WORKING GROUP ON GOVERNANCE OF THE REGIONAL DATABASE AND ESTIMATION SYSTEM (WGRDBESGOV; OUTPUTS FROM 2021 MEETING)

VOLUME 2 I ISSUE Issue 10

ICES BUSINESS REPORTS

ICES INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA
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ICES Scientific Reports

Volume 2 | Issue 10

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Recommended format for purpose of citation:

ICES. 2022. Working Group on Governance of the Regional Database and Estimation System (WGRD-BESGOV; outputs from 2021 meeting).
ICES Business Reports. 2:10. 71 pp. https://doi.org/10.17895/ices.pub.21133372

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Contents

i Executive summary

The Working Group on Governance of the Regional Database & Estimation System (WGRDBESGOV) 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 2021 and plans for the work required in 2022 and beyond. It also considers how RDB data has been used and proposes changes required to the current Data Policy.

The RDBES is planned to replace both the existing ICES InterCatch and RDB database systems and has an important part to play in increasing transparency and improving the quality of stock assessment within ICES. To this end three workshops have been planned for 2022 which will help data submitters with the transition to the new system (WKRAISE&TAF-sandeel, WKRDBES-RAISE&TAF and WKINTRO). Additionally, the Working Group on Estimation with the RDBES data model (WGRDES-EST) is continuously engaged to enable the ICES community to move forward with estimation using the RDBES data model. Following on from the RDBES test data calls issued in 2020 and 2021, a full RDBES data call is planned for 2022.

It has been a desire since the inception of the RDBES that it can be used to fulfil the FDI (Fisheries Dependent Information) data call. However, it is not a straightforward process, as (1) the FDI data call is issued by the EU and requests different variables than the RDBES, and (2) the FDI includes estimations that need to be first calculated from the RDBES data. Despite these difficulties, both the Joint Research Centre (JRC) and Member States (MS) have expressed their interest in developing this feature of the RDBES, which will reduce MS workload and enhance data consistency in the different databases. During 2022, an intersessional subgroup will look further how to develop this.

The need to ensure confidentiality in the data provided to end-users of scientific data and other interested parties, is a relevant issue that all data providers need to address when answering the RDBES Data Call. The essential problem is that at the required level of disaggregation it is common to have small groups of vessels in each segment. During 2022, an intersessional subgroup will address this, in communication with the Commission and the National Correspondents.

Recognizing that we have not yet tested the production of stock assessment inputs from RDBES data, it is necessary to revise the roadmap and prolong the planned operations of RDB and InterCatch. We have found that the constraints are different between these databases and that RDB submissions can terminate earlier than InterCatch submissions.

Anticipating a gradual adaptation of the RDBES and taking into account the need to utilize historical estimates in the InterCatch formats, it is desirable that the format for *national estimates* and the format for the *stock estimates* are compatible with the InterCatch input and output formats, respectively.

The RDB and RDBES must ensure that data can be used by the RCGs and authorized groups in ICES whilst ensuring that only permitted users have access to the confidential data – the rules relating to this have previously been defined in the RDB Data Policy. In line with discussions at the ICES Data and Information Group (DIG), the Data Policy is split into two documents: a Data License, and a Data Governance document.

It is important to remember that the ultimate success of the RDBES will rely on the effort and contributions from many people in the wider ICES/Data Collection Framework (DCF) community, from data collection to stock assessment, and not just the relatively small groups who attend

the WGRDBESGOV or Core Group meetings. The WGRDBESGOV continues to encourage these contributions and recommend some concrete actions to take to enhance further the engagement of the whole ICES/DCF community.

