). If BOG is interested in the template, conversations will start with ICES to decide how to proceed. See the recommendations in Section 12.
2	RCG NANSEA & BA	2023	**Recommendation R04:** Request commercial landings and effort data from 2019-2023 in the 2024 RDBES data call. **Background:** ISSG RDB Overviews plan to produce multiannual overviews. Five years of data (2019-2023) could constitute a good option. The request for historical data could start to be done already in 2024.	For RWP Table 2.1, data for the years 2021-2023 are needed, and WGRDBESGOV decided to ask for catch and effort data in the period 2021-2023 data, in the 2024 RDBES Data Call in April 2024.

Id		Year	Recommendation	Comments
3	RCG NANSEA & BA	2023	**Recommendation R08:** Explore the feasibility and ensure the resources required for hosting the existing databases which are serving end-user needs of WGEEL in ICES servers. **Background:** Currently, no unified solution to host the mandatory data for diadromous species collected by member states in line with DCF exists. WGNAS and WGEEL have developed own databases.	WGRDBESGOV answer: WGEEL SQL Database is currently under review by ICES. The plan is to host this database in ICES servers by 2024. WGEEL is following up the further developments with the support of the Core Group when needed. WGRDBESGOV will be kept informed of the developments.
4	RCG NANSEA & BA	2023	**Recommendation R03:** It is recommended that the WGRDBESGOV and ICES Secretariat work together to find funding to develop 'RDBES functionalities prioritized'. Among the most important for RCG NANSEA&Baltic are FDI export module and inclusion of recreational data. **Background**: The ICES Secretariat funded development of the RDBES is ending. There is a list of RDBES functionalities that have not been developed yet and are prioritized. It is important to find funding, if the RDBES development pace should stay at the same level.	WGRDBESGOV answer: WGRDESGOV has built financial plan for the short term and the long term, including a list of prioritized actions. The inclusion of recreational fisheries and the development of the FDI export module are in the list. The complete list of prioritized actions be found in Annex 2 of the report.
5	RCG NANSEA & BA	2021	**Recommendation 2022_R01:** ICES give download rights of RDB/RDBES data to ISSG chairs for the ISSG work. **Background:** At the moment RCG has not download rights and ISSG chairs have to do a request to ICES every time they need the data. Direct access will increase the efficiency of ISSG work, which is especially relevant given the short deadlines ISSG has to prepare the overviews. *LDF also wants to give this recommendation (need for coordination).	This is an old request, but unfortunately the system is not ready to solve it yet. The required functionality is very related with the RDBES Data license, which is currently under revision [see Section 7]. It will also need additional developments in the RDBES such as download filters so that each RCG can download their own data. We will keep track of this recommendation until the system is mature enough to provide a solution. In relation to this, WGRDBESGOV has made a recommendation addressed to the RCGs (ref), to revise the roles and permissions developed by WKRAISE&TAF (1 & 2) and define what do RCGs need for their work.

Id		Year	Recommendation	Comments
6	WGNSSK	2023	We continue to recommend flexibility regarding the implementation of RDBES. WGNSSK would benefit from having a separate workshop to work on the migration from InterCatch to TAF and to include all assessments in TAF.	WGRDBESGOV reaffirms the objective that by 2027, the full transition from IC to the RDBES is in place and RDBES data and TAF are used in the assessment for all stocks currently uploaded to IC. By then, national institutes will need to upload data to RDBES and produce national-level estimates of commercial catches; and stock coordinators will need to reproduce the imputations and data processing currently done in IC. To facilitate this process WGRDBESGOV promoted a set of working groups, workshops and training events. For 2024 the following are planned (see Section 6 of the report): **WGRDBES-EST (2024-2027):** to continue developing R tools for design-based estimation and visualization of RDBES data. **WKRDBES-INTRO**: to inform on latest RDBES updates and support data submitters in data submission. **WKRDBES-RaiseStock1**: to support the transition of current national estimation procedures to RDBES. **WGRDBES-StockCoord**: to develop a set of R functions for stock coordination. These functions will replace current InterCatch procedures. **TAF training**: will be organized by WGTAFGOV in consultation with WGRDBES-GOV.to train national estimators in implementing their estimates in TAF.
7	WKRDBES-RAISE&TAF 2	2023	In order to remove the need to store RDBES data in GitHub repositories we recommend that the ICES Secretariat develops a secure web service to fetch RDBES data. This would have the benefits of: being a more efficient way for scripts in TAF to import data (as compared to manually downloading and copying RDBES data files), and remove any potential problems related to storing RDBES data on GitHub.	WGRDESGOV has built financial plan for the short term and the long term, including a list of prioritized actions. The requested functionality (development of a secure web service to fetch RDBES data) is in the list. The complete list of prioritized actions be found in Annex 2 of the report.
8	WKRDBES-RAISE&TAF 2	2023	Upload logs: In order to facilitate testing and gradual adaptation to the RDBES upload logs should be mandatory with data submission and should be made easily available for all data users.	Upload logs will be requested in 2024 RDBES Data Calls (April and September). The plan is to have the new format tested and to come up with a final version in September. The inclusion of the upload logs in the RDBES is included in the list of prioritized actions for the short-term funding.

Id		Year	Recommendation	Comments
9	WGCATCH	2023	WGCATCH agreed that funding is needed to improve/update RDBES data model. Adding a new table needs some time for development. Nevertheless, WGCATCH clarified that the recommendation to introduce a new "capacity" table that describes the number of active and inactive vessels is not only a need to develop FDI export functionality but also will be needed in the context of ICES works e.g. to assess and better describe the fleet involved. Giving an idea of inactive vessels by vessel length ranges (information which is not possibly calculate from RDBES current data model) will be also useful to develop a first data quality check of the RDBES data uploaded (see WGCATCH ToR b risk assessment data quality methodology developed during the previous years) and could be as well a useful input for socioeconomic ICES Working Groups (e.g. WGECON, WGSOCIAL, ...).	WGRDESGOV has built financial plan for the short term and the long term, including a list of prioritized actions. The development of the FDI export module is in the list. The list of prioritized actions be found in Annex 2 of the report.
10	WGCATCH	2023	Following discussions in ICES WGRDBESGOV and RCGs NANSEA & Baltic, WGCATCH re-highlight the need to develop RDBES data quality checks e.g. to check if all the vessel length classes have been uploaded into RDBES, the diversity of gears/fleets uploaded, the importance of MIS_MIS métiers for SSF vessels especially. This complete description of all data available would enhance the insight in the quality of the data in the RDBES. It seems that to perform such a task, in the data flow there will be a need for a specific ICES working group involving data submitters which could take the dedicated time to discuss the RDBES data (what there is available), to go deep into the data uploaded and assess their quality and completeness. This working group could then report data errors/issues to Member States via the DTMT or directly when not applicable.	WGRDBESGOV will set up an intersessional ISSG to develop and maintain a data quality report for data submitters. The subgroup will be in contact with end users to evaluate potential improvements in the data checks, and also with ices to coordinate the inclusion of new potential data upload checks. Further information about this subgroup can be found in Section 9 of the report.
11	WGCATCH	2023	WGCATCH discussed the difficulties arising when using the official/scientific fields available in the RDBES data model. WGCATCH reassert that assessing the data uncertainty specially for SSF vessels constitutes a significant need. Nevertheless, it seems that adding new "scientific" fields vs "official" do not constitute the best way to report this information adding too much complexity in the RDBES data model. Following that, WGCATCH highlight the need to rediscuss this in order to find a better way to inform about uncertainty around fishing activity data uploaded in the RDBES especially for SSF. Indeed, it is known that SSF present some data gaps which oblige to do some assumptions or estimations to answer data calls.	It has been agreed to keep both the official and scientific data fields, but Official should be optional. This decision applies to both landing and effort official fields. The core group is currently working on this. The RDBES documentation and some come codes will be updated accordingly.

12. Recommendations from the WGRDBESGOV to WGs & RCGs

Follow up on 2022 recommendations

From WGRDBESGOV to RCGs

Year	Recommendation	Recipients	Answer
2023	To restart the ISSG Data Quality (on hold since 2022) to develop a procedure to check the quality and completeness of the data uploaded to the RDBES. This could be done in a similar way as the for the ICES VMS/Logbook data call, where a QC group run a script to generate a data quality report by country and send it to the NCs. The RDBES Core Group has started working on this and checking the quality of CL and CE tables, but it needs to be further developed and extended to sampling data. The work done and the ideas for the future are explained in detail in Section 4.3 of WGRDBESGOV report.	RCG NANSEA RCG Baltic RCG LDF	It was concluded at the Technical Meeting that the RCGs could quality check EU MS data that is used for regional coordination but not data from non-EU countries submitting the data to ICES. Quality check procedures for ICES work and advice should also be set up in ICES. To make this conclusion more visible, the following sentence has been added to the RCG Mandate and remits document, and was agreed by NCs at the RCG Decision Meeting: 'RCGs work with RDBES data from EU countries, and can quality ensure the data in relation to RCG work. Outputs for ICES EGs and ensuring the data quality of RDBES data from non-EU countries should be done by ICES.'

WGRDBESGOV comments

We appreciate the answer and consider this issue as closed.

Year	Recommendation	Recipients	Answer
2023	To invite third Countries to the Technical Meeting, when RDBES related issues are addressed. In the past, some of the proposals and initiatives of the RCG regarding the RDBES, were hampered by the fact that only EU Countries participate in the RCG. Then, scripts and reports developed by the RCG could not be applied to the data of non-EU Countries, even if the subject of the analysis was a shared stock. This recommendation aims to overcome this obstacle.	RCG NANSEA RCG Baltic RCG LDF	Third countries are invited to the RCG when needed. But it has to be taken into account that RCGs work with RDBES data from EU countries, and that ICES is the forum where RDBES data from non-EU countries should be used.

WGRDBESGOV comments

We appreciate the answer and consider this issue as closed.

From WGRDBESGOV to WGBYC

Year	Recommendation	Recipients	Answer
2023	To test if the data model for bycatch data fulfils the needs of WGBYC, revise the data already uploaded (and their upload logs), and give feedback to the Core Group and RDBESGOV on the issues encountered.	WGBYC	WGBYC carried out further checks of data fields, and the general consensus was that all important fields were present. WGBYC made comparisons between WGBYC data and RDBES Irish test data from 2021. Only Ireland and Sweden submitted data. Several unusual entries were found. Next steps: WGBYC to carry out a further comparison on more complete RDBES submissions (2022 data). WGBYC would benefit from some intersessional "training" in the RDBES. WGBYC would benefit from some clarity on data acquisition from RDBES (i.e. would we get raw data or would we develop the details of what we need to get an annual extraction).

WGRDBESGOV comments

WGRDBES acknowledges that the format of the CS file is very complex, and that any WG wanting to use it will need support in order to understand it and be able to use it in a correct way.

The core group is already in contact with WGBYC and is providing support. This support will continue during the year.

Recommendations 2023

Year	Recommendation	Recipients
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, integration of the RDBES estimations…).	RCG NANSEA RCG BALTIC RCG LDF

Year	Recommendation	Recipients
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
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 engage in an investigation of possible solutions. 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 singleRDBES data call, including bycatch data. These three Databases contains a time series of data that is still relevant for 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.	ICES Data Centre WGBYC RCG NANSEA RCG BALTIC RCG LDF
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
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 timings and content of the RCG and ICES data calls are closely coordinated 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.	ICES RCG NANSEA RCG BALTIC RCG LDF

Year	Recommendation	Recipients
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 require 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
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. 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.	ICES (AWG and BOG)
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, and the final stock-level coordinated commercial inputs to assessment models.	WGTAFGOV

13. New chair(s) and next meeting date and venue

The next meeting will be held from **Monday 25 November (10:00) – Friday 29 November 2024 (13:00)** at ICES HQ, Copenhagen, Denmark.

The chairs for the period 2024-2026 still need to be decided.

Annex 1: List of participants

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Annex 2: List of needed RDBES functionalities to be developed

RDBES needed functionalities for prioritization

The following RDBES functionalities are prioritized by the WGRDBESGOV. The functionalities selected to be developed in the short term (2024) by means of a special request are identified. The list of functionalities for the long term will be worked intersessionally. This document is a living document.

Functionality needed	Description of functionality	Schedule
The Species List table need to be split in two tables	To better work with the Species List data it is needed that the data is split in two tables. All procedure used to insert for data into the Species List need to updated 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.	Special request (short term)
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 MS 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.	Special request (short term)
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.	Special request (short term)
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.	Special request (short term)
RCG requested Upload logs implemented in the RDBES	To evaluate the data quality the RCGs need the Upload logs uploaded into the RDBES together with the requested data. To have a track of the data quality with easy access and the quality of data also 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.	Special request (short term)
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.	Special request (short term)

Functionality needed	Description of functionality	Schedule
Possibility to give each upload a note/message	Possibility to give each upload a note/message for the data submitter, to be able to see it in the file upload list, which also should be sorted by upload date.	
RCGs need to be able to contact MS data submitter in case of data issues.	Add data submitter contact details to data export, so data users can contact data submitters in case of issues. (This should probably be done by a look up in the RDBES instead. Data submitters are not happy about having their name stamped into the data, from experience with InterCatch, where you also only can look up the data submitter in the data viewing.) Alternatively in the Upload log.	
Inventory of aggregated data which are publicly available	An inventory on upper level of the uploaded data should be developed. The inventory should be public available.	
Log over deletion of data	The possibility to see a list of who deleted what national data and when.	
Data download overview	Who downloaded the data, with a selection criteria. A module with table storage of all data downloads.	
Overview of data access	Development of a user interface with user role controlled access, overview and search functionality. Another page with Overview of who can upload, delete and download the national data.	
Field with sampling scheme covered RCGs	Add a field in the Design table indicating which RCG the sampling scheme covers	
Possibility to view and export RCG regional data	It is needed to be able to download data according to RCG region Add regions tables to RDBES database to be able to distinguish data from the different RCG regions	
Align with RDBFIS	Align together with RDBFIS, this is a long term development task, where it is looked into where there are possibilities the two systems are aligned.	
Data download API for TAF	Develop an API for downloading RDBES data, focused on downloading data for TAF, this is a WGRDBESRaise&TAF2 recommendation.	
Improvement of data viewing and adding summarising for data quality control	Improve viewing and add summarising of the uploaded data for the national data submitter. Thus the data submitter can get an overview of the uploaded data and ensure all data have been uploaded.	
FDI export module	Make it possible to download FDI data from the RDBES. The FDI data consist of different data types so a number for different file formats have to be developed.	

Functionality needed	Description of functionality	Schedule
Finishing potential development from the very ambitious year 2023	Many system technical developments take up a lot of the time in 2023; Updating the security module, use of roles together with claims, conversions of admin pages, moving to new servers, automatic testing. Beside that there is the new requested developments with new added information to the data model. On top of that there is; implementing stock definitions and needed areas and a simple viewing of data. The plan for 2023 is very ambitious and therefore there is a risk that some things have not been developed, which then should be done in 2024.	
Data quality improvements: Checks e.g. check preventing upload of duplicated landings etc.	To increase the data quality of the data in the RDBES many checks should be developed. One of the most important checks is the check for duplicated landings upload. Many other checks should be developed.	
Develop requests from year 2024 and 2025	The RDBES is a new system and the more the RDBES is use, the more request of needed functionalities will there come. Therefore it makes sense to have room for new needed developments.	
Optimisation of data upload to prevent long waiting time	The upload of landing and effort data does not take as long as the upload of sample data, and since the data can be uploaded independently it makes sense to create a new queue and split the data, thus the data submitter will have faster upload times for some data types.	

Annex 3: Resolutions

Working Group on Estimation with the RDBES data model (WGRDBES-EST

2023/XX/DSTSG/XXX A **Working Group on Estimation with the RDBES data model (WGRDBES-EST)**, chaired by Ana Claúdia Fernandes, Portugal and Richard Meitern, Estonia will work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2024	14-18 October	Lisbon	Interim report by 18 December to DSTSG	First meeting after chairs change (previously Kirsten Birch Håkannson and Nuno Prista)
Year 2025	tbd	tbd	Interim report 18 December to DSTSG	
Year 2026	tbd	tbd	Final report by 18 December to DSTSG	

ToR descriptors

ToR	Description	Background	Science Plan Codes	Duration	Expected Deliverables
a	Continue to develop and document R scripts and functions for statistical estimation using the RDBES data format	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 also replace the current ICES Inter-Catch system and function both as a database and an estimation system for ICES Fisheries Advice. Estimation within the RDBES will be done by means of R-scripts and functions that secure the transparency and reproducibility of assessment inputs. The estimation code will	3.1, 3.2, 3.3	Regular activity every year with intersessional work	Documented R-scripts and functions to be added to RDBEScore package

		ultimately integrate TAF and make national and regional estimates more transparent. WGRDBES-EST has developed a first set of functions that carry out the simpler forms of design-based estimation. WGRDBES-EST will continue and finalize that work, extending it to more complex statistical estimation methods namely ratio estimation.			
B	Develop and document R scripts and functions for visualization of data in RDBES data format	In parallel with estimation developments (ToR a) there is a need to develop R functions that summarize and visualize data in the RDBES format. These functions will be used to build summaries and overviews of data available for use in ICES AWGs, RCGs, EGs related to commercial fisheries data (e.g. WGCATCH and WGBYC) and national users.	3.1, 3.2, 3.3	Regular activity every year with intersessional work	Documented R-scripts and functions to be added to RDBESvisualise package
C	Coordinate the peer-review and inclusion of ToR a) and ToR b) outputs in the RDBES packages	Worldwide availability and systematic code and methodological peer review of RDBES functions may be achieved by the incorporation of those functions in a package published on a public github repository (https://github.com/ices-tools-dev/).	3.1, 3.2, 3.3	Regular activity every year with intersessional work	RDBEScore and RDBESvisualise packages published in ICES github alongside associated documentation and vignettes
d	Identify problems with RDBES data model relating to statistical estimation	The RDBES data model keeps being improved and updated as feedback is received from RCGs, EGs (e.g. WGCATCH, WGBYC), national data submitters and data users. The implications of those improvements and updates for estimation within the RDBES need continuous evaluation. In addition	3.1, 3.2, 3.3	Regular activity every year	List of recommendations to ICES data center, Core Group of RDBES development and WGRDBESGOV on aspects needing development in the RDBES data model

		as R code is developed and tested additional improvements to the RDBES data model may be found needed so that specific estimation methods can be implemented or specific results produced. WGRDBES-EST will contribute to the identification and evaluation of these new features and data-model related aspects.		
E	Establish a road forward to the development of present and future code related to statistical estimation that leads to improved inputs to stock assessment	As the work of WGRDBES-EST progresses there is a need to update and inform WGRDBESGOV on the best path forward to keep developing the code required for commercial catch estimation carried out within ICES.	3.1, 3.2, 3.3	Regular activity every year	List of recommendations to WGRDBESGOV on aspects needing consideration in efforts to improve estimation of commercial catches
F	Collaborate with WGRDBESGOV and WGTAFGOV to secure the integration of outputs from WGRDBES-EST in TAF	Transparency on the use of outputs from WGRDBES-EST can be achieved by integrating the estimation scripts and/or its outputs in TAF.	3.1, 3.2, 3.3	Regular activity every year	Outputs from WGRDBES-EST are fit and ready for integration within TAF

Summary of the Work Plan

Year 1	ToR 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 that code and functions. ToR 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. ToR c) Continue the work in RDBEScore and RDBESvisualise packages, incorporating existing developments, prepare standalone 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. 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. ToR e) Evaluate progress obtained in estimation of commercial catches and suggest a way forward to WGRDBESGOV. 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.

Year 2	ToR a) Discuss the feedback from WGRDBESGOV and RDBES core group on last years progress alongside developments achieved in interssessional work, related WKs and WGs and individual contributions related to commercial catch estimation. Identify the R-code from the RDBEScore package that needs development, refinement and/or testing. Develop that code and functions. ToR 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. Test and get feedback from possible end users of the package, to improve the functions and scripts. ToR c) Continue the work in RDBEScore and RDBESvisualise packages, incorporating existing and new developments~~,~~ prepare a standalone ices Package; test and implement compatibility of the RDBESCORE package with CRAN requirements;; test work-flow and advise on roadmap for longer term RDBES packages maintainence to WGRDBESGOV. ToR d) Evaluate intersessional updates of the RDBES data model from an estimation perspective. Document any problems with RDBES data model relating to statistical estimation and suggest solutions. ToR e) Evaluate progress obtained in estimation of commercial catches and suggest a way forward to WGRDBESGOV. ToR f) In collaboration with WGRDBESGOV (and relevant groups thereunder) and WGTAFGOV conclude on requirements for a integration of WGRDBES-EST outputs into TAF and adapt output to the requirements.
Year 3	ToR a) Discuss the feedback from WGRDBESGOV and RDBES core group on last years' progress alongside developments achieved in interssessional work, related WKs and WGs and individual contributions related to commercial catch estimation. Identify the R-code from the RDBEScore package that needs development, refinement and/or testing. Develop that code and functions. ToR 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. Continue to test, incorporate and/or get feedback from possible end users of the package, to improve the functions and scripts. ToR c) Continue the work of previous year in RDBEScore and RDBESvisualise packages, incorporating new developments; Publish the RDBES packages on CRAN. ToR d) Evaluate intersessional updates of the RDBES data model from an estimation perspective.. Document any problems with RDBES data model relating to statistical estimation and suggest solutions. ToR e) Evaluate progress obtained in estimation of commercial catches and suggest a way forward to WGRDBESGOV. ToR f) Continue the work of previous year and in collaboration with WGRDBESGOV (and relevant groups thereunder) and WGTAFGOV keep updated on potential changes in the requirements for integration.

Supporting information

Priority	This working group is considered of very high priority. The activities of this WG will promote the development of a Regional Database and Estimation System (RDBES) by developing the algorithms and code required for the estimation of commercial catches within the RDBES. The RDBES will be integrated in TAF and work as a database for both ICES and the Baltic Sea, North Sea & Eastern Arctic, and North Atlantic Regional Coordination Groups (RCGs), producing the high-quality, transparent, estimates required by ICES Fisheries Advice.
Resource requirements	The members of the core group of RDBES development are requested to participate and coordinate algorithm and code development ahead of the meetings. Participation of the ICES data centre is needed with regards to expertise in package development and maintainace.
Participants	The Group is normally attended by about 20 members. Participants should be proficient in writing own scripts and functions in R language and/or have good knowledge of survey sampling and estimation.

Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	There are no direct linkages with ACOM, but most of the Stock Assessment Working Groups will be impacted by the development of the RDBES.
Linkages to other committees o groups	There is a direct link to WGRDBESGOV, the RDBES core group and close links to activities of WGTAFGOV, WGQUALITY, WGCATCH and WGBYC. There is an indirect link with WGRFS and WGBIOP.
Linkages to other organizations	The RDBES estimates are connected to regional data collection defined by the RCGs under the European Commission. The RDBES will also support the ICES countries in providing data for both national and international assessments and optimizing their sampling programmes. In the case of EU MS, the RDBES is expected to facilitate and improve the quality of provision of commercial catch data requested under different data calls.

Third workshop on introducing the Regional Database and Estimation System (RDBES) data format (WKINTRO3)

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.

WKRDB-INTRO will present a written report to ACOM by 31st Oct. 2024.

Supporting information

Priority	The activities of this workshop will give the necessary introduction to new users of the Regional Database and Estimation System, RDBES, and promote further adaptation of the system. This workshop will help countries to correctly convert their national data formats to the RDBES format, and ensure necessary input for establishing future ICES training courses. The RDBES when it is implemented works as a database for the Baltic Sea, North Sea & Eastern Arctic, North Atlantic and Long Distance Fisheries Regional Coordination Groups (RCGs). The RDBES will also function as a database and estimation system for ICES Fisheries Advice. The development will concentrate on harmonisation, quality assuring, documentation, approved estimation methods and transparency. Consequently, these activities are considered to have a very high priority. ICES have issued data calls for the RDBES in 2020, 2021 and 2022. ICES will issue a data call in 2023 for data from 2022 samples for all stocks, and 20221 landings and effort data for all stocks, in the updated RDBES format. The ideal conclusion is that at the end of this workshop each person attending has developed working scripts to extract the data that will be requested by the RDBES data call
Scientific justification	The RDBES will be extensively used by the RCGs and ICES both to store detailed fisheries sample data and use it for estimation - therefore it is essential that national data submitters are familiar with the RDBES format and confident in correctly converting their national data to this format. The WKRDB-POP (2019), the WKRDB-POP2 (2020), and the WKRDB-POP3 (2021) started this process, and the WKRDBES-INTRO (2022) took over. TheWKRDBES-INTRO have to continue because not all relevant institutions have participated in these previous workshops, and it is necessary to both maintain introductions to new institutions, and develop a long term training program that can ensure that necessary trainging can be provided for new personell in the future. **ToR a) – Describe and explain the RDBES data model to national data submitters and introduce participants to the necessary tools for providing data.** The different components of the RDBES data format will be explained, and participants will be introduced to resources that provide detailed documentation of the data model, an online data-submission portal, and the RDBES issue reporting solutions. **ToR b) – Arrange support sessions where participants can request expert guidance on adapting national data to the RDBES data model.** This is the most important part of the workshop and will be allocated two full days - it will entail the RDBES Core Group providing practical online assistance to the attendees, through bookable support-slots. The workshop attendees must be familiar with their own national sampling programme designs, and must have made preparations necessary to provide real data sets of their national samples to the workshop. The Core Group will then help them make decisions of which RDBES tables are relevant to fill in, and provide clarifications to the documentation when necessary. The more work that attendees have done in trying to populate the RDBES format with their own data before the workshop the more value they will gain from this work. When new questions are identified and resolved they can be added to the RDBES “Frequently Asked Questions” so that other people can benefit

	from the answers, and when unclarities in the documentation is resolved through support slots, the Core Group can follow up with revisions to the documents.
Resource requirements	Members of the "RDBES Core Group" will be requested to participate in the support sessions and as hands-on instructors/demonstrators. The ICES Data Centre will provide technical support for RDBES data uploading, and the presentations introducing participants to the RDBES.
Participants	~60 people
Secretariat facilities	SharePoint, Online meeting room support
Financial	No financial implications.
Linkages to advisory committees	There are no direct linkages with the advisory committees, but most of the stock assessment Working Groups will in the future use the RDBES as one of their primary data sources.
Linkages to other committees or groups	There is a link to WGRDBESGOV, WGRDBES-EST, WGCATCH and WGQUALITY.
Linkages to other organizations	The RDBES will support the work done by the RCGs under the European Commission, EC. The aim is also allow the RDBES to support the countries in providing data for the data calls under the EC.