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	2020
Reporting year in cycle	2/3
Chairs	Els Torreele, Belgium
	Lucía Zarauz, Spain
Meeting venue and dates	30 November – 2 December 2021, online (35 participants)

1 Development status of the RDBES

This section reviews the work done on the RDBES so far and plans for the future work required. It fulfils ToR (a): *"Review the status of the development of the new commercial fisheries Regional Database & Estimation System (RDBES) and its project plan for implementation, including the funding of the outstanding development. Adjust the project plan as required. Oversee and advise on the interpretation and prioritisation of recommendations for the RDBES development. Identify user guidance and training required for RDBES users."*

1.1 The view of the European Commission on topics related to the transition from the RDB to the RDBES

DG MARE made a presentation on its views on the RDBES and to answer some of the Governance group's questions on support to MS to ensure smooth passage to the RDBES, considering the data transmission issues from this process, expectations of interoperability of the RDBES with other databases (i.e.RDBFIS for the Med & BS) and requests for data from other organisations. DG MARE also reminded its position on RDBES development and made some clarifications on financing. On data transmission issues which can arise in the transition process from RDB to RDBES, MARE clarified that it needs to supervise the implementation of legal obligations but that it is ready to work with MS (trainings, meetings or bilaterally) so that the incidence of these issues is reduced as much as possible during this period. Based on the communication from the former NC of the UK, the UK has given officially its agreement for DG MARE to access UK data until 2020 inclusive. The DG MARE request was to ensure access to UK data for DG MARE and RCG use for the relevant years in the case of a historical RDBES data call and in the context of the current RDB. This information has also been conveyed to ICES and confirmed by the Governance group later in the meeting. The ICES Data Centre clarified that the RDBES access follows the RDB access for DG MARE and RCGs and that they will join a meeting with RCG Med & BS on the development of their regional database later in December.

1.2 ICES RDBES system development summary

The reasons for developing the RDBES include:

- Provide a regional estimation system for ICES stock assessments
- Give RCGs access to detailed data in the way it was collected
- Support the collection of design-based data collections
- To increase the data quality, documentation of data, and transparency of estimations
- To facilitate the production of fisheries management advice and reports
- To increase the awareness of fisheries data collected and the overall usage of these data.

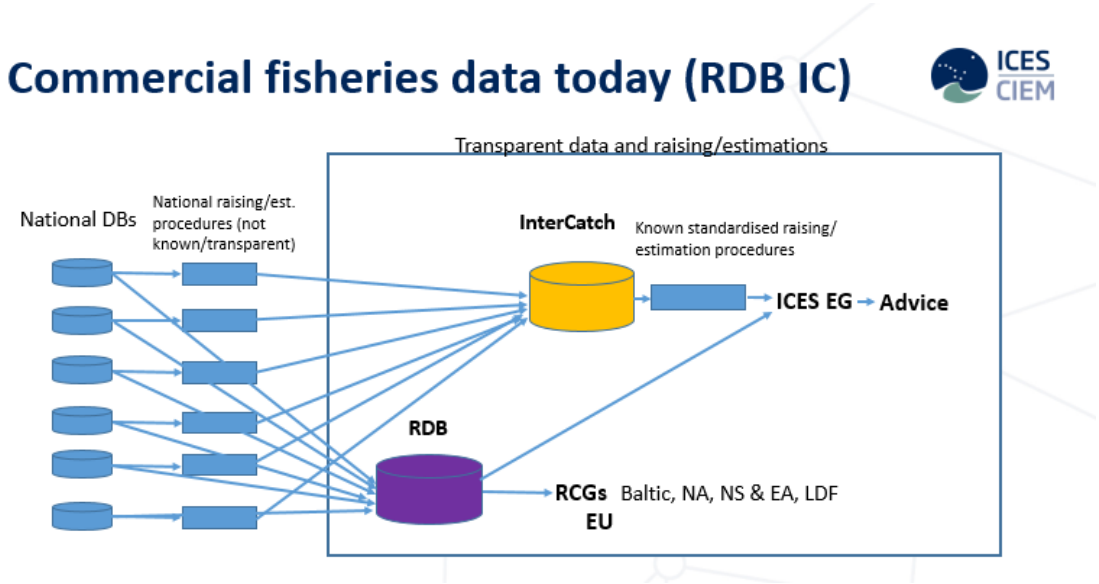

Figure 1: Commercial fisheries data flow at present, with the RDB and IC

Currently there are two types of commercial fisheries data calls;

→ the ICES combined data call where data are uploaded to InterCatch,

and

→ the data call for the RCGs Regional DataBase, RDB. Looking at the data going to InterCatch, the data is raised at national level generally without reusing or checking raising and estimation procedures and algorithms between countries. There is limited knowledge sharing and transparency regarding how the raising/estimation was implemented at each country. Once the data is in InterCatch the raising is transparent. The main users of the RDB data are currently the RCG NANSEA and the RCG Baltic, with some requests for data received by ICES expert groups (i.e. WGBFAS).