Workshops on Raising Stock Data with the RDBES data model (WKRDBES-RaiseStock1-3)

The **Workshop on Raising Stock Data with the RDBES data model** (WKRDBES_RaiseStock), chaired by David Currie, Ireland and Siobhán Moran, Ireland, will be established and meet online 10-11 June and 10-11 July 2024 to:

- Re-produce national InterCatch estimates of commercial catches of Northeast Atlantic mackerel (mac.27.nea) using R scripts that start from national Regional Database & Estimation System (RDBES) extracts; (Science Plan codes: 4.1; 5.1; 6.1)
- Re-produce all other types of national files related to commercial catch data usually supplied to stock assessments of Northeast Atlantic mackerel (mac.27.nea) using R scripts (Science Plan codes: 4.1; 5.1; 6.1).
- 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 Northeast Atlantic mackerel (mac.27.nea) from national Regional Database & Estimation System (RDBES) extracts; (Science Plan codes: 4.1; 5.1; 6.1).
- 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 Regional Database & Estimation System (RDBES) implementation plan (Science Plan codes: 4.1; 5.1; 6.1).

WKRDBES_RaiseStock will report by 31 August 2024 for the attention of the DSTSG.

Supporting information

Priority	High. The WGRDBESGOV 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 necessary in order for the RDBES development to proceed according to the roadmap.

Scientific justification	The RDBES format will be used by the national institutes'' data providers, stock coordinators, EU Regional Coordination Groups (RCGs) and other expert groups suc as WGCATCH. Therefore it is essential that current estimation practices can be reproduced with the RDBES. More specifically, for each Term of Reference (ToR): Term of Reference a) and b) National estimates are an important intermediate calculation for current estimatior practices, and an important result in itself for other uses of the RDBES, such as responding to EU data-calls. The initial work done in previous workshops demonstrated that some national estimations could be produced from RDBES however it i necessary to prove that we can successfully reproduce current outputs for a single stock. The workshop will be held before the WGWIDE data call so that participants can potentially use any code developed for their submission. It is important for data submitters to get used to working with the RDBES data within the data cal calendar. Term of Reference c) The different stages of data manipulation should be clearly delineated so that is easy for others to understand what was done. A common template will make it eas ier for countries to share code. The template will follow the same steps as the ICES Transparent Assessment Framework (TAF) so that code can be easily migrated to that system in the future. Term of Reference d) If it is not clear how a particular national data submission can be reproduced using the RDBES data then this will be recorded for future discussion and resolution.
Resource requirements	The ICES Data Centre will provide technical support for uploading and downloading RDBES data.
Participants	Stock coordinator and national data submitters for mac.27.nea
Secretariat facilities	SharePoint site and GitHub repository.
Financial	No financial implications.
Linkages to advisory committees	There is a direct linkage with the advisory committee, as most of the stock assessment Working Groups will be impacted by the development of the RDBES.
Linkages to other committees or groups	WGWIDE. There are also connections to WGRDBESGOV, WGCATCH, and WGRDB-EST.
Linkages to other organizations	The RDBES will support the work done by the RCGs under the European Commission, EC. The aim is to enable the RDBES to support the countries in providing data for the data calls under the EC.

Working Group on Stock Coordination (WGRDBES-StockCoord)

2023/XX/DSTSG/XXX The Working Group on Stock Coordination with the RDBES data model (WGRDBES-StockCoord), chaired by XXX will work on ToRs and generate deliverables as listed in the table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2024	14-18 October	Lisbon	Interim report by 18 December to DSTSG	
Year 2025	tbd	tbd	Interim report 18 December to DSTSG	
Year 2026	tbd	tbd	Final report by 18 December to DSTSG	

ToR descriptors

ToR	Description	Background	Science Plan Codes	Duration	Expected Deliverables
a	Finalize the specification of the new National and Regional Catch Estimates Format (RCEF). Compile specifications of the commercial catch inputs to the main stock assessment models used in ICES AWGs	The Regional Database & Estimation System (RDBES) provides flexibility in national and regional estimation that goes beyond that currently offered by ICES InterCatch. WKRDBES-Raise&TAF (1-2) proposed a first set of specifications for a new national/regional level exchange format (RCEF) that while being compatible with InterCatch also allows the exploration of the new possibilities of estimation that RDBES data offers. A subgroup of WGRDBESGOV further elaborated on those specifications and the final proposal needs to be discussed and evaluated from a practical implementation point of view and, if needed, adjusted.	3.1, 3.2, 3.3	1 year (2024)	Finalized data model and documentation for exchange format. Finalized data model and documentation of main inputs to stock assessment.

b	Develop and document R scripts and functions for stock coordination using the National and Regional Catch Estimates Format (RCEF)	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 and estimates national and regional commercial fisheries data. The RDBES will replace the ICES InterCatch system and function both as a database and an estimation system for ICES Fisheries Advice. Stock coordination within the RDBES will be done by means of R-scripts and functions that build from national/regional estimates in the new exchange format (ToR a) and generate a variety of input files input into stock assessment models (ToRb), making increasing use of the wider statistical potential the RDBES now offers. To secure transparency and reproducibility stock coordination this process will also be included in TAF. WGRDBES-StockCoord will develop a set of R functions to carry out stock coordination procedures similar to InterCatch but that incorporate of novel aspects made possible by the RCEF format. The functions will have as a starting point the new exchange format and as end-point the file formats accepted by the main stock assessment models used in ICES AWGs. Improvements to InterCatch procedures and alternative procedures will also be considered.	3.1, 3.2, 3.3	Regular activity every year with intersessional work	Documented R-functions and example vignettes to be included to RDBESstockCoord package
c	Coordinate the peer-review and inclusion of ToR a) outputs in the RDBES packages	Worldwide availability and code and methodological peer review of RDBES functions is achieved by the incorporating them in an R package published on a public github repository (https://github.com/ices-tools-dev/).	3.1, 3.2, 3.3	Regular activity every year with intersessional work	RDBESstockCoord published in ICES github alongside associated documentation and vignettes
d	Establish a road forward to the development of code and procedures used in ICES stock coordination	As the work of WGRDBES-StockCoord progresses there is a need to inform WGRDBESGOV on the degree of readiness of RDBESstockCoord and the best path forward to further develop and implement it making use of the potential offered by RDBES and the new RCEF format.	3.1, 3.2, 3.3	Regular activity every year	List of recommendations to WGRDBESGOV on aspects needing consideration in terms of stocck coordination
e	Collaborate with WGRDBESGOV and WGTAFGOV to secure the integration of outputs from WGRDBES-STOCKCOORD in TAF	Transparency on the use of outputs from WGRDBES - STOCKCOORD can be achieved by integrating the estimation scripts and/or its outputs in TAF.	3.1, 3.2, 3.3	Regular activity every year	Evaluation on whether outputs and processes from WGRDBES-STOCKCOORD are fit and ready for integration within TAF.

Summary of the Work Plan

Year 1	ToR a) Discuss the new national/regional exchange format suggested by WGRDBESGOV. Suggest changes to data model specifications where needed. ToR b) Identify the R-code needed in the RDBESstockCoord package. Start developing that code. ToR c) Integrate a first set of R-functions in RDBESstockCoord. Discuss where the package should be hosted. Ponder the possibility of setting up the R-package in CRAN requirements ToR d) Evaluate progress achieved and suggest a way forward to WGRDBESGOV with regards to stock coordination. ToR e) Collaborate with WGRDBESGOV (and relevant groups thereunder) and WGTAFGOV to identify requirements for an integration of WGRDBES-EST outputs into TAF.
Year 2	tbd
Year 3	tbd

Supporting information

Priority	This working group is considered of very high priority. The activities of this WG will promote the development of a Regional Database and Estimation System (RDBES) by developing the algorithms and code required for the stock coordination of commercial catches used by ICES AWGs. The RDBES will be integrated in TAF allowing ready access to national/regional estimates, stock coordination scripts, and final inputs supplied to assessment models resulting in the production of higher-quality, transparent, estimates required by ICES Fisheries Advice.
Resource requirements	Participation of the ICES data centre is needed with regards to details of current InterCatch stock coordination routines and data formats currently in use as inputs to ICES stock assessment models.
Participants	The Group is expected to be attended by about 20 members. Participants should be proficient in writing own scripts and functions in R language and/or be experienced in building R packages and/or have good knowledge of current stock coordination done for ICES stocks
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	There are no direct linkages with ACOM, but most of the Stock Assessment Working Groups will be impacted by the development of the RDBES.
Linkages to other committees o groups	There is a direct link to WGRDBESGOV, the RDBES core group and close links to activities of WGTAFGOV, WGQUALITY, WGCATCH. There is an indirect link with WGRFS and WGBIOP.
Linkages to other organizations	The RDBES estimates are connected to regional data collection defined by the RCGs under the European Commission. The RDBES will also support the ICES countries in providing data for both national and international assessments and optimizing their sampling programmes. In the case of EU MS, the RDBES is expected to facilitate and improve the quality of provision of commercial catch data requested under different data calls.

Annex 4: Revised data License

Commercial Fisheries Data

Data use license for the Regional Database (RDB) and Regional Database and Estimation System (RDBES)

February 2024

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Definitions.

1. **Licensor** means the individual(s) or entity(ies) granting rights under this License.
2. **You** means the individual or entity exercising the Licensed Rights under this License.
3. **Licensed Rights** means the rights granted to You subject to the terms and conditions of this License
4. **Restricted Data** means data within the Database that is classified as not publicly accessible as determined by the data provider
5. **Public Data** means data within the Database that is classified as publicly accessible as determined by the data provider
6. **Data provider** means the organization and/or individual that control/organizes the ownership access for the data
7. **Data owner** means the organization and/or individual that retains the ownership rights for the data
8. **Databases** means the data repository or data portal where the data reside, in this context:
    a. Regional Database (RDB)
    b. Regional Database & Estimation System (RDBES)
9. **ICES Advice Requester** means an organisation or country that has signed an agreement with ICES to provide management advice services;
10. Within the body of the license the present Regional Database, and the new Regional Database and Estimation System are herein referred to as the **RDBES**. However within Annex 1 and 2 the two systems are considered separately.
11. The Regulation (EU) 2017/1004[4] is hereafter referred to as the **Data Collection Framework** (**DCF**).
    a. For the European Union Member States, the basis for data policy rules are the provisions of the DCF.
12. The database herein is a **regional database** as referred to in Article 18(1) of the DCF.
13. The DCF defines:
    a. **Primary data** as data that is associated with individual vessels, natural or legal persons or individual samples
    b. **Detailed data** as data based on primary data in a form that does not allow natural persons or legal entities to be identified directly or indirectly
    c. **Aggregated data** as the output resulting from summarising the primary or detailed data for specific analytical purposes.
14. The RDBES does not store primary data. Within the RDBES, landing data (CL), effort data (CE) and sample data (CS) are considered detailed data. All data submitted to the RDBES is considered as restricted data.

[4] Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast)

Scope

This license applies to anyone granted licensed rights to use restricted data uploaded into the databases.

License grant

1. Data use for Fisheries and Ecosystem Management:
    a. Countries grant permission for data to be used by ICES in the provision of scientific advice to the European Commission and other ICES clients of scientific advice. Data will be requested by a data call which will specify the data required, what it will be used for, and who will use it. Users of detailed data must sign the "Conditions for RDBES data use" agreement
    b. EU Member States (MS) grant permission for data to be used by the RCG's for the purposes of Article 9 of the DCF. Users of data must sign the "Conditions for RDBES data use" agreement.
    c. Any other entity requiring data for the purposes of Fisheries and Ecosystem Management advice can request access in writing to each country. The EU MS will be obliged to respond one month from the date of the request. If approval is given users of data must sign the "Conditions for RDBES data use" agreement.
2. Other uses
    a. An entity requiring data from the RDBES for purposes other than Fisheries and Ecosystem Management can request access in writing to each Country. The EU MS will be obliged to respond two months from the date of the request. If approval is given users of data must sign the "Conditions for detailed RDBES data use" agreement.
3. For requests related to scientific publication, for EU MS Article 17(7) of the DCF applies.
4. Persons from the European Commission have full access to, or can receive, EU MS data from the RDBES. This includes access to UK data from 2020 and earlier.

License Conditions.

a) Correct and appropriate data interpretation is solely your responsibility.
b) You must not expressly or otherwise imply ICES substantiation of their work, results, conclusions and/or recommendations.
c) You are obliged to inform ICES of any suspected problems in the data.
d) Data provided to you shall not be kept on your computer/database upon completion of the task related to the term of reference.
e) You shall treat the data as confidential and the transmission or sharing of these data are not allowed
f) Data can be shown in reports as described in Annexes 1 and 2
g) Data shall be used only for the purposes of facilitating scientific advice, or other work specifically approved by the countries, and will be strictly related to the agreed terms of reference of the activity executed by the data user.

h) Downloaded data shall be secured by appropriate safeguards, such as encryption and password protection of the computer on which it is held.

Attribution

These data should be cited as per guidance provided in the ICES Data Policy.

Disclaimer of Warranties and Limitation of Liability.

1. Unless otherwise separately undertaken by the Licensor, to the extent possible, the Licensor offers the Licensed Material as-is and as-available, and makes no representations or warranties of any kind concerning the Licensed Material, whether express, implied, statutory, or other. This includes, without limitation, warranties of title, merchantability, fitness for a particular purpose, non-infringement, absence of latent or other defects, accuracy, or the presence or absence of errors, whether or not known or discoverable. Where disclaimers of warranties are not allowed in full or in part, this disclaimer may not apply to You.
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3. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

Other Terms and Conditions.

1. For non-EU countries, the basis for data license rules is in accordance with the limitations on data use specified by each country.
2. According to the DCF, provision on access rights and time frame are described under Articles 17(1), 17(3) and 17(4).
3. The RDBES follows the principles of personal data protection, as referred to in Article 2 of the DCF and is also compatible with Article 113 of the Control Regulation (EU Regulation 2023/2842).
4. Data ownership - the national data in RDBES is owned by the individual countries.
5. An inventory of data housed in the RDBES is available without restriction on the RDBES website.
6. Data providers are responsible for the quality and completeness of data delivered to ICES.

ANNEX 1 Use and Publication of data extracted from the RDB

Detailed data

According to the definitions in this Data License, which is taken from the EU Regulation 2017/1004, landing (CL), effort data (CE) and sample data (CS) are considered detailed data.

Rules for use of data

Users of detailed data must sign the "Conditions for RDBES data use" agreement.

Showing data in public reports

General Rule

Sample data (CS), landing data (CL) and effort data (CE) can always be shown when data are disaggregated at the following level:

Year	Quarter	Species	Metier[5]	Area[6]

Landings (CL) and Efforts (CE) specific rules

The data that will be publicly available through the RCGs or ICES Expert Groups reports must be aggregated to at least the following highest resolution level.

In the overall data there in general must be more than two different units in each variable to be able to aggregate over the variables (e.g. to aggregate by country the data must include at least 2 different countries). When showing landings and/or effort data in a public report the highest resolution is determined by aggregating over at least 4 out of the 9 following variables:

Vessel flag country	Year	Month	Species	Metier	Vessel length category	Statistical rectangle	Landing Country	Harbour

The following are some examples of this rule

Examples:

Landings data can be plotted by species, statistical rectangles and year when data are aggregated over country, month, metier level 4-6 and vessel length category.

Effort data can be plotted by metier level 4-6, statistical rectangles and year when data are aggregated over country, month and vessel length category and species.

If it is needed to publish data at higher resolution the relevant National Correspondents or ACOM members have to be asked for approval.

[5] A group of fishing activities targeting a similar species or assemblage of species, using similar gear, during the same period of the year and/or within the same area, and which are characterised by a similar exploitation pattern. Metiers can be defined at a number of different levels.

[6] Subdivision or unit (FAO definition,http://www.fao.org/fishery/area/Area27/en)

Sample (CS) specific rules

The data that will be public available through the RCGs or ICES Expert Groups reports should be aggregated to the same level as the landings data.

The CS data holds information (auxiliary variables and obtained data) from sampled trips. **It is not allowed to publish CS data in a report in such a way that the individual catches from a given trip are shown**.

Data need to be aggregated before shown in tables or figures. In this context data covers both the data in the CS and data derived from the CS data e.g. estimated discard.

In the overall data there in general must be at least three different samples in each variable to be able to aggregate over the variables. When showing sample data in a public report the highest resolution is determined by aggregating over at least 3 out of the 9 following variables:

Vessel flag country	Year	Month	Species	Metier	Vessel length category	Vessel size category	Vessel power category	Statistical rectangle

The following are some examples of this rule

Sampling example:

Sampling data can be plotted by species, statistical rectangles and year only when data are aggregated over country, month, metier level 4-6, vessel length category, vessel size category, vessel power category.

Map Plotting

Individual hauls (HH) holds information on the geographical positions from sampled fishing operations. It is sometimes valuable to show these positions (e.g. for QA purposes). If doing so only meta data or auxiliary variables can be used in the plots - never the result of the actual sampling. When plotting maps a *maximum* of three of the following variables can be used.

Vessel flag country	Year	Month	Species	Metier	Vessel length category	Vessel size category	Vessel power category	Position

This rule does not apply if the amount of data in the map is so sparse that individual vessels or trips might be identified. It is the responsibility of the data user to ensure that maps do not plot data that comes from a 5 of vessels or trips.

Example: It is allowed to plot the positions of fishing operations by year, species and countries as long as metiers, vessel size category, vessel power category, vessel length category and month are left out. If the data user wanted to include metiers instead then one of the other variables (year, species or country) would need to be left out

If it is needed to publish data at higher resolution the relevant National Correspondent or ACOM members have to be asked for approval.

Individual fish

Individual fish (CA) holds information on measurement from individual fish. It is always acceptable to show these as individual measurements.

ANNEX 2 Use and Publication of data extracted from the RDBES

Detailed data

According to the definitions in this Data License, which is taken from the EU Regulation 2017/1004, landing data (CL), effort data (CE) and sample data (CS) are considered detailed data.

Rules for use of data

Users of detailed data must sign the "Conditions for RDBES data use" agreement.

Showing data in public reports

Landings (CL) and Efforts (CE) specific rules

In general CL and CE data can be shown when there are at least 3 unique vessels in each row. Rows that do not meet this criterion should either be aggregated with other rows until they do meet it, or suppressed.

A CL or CE row that has the "confidentialityFlag" column set to "Yes" cannot be shown without first being aggregated with other rows. Each aggregated unit must contain at least 3 unique vessels.

General Rule for CS data

- Sample data (CS) can always be shown when data are disaggregated at the following level:

Year	Quarter	Species	Metier[7]	Area[8]

Sample (CS) specific rules

The data that will be public available through the RCGs or ICES Expert Groups reports should be aggregated to the same level as the landings data.

The CS data holds information (auxiliary variables and obtained data) from sampled trips. **It is not allowed to publish CS data in a report in such a way that the individual catches from a given trip are shown**.

Data need to be aggregated before shown in tables or figures. In this context data covers both the data in the CS and data derived from the CS data e.g. estimated discard.

In general CS data can be shown when there are at least 3 unique vessels in each aggregated unit.

Map Plotting of fishing operations/hauls

[7] A group of fishing activities targeting a similar species or assemblage of species, using similar gear, during the same period of the year and/or within the same area, and which are characterised by a similar exploitation pattern. Metiers can be defined at a number of different levels.

[8] Subdivision or unit (FAO definition,http://www.fao.org/fishery/area/Area27/en)

Individual hauls hold information on the geographical positions from sampled fishing operations. It is sometimes valuable to show these positions (e.g. for QA purposes). If doing so only meta data or auxiliary variables can be used in the plots - never the result of the actual sampling.

When plotting maps a *maximum* of three of the following variables can be used.

Vessel flag country	Year	Month	Species	Metier	Vessel length category	Vessel size category	Vessel power category	Position

This rule does not apply if the amount of data in the map is so sparse that individual vessels or trips might be identified. It is the responsibility of the data user to ensure that maps do not plot data that comes from less than 5 vessels.

Example: It is allowed to plot the positions of fishing operations by year, species and countries as long as metiers, vessel size category, vessel power category, vessel length category and month are left out. If the data user wanted to include metiers instead then one of the other variables (year, species or country) would need to be left out

If it is needed to publish data at higher resolution the relevant National Correspondent have to be asked for approval.

Individual fish

Data from biological measurements (e.g. sex, age, maturity, length, weight) of individual fish or groups of fish (such as FM and BV tables) are always allowed to be displayed as long as no data that identifies trips/vessels is included.

ANNEX 3 Document History

When	Where	What	Why
3/12/2020	-	RDB Data Policy split into two separate documents: RDB Data License (this document) and RDB Data Governance.	ICES will have a single overall Data Policy to cover all data, with a number of Data Licenses specifying the usage conditions of specific data sets
3/12/2020	Section 2a	The date for publishing the list of pre-approved ICES WGs has been changed from "01 Dec" to "31 Jan".	Practical reasons.
3/12/2020	Section 2a	The time limit for responding to requests from pre-approved ICES WGs for access to detailed data has been reduced from two months to one month to comply with the DCF recast.	Compliance with article 17(3) of the re-cast DCF.
3/12/2020	Section 2a	Added 3 sentences to explicitly state that users of detailed data must sign the "Conditions for detailed RDBES data use" agreement.	Clarification
3/12/2020	Annex 1	Aggregation rules for CE and CL data have been updated to include Harbour and Landing country variables.	Recommendation from the RCGs
3/12/2020	Annex 2	Added this table of changes as a separate Annex	To give detailed information on changes to the licence
22/02/2023	Annex 1	CL and CE are considered detailed data. The considering of CS as aggregated data, when aggregating over month and sub-division is removed.	To follow new information which was found when the CEencrypedVesselIds was added to the RDBES CE data model.

Annex 5: Conditions of RDBES use

Conditions for RDBES data use

Access and use conditions for RDBES data

May 2023

Goal

This document supports the process of who is given access and what they can do with the RDBES data (as defined in the RDBES Data License).

Scope

This document applies to all people that have been given access to the data, and to ICES Secretariat activities for providing access to the data.

Data user security requirements

1. Data shall be used only for the purposes of facilitating scientific advice, or other work specifically approved by the countries, and will be strictly related to the agreed terms of reference of the activity executed by the data user.
2. Downloaded data shall be secured by appropriate safeguards, such as encryption and password protection of the computer on which it is held.
3. Electronic data provided to the data user(s) shall not be kept on a user's computer/database upon completion of the task related to the term of reference.
4. Data users shall treat the data as confidential and the transmission or sharing of these data are not allowed.
5. Data users shall ensure that visualisations or data products derived from the data adhere to Annex 1 and Annex 2 of the RDBES Data License.

Data ownership

As per the RDBES Data License the national data in RDBES is owned by the individual countries.

Limitations of the data

See the Disclaimer in the RDBES Data License.

Policy for Use of Data

Data users must read and understand the ICES Data Policy (https://doi.org/10.17895/ices.pub.8883) and the RDBES Data License (https://doi.org/10.17895/ices.pub.22188157)

Acknowledgement and agreement to these conditions

End user name (printed)	Email address	Date	Signature

Annex 6: Examples of end user groups where data checks can be performed

- Assessment Working Group
  - In TAF an estimation output and an estimation overview will be produced by country. This can be in the form of an R markdown html document that will be forwarded to the stock coordinator, stock assessor and WG members. Future development of this should be in collaboration with end-users.
- Benchmark data compilation workshops
  - A template for multiannual overviews by stocks for ICES benchmarks has been made by the RCG ISSG overviews, and it has been recommended that ICES takes over these scripts. This template should be presented to one of the ICES benchmarks in 2024. WGRDBESGOV chairs will make contact to the ICES Benchmark Oversight Group
  - Potentially the output report and scripts can be handled over to the ICES benchmark group, and if they have access to RDBES data, they can further develop the outputs according to their needs. This means that the benchmark should be given permission to using the RDBES data.
- WGRDBESGOV
  - For the WGRDBESGOV it is useful with a multinational overview giving a basic inventory of the data submitted to the RDBES that is made publicly available. The RDBESGOV QC intersessional subgroup could help specify this overview, which can be run by the ICES Secretariat.
- RCG Overviews
  - The RCG ISSG Overviews produce overview reports of landings and effort. When working on the overviews, data issues are sometimes spotted, and should be reported back to the data submitter.
- RCG RWP
  - A quality check of CL data submitted by MS in RCG NANSEA and Baltic for the RCG 2024 RDBES data call will be conducted for updating Table 2.1 in the Regional Work Plans in 2024.