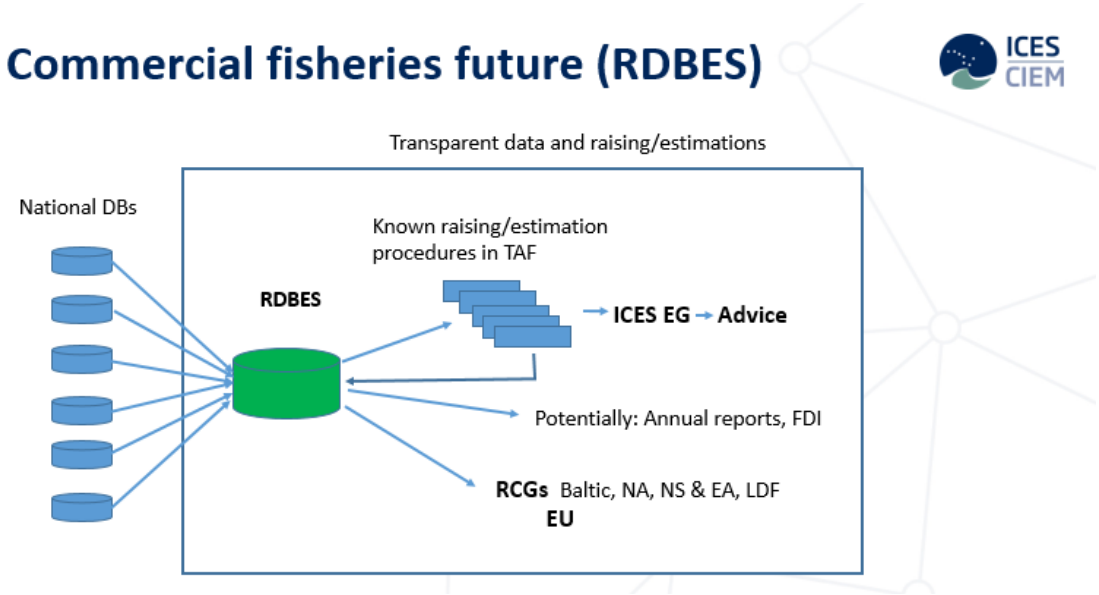

Figure 2: Commercial fisheries data flow in the future, with the RDBES

In the future, there will only be one data call replacing the two types of commercial fisheries data calls mentioned above. The RDBES data will be used as a basis for the ICES stock assessment, where estimations will be done in the Transparent Assessment Framework, TAF. The RDBES will continue to support the RCG (e.g. NANSEA and the RCG Baltic.) and different ICES WGs.

ICES Secretariat tasks

ICES Secretariat is developing the information system RDBES, which consist of a database and a web application. The following is an overview of the development tasks completed by ICES Secretariat during 2021.

- All codes and code lists/types in Vocab have been reviewed and updated (ongoing)
- Delete data for all data types incl. VD
- Update of RECO synchronisation Service
- Update of export filters
- Export tables data with ids
- Create the data delete page with data view
- Integrate the Data Export page and Data Delete page with backend library
- Logging of deleted data
- Implement queuing on imported data. Makes sure a file is imported after it has been validated even if the system temporary fails
- Export VD and SL as part of sample data export
- Update Schemas (XSD) based on setup of DataSets for RDBES in RECO – make it possible to select specific codes from code lists/types in Vocab
- Source code restructure and moving source to GIT
- Upgrade application so it can run under .net core 5
- Data view component – tree-view and tabular view (ongoing)

Below are the explanations for why it takes long time to add new information/fields to the existing RDBES. Every time a new field is added in a table or a change to an existing field many components in the system have to be updated.