Annex 7: Feedback of the WG and WK supporting the RDBES

Second Workshop on introduction to RDBES data submission (WKINTRO2)

The second workshop on introducing the Regional Database and Estimation System (RDBES) data format (WKRDBES-INTRO2), chaired by Henrik Kjems-Nielsen, ICES Secretariat, was held online, 13–15 June 2023 to the three resolution items for the WKINTRO were:

- Describe and explain the Regional Database and Estimation System (RDBES) data model to national data submitters and introduce participants to the necessary documentation for providing data; (Science Plan codes: 4.1;5.1;6.1);
- Arrange support sessions where participants can request expert guidance on adapting national data to the Regional Database and Estimation System (RDBES) data model; (Science Plan codes: 4.1;5.1;6.1);
- The WK will give extra attention to the CE and CL files, considering the results of the quality reports developed by the core group. CL and CE are often filled in by different bodies than CS files (i.e. the Administration), which often are not so involved in the technical WK. Therefore, as it is beneficial and advisable they become familiar with this, this ToR will address this topic specifically. (Science Plan codes: 4.1;5.1;6.1)

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. On the first day, most of the information was presented by Henrik, but the Core Group also gave some presentations. The 51 participants agreed that it was a very good and informative workshop, resulting in a better general understanding of the data model. In the second half of the workshop the participants from the different countries could book a support session. Where typically several participants from the same country could 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 gave an obvious opportunity to describe the national situation and to ask more detailed national specific questions (e.g. which hierarchy to use?).

The WKRDBES-INTRO2 received good feedback:

a. The participants said it was really good and informative workshop
b. Few participants said it was on a high level
c. The workshop should continue in the setup it has

However, it was noted that some of the participants considered that the workshop was on a "high level". Some of the questions and discussion after the presentation were related to this issue. On the one hand it was considered that some of the participants did not prepare enough the WK before attending, and therefore everything was new to them. The recommendation made

for next WKs and also for new personnel attending was to suggest to them to prepare the WK in advance by at least making a quick reading of the documentation and ideally, employ a day or two reading the documentation regarding the RDBES structure and hierarchies. It was also suggested to indicate to the participants the relevant sections of the documentation they must read before attending, instead of going through the whole documentation. In any case, some previous preparation was considered to be necessary.

On the other hand, based on the feedback received from the WK, it was considered that the content and structure was appropriate, with support sessions to guide specific countries questions. For the next WKRDBES-INTRO, it was suggested to include some real examples and also some training on probabilistic sampling design.

During the discussion after the presentation, it was also asked about the participation of the Core Group in these WKs. It was noted that their participation is essential and therefore they will keep on with this. At the same time, being an online WK allows the participation of the Core Group to provide support.

Second Workshop on Raising Data using the RDBES and TAF (WKRaise&TAF2)

The Second Workshop on Raising Data using the RDBES and TAF (WKRDBES Raise&TAF2) met online from 2–6 October 2023 to reproduce estimates of commercial catch data using the Regional Database and Estimation System (RDBES) and the Transparent Assessment Framework (TAF). There were over 40 participants. The final report can be found here.

Both the direct input to stock assessments (stock coordination) and the upstream national estimates were attempted to be reproduced for several stocks. The workshop provided examples of successful reproductions, continuing the reproduction efforts started at WKRDBES_Raise&TAF which convened in 2022. Both kinds of estimates were also implemented in TAF, demonstrating the feasibility of RDBES/TAF to facilitate transparent computation of accepted estimation practices. The workshop also identified issues that would prevent the RDBES/TAF approach from being acceptable to many participating institutions due to data confidentiality concerns and unclear data quality declarations and proposed possible solutions.

National estimation using RDBES and TAF

The following table gives a summary of progress made during the workshop:

Participants	Prior effort	Stocks	Quantity	TAF progress	Implementation	Reproduction
Belgium	R&T 22	sol.27.7fg	LAN, DAN	Started	Partial	Partial
Denmark	None	cod.27.21	LLN, LAN	Started/Issues	Partial/Issues	Partial
Estonia	None	SPR 27.3.d.28-32	LAN	Complete	Partial	Partial
Finland	None	spr.27.22-32, her.27.30-31, her.27.25-2932	LAN, LLN	Started	Started	Started
France	None	sol.27.8ab, syc.27.3a47d	LLN	None	Partial	Partial
Germany	R&T 22	whb.27.1-91214 (datacall WGWIDE)	LLN, LAN	Complete	Partial	Partial, Issues
Ireland	R&T 22, days	Ple.27.7h-k, ple.27.fg, had.27.7b-k, whg.27.7a	LAN, LLN,	Started	Complete	Reproduced
Ireland	days	ple.27.7h-k	DAN, DLN, DB	None	Started	Started
Ireland	R&T 22, days	hom.27.2a4a5b6a7a-ce-k8 mac.27.nea, whb.27.1-91214	LAN	None	Complete	Reproduced
Latvia	none	her.27.28	LAN	Started	Started	Started
Netherlands	none	mac.27.nea	LAN, LLN	None	Complete	Partial
Norway	R&T_22	pok.27.3a46	LAN	-	-	-
Poland	R&T_22, days	ple.27.24-32	LAN	Partial	Complete	Partial
Spain, AZTI	R&T_22, weeks	bss.27.8ab, bss.27.8c9a, hke.27.3a46-8abd, hke.27.8c9a, sol.27.8ab, mac.27.nea, hom.27.2a4a5b6a7a-ce-k8	LLN, DLN	Not started	Partial	Partial
Spain, IEO	R&T_22	hke.27.8c9a	LLN	Not started	Partial	Partial
Sweden	R&T_22	Most demersal stocks	DB	Not started	Partial	Partial, Issues
UK (England)	R&T_22		DB, DLN	Started	Started/Issues	Started
UK (Scotland)	R&T_22	mac.27.nea	LAN	Partial - issues	Complete	Issues

Stock coordination using RDBES and TAF

The following table gives a summary of progress made during the workshop:

Participants	Prior effort	Stocks	Quantity	TAF progress	Reproduction
Belgium	None; R&T_22	Celtic Sea sole (sol.27.7fg)	CANUM_LAN, WECA_LAN, CANUM_DIS, WECA_DIS, CATON_DIS	Partial	Reproduced (outcome of R&T_22)
Belgium	None; R&T_22	North Sea brill (bll.27.3a47de)	CANUM_LAN, WECA_LAN, CANUM_DIS, WECA_DIS, CATON_DIS	Partial	Reproduced/Partial?
Denmark	None	Sprat 3a and 4 (sprat 3a4)	CANUM_LAN, WECA_LAN	Started	
Estonia	None	Baltic sprat (spr.27.22-32)	CANUM_LAN	Did not start	
Ireland	none	had.27.7b-k	CANUM_CATCH, WECA_CATCH	None	Reproduced
Latvia,	None	Gulf of Riga Herring (her.27.28)	CANUM_LAN, WECA_LAN	Started	Started
Netherlands		North Sea plaice (ple.27.420)	CANUM_LAN, WECA_LAN, CANUM_DIS, WECA_DIS, CATON_DIS	started	started
Norway	2 weeks	North Sea saithe (pok.27.3a46)	All CATON, CANUM and WECA (incl. IC postprocessing)	Complete	Reproduced (but based on IC export format).
UK (England)	Days	Northern shelf cod (cod.27.46a7d20)		Partial	Started

Roles/Permissions

During the workshop the following tasks were undertaken:

- Further specify the required RDBES/TAF roles and permissions based on the work previously done in the 2022 WKRDBES_Raise&TAF and WGRDBESGOV meetings. Ensure the descriptions are detailed enough for the ICES Secretariat to implement
- Agree types of TAF database outputs and metadata

Estimation file formats

A subgroup evaluated a draft proposal for a standard TAF output from "national estimate"-TAF repositories. The draft proposal was prepared by the workshop chairs, as a suggestion for a way to generalise upon the InterCatch Exchange format to form a generic and flexible way to communicate domain estimates from fisheries.

The subgroup identified some issues with the draft, prepared a revision of it, and noted the rationale for changes made. In addition to a proposal for format, and explanation about the restrictions imposed, they also made overview of requirements for the format both identified at this workshop and at previous workshops.

The subgroup also set forth to suggest a standard TAF output format for "combined estimate"-TAF repositories (output from stock coordination), but did not make noteworthy progress towards that goal.

Catch/Effort Overview case study

The aim of the Catch/Effort Overview case study was to convert RDB Catch/Effort Overviews to use RDBES/TAF. This involved two main activities:

- structure the architecture of the RDB catch, effort and sampling overviews code in order to fit the TAF,
- trial of the code supported by RDBES related functions and pre-existing RCG ISSG RDB catch, effort and sampling overviews scripts

The Commercial landing (CL) and commercial effort (CE) tables were successfully converted from RDBES format to RDB format, and the process of integration of the overviews into TAF was initiated. Further developments should focus on replacing the conversion of the code with scripts treating the RDBES format directly

TAF / Github / Confidential data

RDBES data needs to be available to the TAF server and currently this is done by pushing the data to a private GitHub repository so that the TAF server can access it. However, some workshop participants said they might not be allowed to push RDBES data to GitHub - this would prevent it being used in TAF. The workshop considered how confidential RDBES data can be used within TAF without requiring it to be uploaded to GitHub - the potential solutions were identified and evaluated.

A recommendation was made: In order to remove the need to store RDBES data in GitHub repositories we recommend that the ICES Secretariat develops 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.

RDBES/TAF issues encountered

- Technical issues with TAF database services
- The TAF database will be used to flag files as being an output from an estimation repository, such that they can then be used as an input to a different repository.
- During the workshop this facility was not working so could not be tested.
- RDBES Upload Logs
- A recommendation was made: in order to facilitate testing and gradual adaptation to the RDBES upload logs should be mandatory with data submission and should be made easily available for all data users.
- RDBES/TAF Repository Structure
- During the workshop some participants pointed out that they will have a lot of scripts that are used during estimation and it might be hard to manage and keep track of them within a single repository.
- TAF - version control of estimation outputs
- Running the TAF functions in a national repository will create all national estimation outputs using the latest RDBES data. If the RDBES data has been updated, then it might

be the case that national estimation output files that have already been used in earlier data calls get re-created with different values. This will make it hard to keep track of which version of the file was actually used in a data call.

Future reproduction workshops

The main purpose of the three Raise&TAF workshops has been to make an entire reproduction of stock coordination output from detailed national data submitted to RDBES, but this has yet to be delivered. As the main purpose of the workshop has yet to be completely achieved, the workshop recommended that another workshop with this purpose is arranged in 2024. Since the individual components of reproduction have been achieved, it was believed that such a workshop could be set up to actually deliver input to an ICES stock assessment in 2024 if the data call deadline permits, and other technical issues identified in this workshop are resolved. The workshop will not necessarily have to use all features of RDBES/TAF, but aim to incorporate as many as possible while still delivering data consistent with earlier deliveries

Plenary discussion in WGRDBESGOV 2023

Co-chair David Currie presented outcomes of WKRDBES Raise&TAF2 to the WGRDBESGOV 2023 meeting. The plenary discussion that followed centered around two issues:

- Versioned data access to RDBES and TAF-outputs would be facilities that greatly simplifies the goal of complete reproducibility of estimates. Versioned data access means in this respect that users may want to receive an exact copy of a previously issued request for data, even if the database have been updated in the mean time. ICES Secretariat indicated that this is technically feasible, but currently not specified or cost-estimated.
- The concerns about confidential data in github does not only pertain to the detailed data delivered from the RDBES, but also for the output of TAF-repositories. ICES Secretariat confirmed that current solutions for storing TAF-outputs does not depende on github or other resources outside of ICES control, and noted the confidentiality requirement for future development.
- WGRDBESGOV decided to set up a ISSG on finalizing RCEF. The objective of this subgroup is to finalize the draft RCEF produced by WKRDBES-Raise&Taf2 and deliver it to WGRDBES-StockCoor. It should work early in the year to give feedback to WGRDBES-StockCoord. More details can be found in Annex 2 of the WGRDBES-WKRAISE&TAF2 report.

Workshop on the RDBES Flow (WKRaise&TAF-Flow)

The Workshop on the RDBES Flow (WKRDBES-RaiseTAFFlow) meet online, 22, 24, 26 May (half day sessions) with the objective to:

a) Within the RDBES, test the full commercial catch TAF estimation workflow from national estimates to international stock coordination suggested at WKRDBES-Raise&TAF (2022) for two stocks, wit.27.3a47d and pok.27.3a46. This includes looking into setting up the TAF repository for national estimation of commercial catches and international stock coordination of catch estimate. This with the focus in setting up of the structure, roles, confidential folders, and

continuing the data format specifications for exchange of data within TAF and storage of these.

b) Make recommendations to WKRDBES-Raise&TAF2 and WGRDBESGOV about the roles in the flow.