- Changes to DB
- Schema validation
- Duplicate data check
- CSV to XML conversion
- Overwriting
- Upload
- Delete
- Export

The next development steps

- Logging
- Quality checks
- Data viewing of all 52 hierarchies, CL, CE, VD and SL
- Data inspections
- Upgrade NET CORE and angular
- Implement specified roles and data access
- Data exchange with Transparent Assessment Framework, TAF, both ways
- Results check
- Support the countries in uploading data

Where to find information:

- To access the RDBES:

  https://sboxrdbes.ices.dk

- Information on the data mode/format and documentation:

  https://github.com/ices-tools-dev/RDBES

- Code lists:

  https://vocab.ices.dk/

- Issues regarding getting data into the right hierarchy etc.

  https://github.com/ices-tools-dev/RDBES/issues

- Technical issues problems uploading files or missing codes etc.

  RDBsupport@ices.dk

RDBES status on 2 + 2 funding

The first two years of the "2 + 2 years" of the ICES own funding decided by Council in October 2019 have passed. The RDBES is operational and on track. Data can be uploaded, deleted and exported for commercial landing and effort and all specified upper sampling data hierarchies. The specifications from the Core Group for including bycatch and PETS have also been implemented (there are indications that more updates are needed, but this will be determined by a final test by WGBYC). The time frame for delivering such complex system have been very pressed, therefore the focus has been on implementing the specified system. That means some

of the tasks and parts of the system are incomplete, see the subsection 'The next development steps', two subsections above. The statistical estimations, which were taken out of the RDBES and moved into the Transparent Assessment Framework TAF, are still missing R scripts. However, several ICES working groups & workshops working on that task, mainly WGRDBES-EST and WKRDBES-RAISE&TAF, but also WGCATCH and WKRATIO.

Years	Task completed
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 WGRDBESGOV)

Conclusion

- The RDBES web system has been further developed during 2021 with many improvements and functionalities by ICES Data centre and it is on track
- There is funding for 2 more years at the same development level
- In 2021 ICES Secretariat sent the second Data Call for testing the RDBES with detailed data from 19 stocks and 2 incidental bycatch species and 2 sample programs. The data call was sent the 10th June 2021 with a data submission dead line the 30th Sep. 2021
- RDBES (version 1.19) was opened the 23rd Aug. 2021 for data submission

1.3 Summary on the Workshop on populating the RDBES data model (WKRDB-POP3)

Workshops on populating the RDBES data model (WKRDB-POPx)

Three workshops aimed at supporting data submitters in transforming their national data to the RDBES format have been held:

- WKRDB-POP
    - Met in Copenhagen, Feb 2019, ~30 participants
    - https://doi.org/10.17895/ices.pub.5277
- WKRDB-POP2
    - Online, June 2020, > 60 participants
    - https://doi.org/10.17895/ices.pub.7495
- WKRDB-POP3
    - Online, June 2021, > 50 participants
    - https://doi.org/10.17895/ices.pub.9375

The main aims of the workshops were:

- Describe and explain the RDBES data model to data submitters using worked examples.
- Provide practical guidance and assistance to national data submitters
- Workshops included some plenary sessions but the majority of the time was spent assisting data submitters via small group sessions
- Identify and document any problems in converting national data formats to the RDBES
- Encourage national data submitters to join the Regional Database and Estimation System testing group.

The workshops would not have been possible without extensive participation of the Core Group.

Third workshop on populating the RDBES data model (WKRDB-POP3)

Each participant worked with data from their respective countries and attempted to adapt those to the RDBES data model. Participants were also asked to indicate if they expected to be able to complete the data call by the deadline in September. Among the participating institutions 17 were answerable to the test data-call. Out of these 14 reported that they expect to fully upload the requested data, and 2 reported that they will be able to partially answer the data call.

Data model issues and documentation issues are recorded in a GitHub issue tracker and have been considered by the Core Group in regular meetings for the last few years. Some new issues were identified at the workshop and recorded in this issue tracker, namely issues #113, #114, #115, #116, and #117. Some already recorded, but yet unresolved issues resurfaced, namely issues #46 and issues in comments to #15.