The purpose of the WK was to test the full estimation workflow with TAF, but the WK became more speculative than practical because all the infrastructure required for a workflow is still under development. Since it was not possible to do any practical testing, then it also became difficult to identify any potential issues with the workflow suggested at WKRDBES-Raise&TAF (2022), but overall the participants felt that the suggested structure should support future needs. The suggested repository structure was tested and seems to work well for the stock coordination repository. The group felt the structure of the national repositories should be up to each nation, since it should support national routines, which probably differs widely across institutes.

The group came up with a lot of ideas about new features to support their work, e.g. quality check of intermediate data, notifications to the stock coordinator when data are pushed to DB, proper version control for data pushed and tools for preventing accidental pushing sensitive data to GitHub. The group also felt that it would be good to have training workshops, since a lot of future users will be unfamiliar with TAF.

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 third time from 16th to 20th October 2023 at the ICES Headquarters, in Copenhagen, Denmark. The Working Group aims to:

i. Develop and document R scripts and functions for statistical estimation using the RDBES data format,
ii. Identify and document any problems with RDBES data model relating to statistical estimation,
iii. Coordinate the peer-review and inclusion of ToR a) outputs in the icesRDBES package,
iv. Establish a road forward to the improvement of estimates of commercial catches used in ICES assessments and
v. Collaborate with WGRDBESGOV and WGTAFGOV to secure the integration of outputs from WGRDBES-EST in TAF.

WGRDBES-EST 2022/2023 held five intersessional online sessions (2022: November, December; 2023: January, February, March) followed-up by a final meeting (October 2023) after which an extra online session was held (November 2023). Version 0.3.0 of the RDBEScore package was launched in mid-November 2023.

WGRDBES-EST finished its first 3-yr cycle in 2023. As such, most of the work focused in updating the existing code to the newest version of the RDBES, finalizing and tidying up the R code and example data that were under development, and closing pending issues. Additional development was for the most restricted to functions considered priority for users dealing with RDBES. Finally, during the main meeting, WGRDBES-EST drafted a plan for development of RDBESvisualise, started working on functions for that package, and discussed package maintenance and ToRs for the next 3-yr cycle.

In brief:

iii the latest version of RDBEScore includes i) a set of functions for RDBES data import and data handling (e.g. filtering, merging RDBES objects), ii) a set functions that prepare data for estimation (e.g. generating probabilities, adding zeros and missing values to sample data based on species lists), and iii) a set of functions for unbiased design-based estimation. Vignettes demonstrating the use of the main functions are also included, as-well as a set of textbook example data taken from core sampling literature that can be used to demonstrate and test estimation functions. For the most, RDBEScore is coded in base R and data.table relying on a minimum number of dependencies. That feature should provide some additional robustness to the package when issues are detected in other packages. Additionally, the main functions are covered by unit tests that ensure their expected behavior when updates are made. Overall, 24 people have contributed directly or indirectly to development thus far, 12 of them as active contributors/authors. The RDBEScore package is available for download on the ICES GitHub (https://github.com/ices-tools-dev/RDBEScore). A similar path of development is presently envisioned for RDBESvisualise but the package will rely on a larger number of dependencies so that it can make use of the wide variety of graphical functions already developed by the R community.

iv Thus far, WGRDBES-EST has not encountered significant data model issues that prevent the use of RDBES for statistical estimation. In 2023 only two issues were reported to the core-group of RDBES development, confirming the relative stability of the RDBES data model and its usefulness for design-based estimation.

v While the RDBEScore and RDBESvisualise are being developed, the maintaince of the package is envisioned to be carried out within the annual work of WGRDBES-EST. That set-up is well adapted to the experimental nature of most functions developed. This situation may need to change if/when the package is expected to be used directly in estimation towards stock assessment. Use of RDBEScore or RDBESvisualise in the context of national/regional estimation for stock assessment will require a level of maintenance and user support over what are very busy periods of time for WGRDBES-EST participants. In such circumstances, the ICES Data Centre will need to assume the leading role with WGRDBES-EST participants supporting on a voluntary basis.

vi WGRDBES-EST discussed its own future. Participants are highly engaged and look forward to continue the work over a next 3 year cycle. Concerning RDBEScore the objective will be to finalize some aspects of design-based (unbiased) estimation and move towards the development of ratio estimation. Concerning RDBESvisualise, the work planned will continue towards the launching of the package. It is expected that its development is strengthened by an alignment of its work with the RCG ISSG on "Catch, Effort and Sampling Overviews" which reports strongly rely on visualisations of RDB/RDBES data. New chairs – Ana Cláudia Fernandes (Portugal) and Richard Meitern (Estonia) were appointed – with draft ToRs prepared and discussed during WGRDBESGOV meeting.

TAF

TLDR; TAF For Dummies

- The TAF system seeks to support ICES scientists by providing a common way (the TAF Workflow) to organise the data and scripts used in an analysis, and a means for them to share their code, data and results.
- Over time the effort invested by the community in writing their analyses following the TAF workflow rules and guidelines will improve efficiency. Efficiency gains come about through sharing of code, copying from oneself (when repeating an analysis the

following year) and from others when seeking to improve code, or attempt a new analysis. In this way, the TAF workflow provides a common ground for sharing code.

- The TAF system is wider than the workflow rules and guidelines, and involves infrastructure, such as Git version control, hosted on GitHub, a user interface, a server to test and rerun each analysis, and a database and file system to store the results from running each analysis on the TAF server.
- Why is TAF important. Everyone is different, has different experience and skills, and different thought processes, so when setting out on designing and coding an analysis, each person is likely to come up with a different approach, and write the code for their analysis in a different way.
- The TAF workflow, is intended to provide a framework that is flexible enough to accommodate a wide range of analyses and modelling techniques, while being strict enough to ensure interoperability, through common script names, consistent ways of documenting data, and a basic set of rules.
- TAF is not a tool as such, but an approach. It is the users that make it a tool by creating content for others to learn from and reuse.

Overview

At its simplest, a TAF analysis is a self-contained piece of work, typically involving the processing of a data set (or sets) into a collection of outputs, such as csv files, images. There are two stages to a TAF analysis: the boot procedure, and the analysis. The boot procedure deals with the data and software requirements of the analysis are described in more detail below. While the analysis is based on R scripts organised into 4 sections: *data* - for data processing; *method* – for applying a model or method to the processed data; *output* – the processing of output from the method; and *report* – the production of plots and formatted tables.

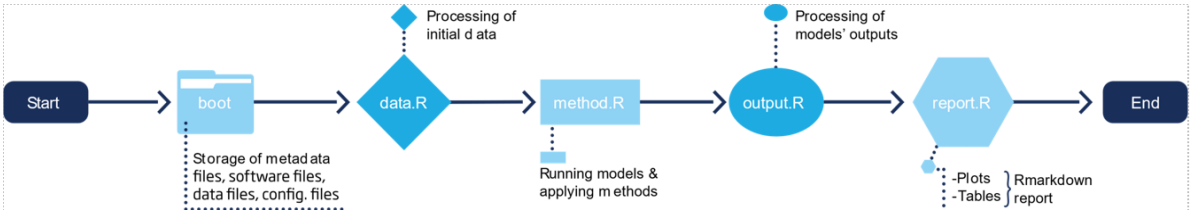

Diagram showing what a TAF analyses is, internal view.

Prior to the analysis - which can be considered as a description of the analysis being undertaken – is the boot procedure – which can be considered a description of how to get the data and software, and a reference for each. Both data and software can be provided by the user / analyst or accessed from an online source using a single URL or in more complex cases, via an R script.

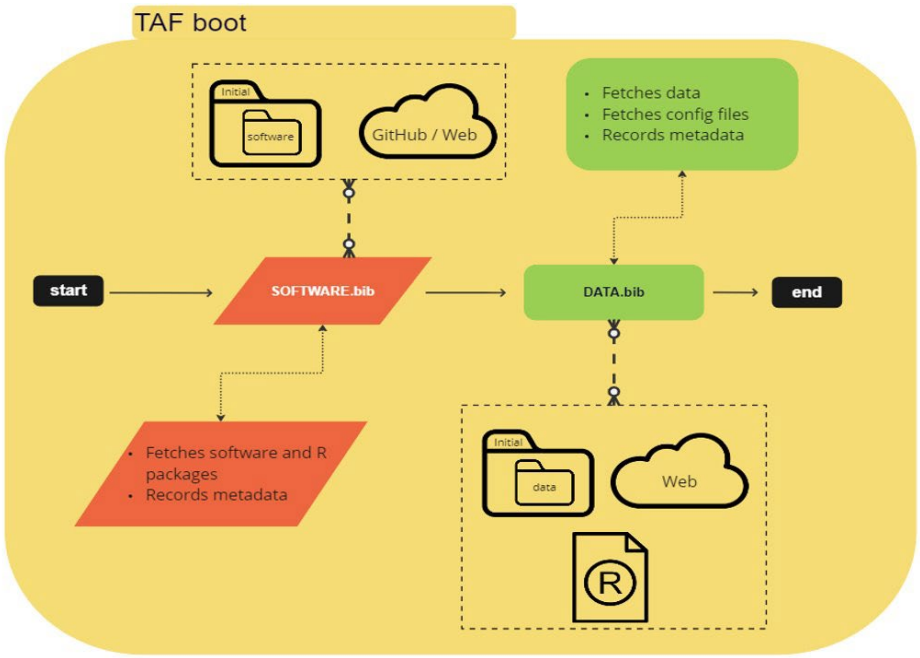

Diagram showing the boot procedure

The bigger picture

Although a TAF analysis can be a stand-alone piece of work, in the context of ICES, very often one analysis will depend on, or support another. The initial motivation for TAF was to make stock assessments, as self-contained analyses, more transparent and to improve knowledge sharing among stock assessors. However, a stock assessment is a good example of an analysis whose inputs are the outputs of other processes, for example, the estimation of an index of abundance, or the estimation of total catches and their age and length distribution. From this perspective, then, a natural step is to not only consider single analyses, but to also provide a system where whole processes composed of several connected analyses can be built.

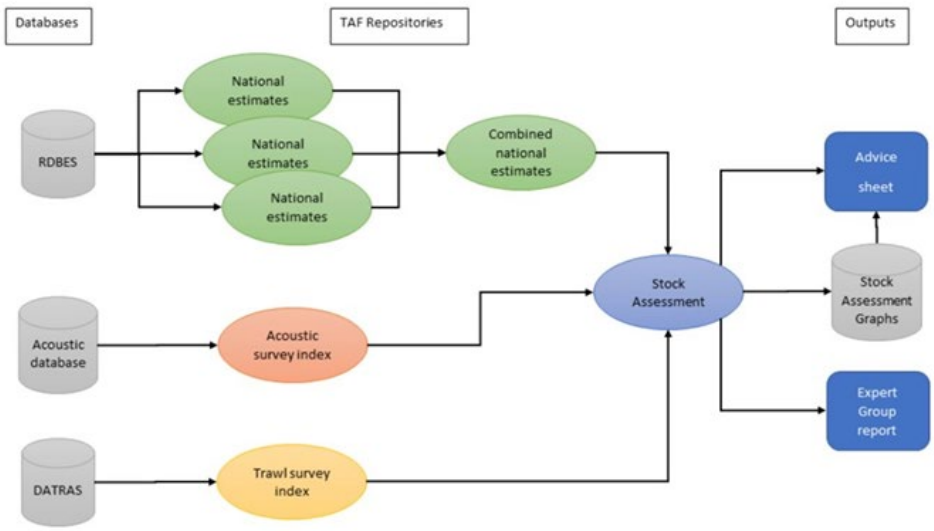

Diagram showing the linkages between analyses

Connecting analyses: ARTIFACTS

An artifact is a standard output from a TAF analysis, for example, a stock assessment should always produce the output required to produce the so-called standard graphs used in the advice sheets which is achieved by uploading a summary of the stock assessment to the standard graphs database (SAG). An artifact for a stock assessment TAF analysis is then a file conforming to the upload format for the SAG database, and it is expected that a stock assessment provides this file.

For RDBES national repositories, artifacts are being defined, but are likely to be detailed and summary outputs which are required to create the combined national estimates. An obvious artifact for a combined national estimate repository is the collection of files previously provided by INTERCATCH.

Artifacts are stored in a database, and should be 'well known', i.e. have a defined format, but are not restricted to tables, they can be binary files, and therefore be R objects if required.

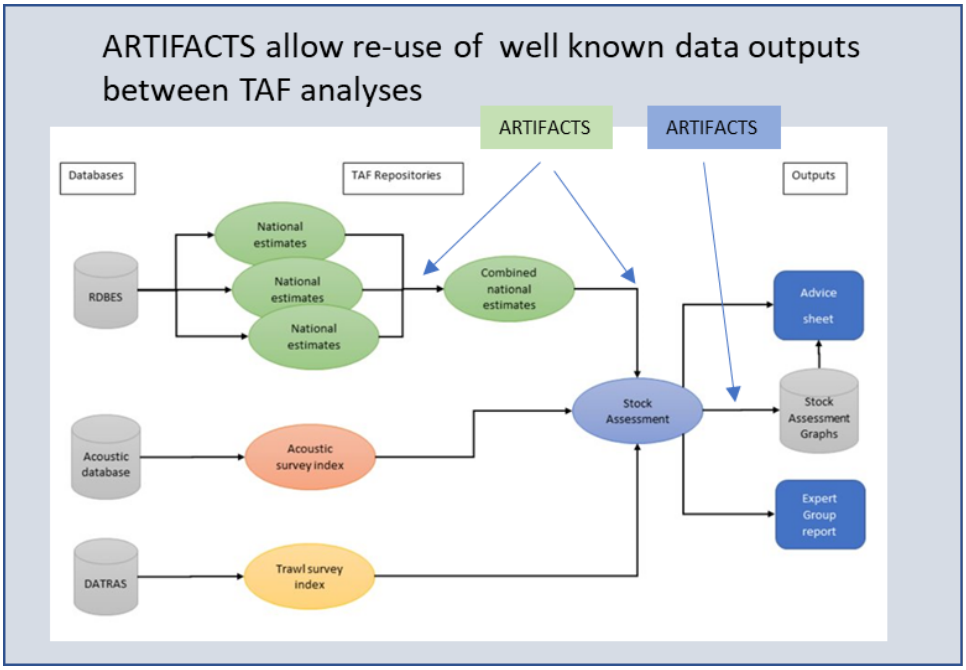

Diagram showing how artifacts allow sharing between analyses

The structure of the file where the user defines the artifacts created in their analysis takes the following form

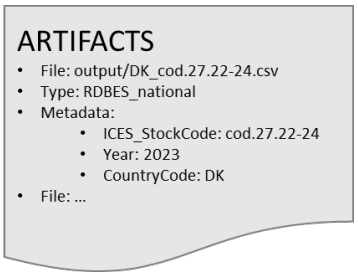

Diagram of an artifact file

Where the location of the file within the analysis is stated, along with the type of output (SAG upload, rdbes national, etc.) and additional metadata so that the file can be searched and accessed from the database at a later date. The metadata and type also allow rules to be built to restrict access.

Annex 8: Feedback on FDI datacall

The aim of the RDBES – FDI alignment is to determine if it is possible to populate the FDI tables using the RDBES data. The work that has been done by the WGRBDESGOV has been to identify the variables that can be added to the RDBES data model but also suggest changes to the FDI data call. These suggestions were taken up to the STECF EWG 23 05 FDI Methodology meeting where the group discussed the highlighted issues and provided suggestions for the RDBES and FDI alignment.

SPATIAL RESOLUTION (C_SQUARE): It was suggested to add a new optional field in the RDBES CL and CE tables that will hold the c-square variable. Additional database checks will be required to ensure the consistency between the ICES rectangle and the corresponding c-squares.

METIER: In some cases, countries provided the metiér level 6 but not the corresponding gear. The EWG 23 05 FDI Methodology suggested to use the MIS_TARGETASSEMBLAGE (e.g. MIS_DEF_0_0).

CAPACITY (TABLE J): It was suggested to add a capacity table in the RDBES data model.

WoRMS species code: Furthermore, WGRBDESGOV proposed to add to the FDI tables the WoRMS species code (AphiaID) as an extra variable because some species do not have a FAO code associated. The EWG 23-05 considers that it might be useful to add two new columns in FDI table A: AphiaID (Optional) and Scientific Name (Optional) keeping the SPECIES column in the FDI as it is now (FAO species code).

The EWG 23 05 considers that, at this stage of development, the RDBES estimation process is not yet fully mapped out and it is not possible to produce the FDI biological tables (C, D, E, F, K), as well as provide the discard estimates in table A. It is, however, beneficial to keep track of the RDBES progress and continue this work when the RDBES data are fully integrated in the stock assessment process.

Annex 9: Data submission for RDB and RDBES data calls

RDB data call Summary

Baltic data submissions to the RDB by country 2023

Table 3. Landings species Baltic Sea, BS

CL Species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Denmark	50	59	49	51	54	57	55	63	65	60	57	61	54	49
Estonia	28	38	40	33	38	35	31	35	38	31	37	28	28	29
Finland	22	22	22	22	22	22	20	20	19	20	20	20	20	20
Germany	43	43	40	45	46	45	44	40	45	44	43	46	39	46
Latvia	30	12	12	12	12	33	34	34	32	33	35	30	34	35
Lithuania	12	11	13	26	12	25	23	24	27	26	27	29	28	26
Poland	36	38	36	34	36	34	33	32	36	36	40	36	39	39
Sweden	49	46	46	41	41	44	45	48	42	47	51	52	51	50

All fine.

Table 4. Effort numbers of metiers BS

CE metiers	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Denmark	52	58	57	49	47	44	41	47	47	44	49	50	50	38
Estonia	3	2	2	2	2	2	2	1	3	3	6	6	6	6
Finland	14	15	14	15	13	14	14	14	15	16	15	15	16	14
Germany	49	49	49	44	46	42	43	44	36	43	44	41	38	48
Latvia	12	14	12	14	14	13	14	13	13	14	14	16	14	13
Lithuania	8	8	8	7	9	7	11	12	10	11	12	10	10	9
Poland	32	30	38	41	41	39	30	30	28	28	29	33	36	36
Sweden	46	52	52	50	48	45	47	47	44	43	49	47	47	46

All fine.

Table 5. Number of species from length samples HL BS

HL species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Denmark	37	45	38	29	39	42	31	39	32	32	37	32	26	28
Estonia	5	12	19	30	32	42	3	6	6	6	3	3	3	3
Finland	22	26	30	32	31	33	33	32	31	30	35	37	33	35
Germany	24	30	25	27	30	32	20	38	32	28	25	28	21	24
Latvia	4	6	16	13	14	17	16	19	26	31	27	23	26	31
Lithuania	4	4	4	4	9	15	13	8	16	7	7	9	11	6
Poland	29	29	40	44	46	47	50	40	35	36	38	40	40	37
Sweden	45	29	42	43	50	49	42	43	46	50	42	40	48	42

All fine.

Table 6. Number of species from individual fish samples CA with age data BS

CA species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Denmark	8	10	10	10	10	9	8	8	8	8	8	7	6	8
Estonia	4	8	7	7	11	9	3	5	5	5	3	3	3	3
Finland	6	6	6	7	5	5	6	5	6	7	9	8	7	15
Germany	8	8	9	10	11	8	8	8	8	8	4	5	8	8
Latvia	5	5	8	9	9	7	9	10	8	9	10	7	8	9
Lithuania	4	4	4	4	4	6	4	4	3	3	6	7	9	8
Poland	12	11	12	16	17	18	16	17	16	10	14	16	12	14
Sweden	6	5	5	6	6	6	5	6	6	5	3	4	4	4

All fine. Finland have increased the number of species for which individual fish sample data is uploaded.

NA NSEA data submissions to the RDB by country 2023

Table 7. Landings species North Atlantic North Sea Eastern Arctic, NA NSEA

CL species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Belgium	102	109	105	110	101	131	131	135	134	148	141	135	134	138
Channel Islands							55	54	60	44	46	24		
Denmark	85	89	85	93	107	115	103	115	126	119	122	136	150	142
England		237	239	238	231	228	224	233	264	243	240	177		
Estonia	1	1	1	2	5	9	4	5	7	5	5	6	4	4
France		214	214	184			395	404	376	407	392	391	395	406
Germany		41	72	78	74	72	76	89	97	101	106	105	109	98
Ireland	138	142	128	144	142	131	125	123	128	131	126	141	134	138
Latvia	1	1	1	1	1	1	1	2	6	8	5	10	7	8
Lithuania	4	5	9	24	3	12	5	8	6	9	10	16	9	6
Netherlands	110	123	127	138	133	117	131	140	125	125	127	127	130	117
Northern Ireland		96	103	103	86		98	84	99	99	100	63		
Poland	9	9	9	10	10	12	17	18	20	28	31	27	26	7
Portugal	197	203	196	338	324	314	308	276	305	359	304	297	360	343
Scotland		204	194	200	187	170	169	182	207	196	182	113		
Spain						102	103	109	120	120	116	144	396	379
Sweden	57	66	66	67	66	63	71	72	68	67	74	74	77	73
Wales		91	93	93	101	97	94	103	96	82	83	38		

Poland have a significant drop in the number species uploaded for landings, all others are fine.

Table 8. Effort numbers of metiers NA NSEA

CE metiers	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Belgium	21	23	23	22	21	22	20	19	18	17	17	17	22	18
Channel Islands							10	10	13	11	14	9		
Denmark	82	70	70	63	57	59	61	62	66	54	61	58	57	57
England		199	196	197	191	164	147	151	160	137	142	140		
Estonia	1	1	1	1	2	3	2	2	2	2	1	3	2	2
France		84	88	85			270	179	231	106	104	100	100	99
Germany		48	36	40	33	28	29	33	39	36	39	40	36	36
Ireland	29	29	32	30	32	24	20	19	26	26	27	25	37	32
Latvia	1	1	1	1	1	1	1	1	2	4	2	3	2	2
Lithuania	3	4	9	7	3	7	5	9	4	4	5	6	6	4
Netherlands	55	60	56	59	55	44	64	54	44	33	40	42	42	40
Northern Ireland		44	42	39	35		37	36	33	35	37	42		
Poland	2	1	1	1	1	1	2	1	3	5	7	5	3	3
Portugal	20	21	19	22	22	20	19	18	25	26	22	21	30	26
Scotland		124	115	122	110	102	89	100	105	102	110	105		
Spain						38	38	37	36	37	36	36	30	29
Sweden	48	42	40	49	55	45	46	42	45	44	39	46	44	43
Wales		36	43	46	38	34	37	36	38	32	37	28		

All fine.

Table 9. Number of species from length samples HL NA NSEA

HL species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Belgium	19	47	29	26	27	26	27	26	28	34	29	31	35	35
Denmark	93	95	96	92	98	96	102	95	99	120	113	96	102	106
England	221	213	208	251	212	189	207	208	207	53	46			
Estonia						2		1				4	10	8
France				2					385	386	382	307	338	383
Germany	75	94	73	114	116	126	109	122	140	135	146	110	118	140
Ireland	115	118	128	127	107	110	127	105	110	107	99	94	107	98
Latvia	1	1	5	1	1	1	1	1						
Lithuania			1	2	2	2	2	2	2	2	2	2	2	5
Netherlands	45	45	56	48	44	51	44	45	58	35	108	102	105	110
Northern Ireland								57		58		45		
Poland	11	18	3	17	16	16	30	35	20	11	18			
Portugal	213	214	235	224	233	228	240	225	263	269	255	188	173	181
Scotland		45	52	51	230	192	214	210	192	177	196	149		
Spain	26	30	17	19	15	223	220	201	217	191	195	148	205	214
Sweden	4	75	76	81	71	80	98	90	97	99	91	80	75	95
United Kingdom	54	65	58	70	60	60	57		53		46			
Wales								11		10	8			

All fine.

Table 10. Number of species from individual fish samples CA with age data NA NSEA

CA species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Belgium	13	13	14	14	6	10	10	10	13	13	12	12	16	16
Denmark	19	21	24	23	23	22	23	24	24	24	21	19	19	17
England	21	23	25	29	25	25	22	25	26	21	21			
Estonia													2	3
France				30				34	29	37	42	41	41	9
Germany	11	13	11	12	12	13	13	10	12	12	13	10	15	13
Ireland	14	15	15	15	14	13	12	13	14	11	11	12	12	14
Lithuania									1					
Netherlands	17	18	17	16	17	18	16	17	17	14	16	16	14	17
Northern Ireland								5		5		3		
Poland	1	2	3	1	1	1	3	3	2	2	1			
Portugal	7	6	7	7	7	5	5	6	6	5	7	5	4	4
Scotland		20	19	21	23	23	21	20	21	24	23	20		
Spain	1	1	8	4	5	15	22	6	21	22	19	10	13	10
Sweden	4	5	6	5	5	5	5	5	5	5	5	5	5	5
United Kingdom									4		27	28		
Wales								4						

All fine.

Table 11. Number of species from individual fish samples CA with age data NA NSEA

CA species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Belgium	13	13	14	14	6	10	10	10	13	13	12	12	16	16
Denmark	19	21	24	23	23	22	23	24	24	24	21	19	19	17
England	21	23	25	29	25	25	22	25	26	21	21			
Estonia													2	3
France				30				34	29	37	42	41	41	9
Germany	11	13	11	12	12	13	13	10	12	12	13	10	15	13
Ireland	14	15	15	15	14	13	12	13	14	11	11	12	12	14
Lithuania									1					
Netherlands	17	18	17	16	17	18	16	17	17	14	16	16	14	17
Northern Ireland								5		5		3		
Poland	1	2	3	1	1	1	3	3	2	2	1			
Portugal	7	6	7	7	7	5	5	6	6	5	7	5	4	4
Scotland		20	19	21	23	23	21	20	21	24	23	20		
Spain	1	1	8	4	5	15	22	6	21	22	19	10	13	10
Sweden	4	5	6	5	5	5	5	5	5	5	5	5	5	5
United Kingdom									4		27	28		
Wales								4						

France has a significant drop in the numbers of species uploaded with individual fish sample data, the rest are fine.

RDBES data call Summary

In the RDBES data call 2023: Landings, discards, incidental bycatch, biological sample and effort data from all species from year 2022 are requested to be uploaded into the RDBES.

Data call was sent 4th July, and the deadline was the 29th September 2023. The RDBES web site was opened the 29th August 2023.

Upload logs

The Upload logs shown that most of the cases where countries did not upload all data, then the magnitude of the missing data was small. In all cases the issues will be solved nationally. Only in the case of upload issues for landing CL and effort CE regarding the newly added fields for FDI. The fields were not added as key fields, which means the data could not be further detailed according to the FDI fields, this should be changed in the next version of the RDBES. Some species codes were missing in the RDBES and unfortunately because the country did not request the species codes at RDBsupport@ices.dk - which should have been done, the country did not upload the data for those few species.

Landings - number of species

Table 12. Number of species in landings (CL) by country for data year 2022 in blue to the right compared with data uploads for data year 2021 in green to the left.

Country\Year	2021
BELGIUM	67
Denmark	128
England	153
ESTONIA	52
FINLAND	27
FRANCE	237
GERMANY	111
GUERNSEY	24
IRELAND	120
ISLE OF MAN	36
JERSEY	32
LATVIA	39
LITHUANIA	32
NETHERLANDS	118
Northern Ireland	63
NORWAY	3
POLAND	63
PORTUGAL	237
Scotland	111
SPAIN	411
SWEDEN	102
Wales	67
Grand Total	2233

Country\Year	2022
BELGIUM	71
Denmark	131
England	142
ESTONIA	55
FINLAND	27
FRANCE	259
GERMANY	106
GUERNSEY	25
IRELAND	119
ISLE OF MAN	41
JERSEY	38
LATVIA	63
LITHUANIA	51
NETHERLANDS	99
Northern Ireland	54
POLAND	57
PORTUGAL	230
Scotland	118
SPAIN	474
SWEDEN	97
Wales	58
Grand Total	2315

Comment: In general, there is a good upload of landings by species for data year 2022. The following countries have not uploaded landings data: Norway, Faroe Islands and Iceland.

Effort - numbers of metiers

Table 13. Number of metiers in effort (CE) by country for data year 2022 in blue to the right and to the left in green is the table from last year.

Country\Year	2021
BELGIUM	15
Denmark	118
England	185
ESTONIA	10
FINLAND	17
FRANCE	319
GERMANY	73
GUERNSEY	5
IRELAND	36
ISLE OF MAN	20
JERSEY	7
LATVIA	17
LITHUANIA	21
NETHERLANDS	43
Northern Ireland	39
POLAND	39
Scotland	98
SPAIN	37
SWEDEN	83
Wales	34
Grand Total	1216

Country\Year	2022
BELGIUM	11
Denmark	108
England	2
ESTONIA	16
FINLAND	17
FRANCE	359
GERMANY	89
GUERNSEY	2
IRELAND	33
ISLE OF MAN	2
JERSEY	1
LATVIA	16
LITHUANIA	23
NETHERLANDS	46
Northern Ireland	40
POLAND	39
PORTUGAL	29
Scotland	93
SPAIN	42
SWEDEN	93
Wales	2
Grand Total	1063

Comment: In general, there is a good upload of effort data by metiers (fishing gear specified to metier level 6). Portugal have this year again uploaded effort data. The following countries are low in numbers of metier compared with last year's upload; England and Wales. The following countries have not uploaded effort data: Faroe Islands, Iceland and Norway.

Samples information – number records in Sample Details (SD) by hierarchies

Table 14. Number records in Sample Details (SD) by hierarchies in data year 2022.

Country\Hierarchy	1	2	3	4	5	6	7	8	9	13	Grand Total
BELGIUM		1									1
Denmark	5	9							8		22
England	4				16						20
ESTONIA			2				2	10			14
FINLAND	16										16
FRANCE	8				3						11
GERMANY	4			1		2					7
IRELAND	8				12						20
LATVIA	4									1	5
LITHUANIA	2							7			9
NETHERLANDS	3				4						7
Northern Ireland			1		1						2
POLAND	7										7
PORTUGAL					2						2
Scotland		7			4						11
SPAIN	15		16		175		85				291
SWEDEN	35		14		8						57
Grand Total	**111**	**17**	**33**	**1**	**225**	**2**	**87**	**17**	**8**	**1**	**502**

Comment: It is clear to see that hierarchy 1 and 5 are the most used by the countries. Spain and Sweden have uploaded most sample detail records. Hierarchy 10, 11 and 12 are not used at all by any country. The following countries have not uploaded sample data: Faroe Islands, Iceland, Wales and Norway.

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

Table 15. Number species in Sample (SA) by hierarchies in data year 2022.

Country\Hierarchy	1	2	3	4	5	6	7	8	9	13	Grand Total
BELGIUM		55									55
Denmark	128								14		142
England	148				57						205
ESTONIA			6				2	3			11
FINLAND	34										34
FRANCE	258				84						342
GERMANY	161			1		1					163
IRELAND	97				34						131
LATVIA	30									5	35
LITHUANIA	5							6			11
NETHERLANDS	89				11						100
Northern Ireland			67		9						76
POLAND	40										40
PORTUGAL					178						178
Scotland		96			37						133
SPAIN	340		149		176		17				682
SWEDEN	154		13		1						168
Grand Total	**1484**	**151**	**235**	**1**	**587**	**1**	**19**	**9**	**14**	**5**	**2506**

Comment: There is a large difference in the number of species the countries have uploaded. The following countries have not uploaded sample data: Faroe Islands, Iceland, Wales and Norway.

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

Table 16. Number records in Frequency Measure (FM) by hierarchies in data year 2022. The Frequency Measure table most often contain the number at each length class, potentially the table could also contain weight class.

Country\ Hierarchy	1	2	3	4	5	6	7	8	Grand Total
BELGIUM		67932							67932
Denmark	22566								22566
England	89225				38070				127295
FINLAND	6972								6972
FRANCE	172103				70067				242170
GERMANY	38190			272		13			38475
IRELAND	15813				31792				47605
LATVIA	1981								1981
LITHUANIA	850							657	1507
NETHERLANDS	12578				889				13467
Northern Ireland			54290		249				54539
POLAND	4295								4295
PORTUGAL					35304				35304
Scotland		72129			40034				112163
SPAIN	91422		23032		142008		1212		257674
SWEDEN	19141		310						19451
Grand Total	**475136**	**140061**	**77632**	**272**	**358413**	**13**	**1212**	**657**	**1053396**

Comment: Data for the Frequency Measure (FM) (typically length class) is uploaded by most countries. The following countries have not uploaded sample data: Faroe Islands, Iceland, Wales and Norway.

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.

Table 17. Data year 2021

Country\hierarchy	1	3	4	5	6	7	8	Grand Total
England	2632			6564				9196
GERMANY	258863		9897		100			268860
IRELAND				103122				103122
LATVIA	36906							36906
LITHUANIA							11824	11824
NETHERLANDS	15969							15969
POLAND	37006							37006
Scotland				10415				10415
SPAIN						17848		17848
SWEDEN	19435	3114						22549
Grand Total	370811	3114	9897	120101	100	17848	11824	533695

Table 18. Data year 2022

Country\Hierarchy	1	2	3	4	5	6	7	8	Grand Total
Denmark	15182								15182
England	2245				6807				9052
GERMANY	156456			5380		344			162180
IRELAND					110458				110458
LATVIA	44287								44287
LITHUANIA	6546							13838	20384
NETHERLANDS	178476								178476
POLAND	31480								31480
Scotland		12628			22085				34713
SPAIN							14946		14946
SWEDEN	56430		3200						59630
Grand Total	**491102**	**12628**	**3200**	**5380**	**139350**	**344**	**14946**	**13838**	**680788**

Comment: A large number of Biological Measurement 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 for the Netherland 160.000, Sweden 37.000, Scotland 24.000 under FM. But a drop for Germany 107.000. Other countries have also uploaded Biological Measurement (BV) data, but directly under the Sample (SA) table, see below.

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

Table 19. Data year 2021

Country\hierarchy	1	2	3	5	7	8	13	Grand Total
BELGIUM		29828						29828
ESTONIA			55105			89104		144209
FINLAND	35144							35144
IRELAND	20013			82228				102241
LATVIA	22380						3956	26336
LITHUANIA	4000							4000
NETHERLANDS	6291			19953				26244
NORWAY	628733							628733
SPAIN	117613			150691	77932			346236
SWEDEN	16956			42288				59244
Grand Total	851130	29828	55105	295160	77932	89104	3956	1402215

Table 20. Data year 2022

Country\Hierarchy	1	2	3	5	7	8	13	Grand Total
BELGIUM		35081						35081
Denmark	4914							4914
ESTONIA			59427		5951	85620		150998
FINLAND	37096							37096
IRELAND	7841			65757				73598
LATVIA	18085						3788	21873
LITHUANIA	3000					4481		7481
NETHERLANDS	186			28134				28320
Scotland		5123						5123
SPAIN	93812			129063	54468			277343
SWEDEN	29820		28446	5877				64143
Grand Total	**194754**	**40204**	**87873**	**228831**	**60419**	**90101**	**3788**	**705970**

Comment: A large number of Biological Measurement data have been uploaded. Belgium, Estonia and Finland 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 the Lithuania 3.000, Scotland 5.000. But a drop for Spain 69.000 and Sweden 5.000. Sweden have increased in BV under SA, which could indicate that they are uploading data linked to length data, which is good.

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 was also uploaded last year. Orange indicated the data was uploaded last year but not this year. The yellow indicates the data was not uploaded last year, but the data have been uploaded this year.

Table 21. Countries upload overview

Country\Data type	Landing	Effort	Sample Details	Sample	Frequency Measure	Biological Variable
BELGIUM	Yes	Yes	Yes	Yes	Yes	Yes
DENMARK	Yes	Yes	Yes	Yes	Yes	Yes
England	Yes	Yes	Yes	Yes	Yes	Yes
ESTONIA	Yes	Yes	Yes	Yes		Yes
Faroe Islands						
Finland	Yes	Yes	Yes	Yes	Yes	Yes
FRANCE	Yes	Yes	Yes	Yes	Yes	
GERMANY	Yes	Yes	Yes	Yes	Yes	Yes
Iceland						
GUERNSEY	Yes	Yes				
IRELAND	Yes	Yes	Yes	Yes	Yes	Yes
ISLE OF MAN	Yes	Yes				
JERSEY	Yes	Yes				
LATVIA	Yes	Yes	Yes	Yes	Yes	Yes
Lithuania	Yes	Yes	Yes	Yes	Yes	Yes
NETHERLANDS	Yes	Yes	Yes	Yes	Yes	Yes
Northern Ireland	Yes	Yes	Yes	Yes	Yes	
NORWAY						
POLAND	Yes	Yes	Yes	Yes	Yes	Yes
PORTUGAL	Yes	Yes	Yes	Yes	Yes	
Scotland	Yes	Yes	Yes	Yes	Yes	Yes
SPAIN	Yes	Yes	Yes	Yes	Yes	Yes
SWEDEN	Yes	Yes	Yes	Yes	Yes	Yes
Wales	Yes	Yes				

Comment: It can be concluded that the countries have in general uploaded all requested data types (green (also uploaded last year). This year there is a clear stability regarding all countries uploading almost all data again this year (see the green, uploaded this year and the previous year). Unfortunately Norway have not uploaded any data this year, but Norway uploaded landing and sample data last year (orange). There have not been any new category uploaded from any country, then there would have been yellow marked cells. Franca, Northern Ireland and Portugal have not uploaded biological variable data like age, sex, maturity etc. There is only one data type that is missing for a few countries. Unfortunately there is still not data uploads from Faroe Islands and Iceland. But the Faroe Islands are in the process of converting data to the RDBES format. The countries should have declared in the Upload log if data are missing.