At WKRDB-POP2 a testing group was established. Apart from the process of submitting the 2020 test data call, this group has not been called upon. The ICES Data Centre still anticipates that the test group may be needed in the future. Participants in WKRDB-POP3 were therefore encouraged to volunteer for the test group.

Evaluation of the workshops

Pros

- Provided a forum to explain any new features of the RDBES data model
- Data submitters had practical help in converting their data to the RDBES data model
- Countries that have participated in the workshops have found it easier to fulfill the RDBES test data calls
- The RDBES data model has been modified to take into account issues and discussions from the workshops
- Issues were raised on GitHub and then progressed by the Core Group

Cons

- Testing group has been under-utilised
- Significant input of time required from Chairs and Core group
- Some decisions on conversion of national data can be subjective

What next?

Overall the WKRDB-POP workshops have been very useful for data submitters. Do we need to provide a similar function in the future? If so, how should we do this? Given the finite resources available where can our time be best directed?

During the discussion at the meeting, it was felt that it would be necessary to provide data submitters with further support in 2022 but that continuing the POP workshops in the same format would not be feasible. Propose to write: An alternative to the POP workshops, called WKRDBES-INTRO, is proposed (see https://www.ices.dk/about-ICES/Documents/Resolutions/2021%20Resolutions/DSTSG%20EGs%20Resolutions%202021.pdf) .

1.4 Summary on the 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 first time online from 20 to 24th September 2021. The Working Group aims to:

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

The first meeting of WGRDBES involved a joint discussion of work done during previous estimation workshops (WKRDB-EST1 and 2) and the planning of activities for the 3-year cycle of the WG. In particular, new members were updated on progress thus far achieved, the estimation flow was clarified and the structure of the different data objects streamlined. Lack of familiarity of most in the group with the routines involved in package building and GitHub made it necessary to also devote discussion to the way participants can collaborate and submit their functions to icesRDBES. In the end a concrete time plan for development of the scripts and functions and their integration into the icesRDBES package was established.

The 1st and 2nd intersessional meetings (regarding data import and preparation) took place the 21th October and 25th November with progress according to plan. Also intersessionally, a "Newbie's guide to the development of a new function for icesRDBES" was drafted. The document is currently under discussion and is meant to further facilitate collaboration of both WG members but also the wider ICES community, in the building of the icesRDBES package.

Milestones	ToR	Sep	Okt	Nov	Dec	Jan	Feb	Mar	Apr	Maj	Jun	Jul	Aug	Sep	Okt	Nov	Dec	Jan	Feb	Mar	Apr	Maj	Jun	Jul	Aug	Sep	Okt	Nov	Dec
review progress and plan (WG)	d	WG												WG												WG			
package repo set-up	c		x																										
createRDBESrawObj and aux functions; migrate to package	a		x																										
createRDBESprepObj and aux functions; migrate to package	a			x																									
define createDBestim	a				x																								
createDBestim and aux functions; migrate to package	a					x																							
define overviews and reports	a						x (a,b)																						
createDBoverviews/reports and aux functions; migrate to package	a										x																		
package published (in production)	c													x												x			
improve estimation and overview/report code and options	a													x	x	x	x	x	x				x			x			
review and improve documentation (rOxygen2)	c													x												x			
evaluate TAF perspective	e													x												x			
recommend on developments of the data model	b													x												x			
discuss package mantainence	c													x			x									x			
final report																										x			
report to wgcatch	d			x												x												x	
report to wgrdbes gov	d,e				x												x												x

(a) with RCG subgroup fisheries overviews
(b) fishnCo data quality

WGRDBESGOV reviewed the progress achieved. Participation of 6 colleagues from the Mediterranean region in the group was highlighted. Then, discussion focused mostly on the challenges involved in collaborations towards package building and the integration of outputs from WGRDBES-EST in TAF. With regards to the latter, the lack of existence, to the chairs knowledge, of a complete inventory of input formats to stock assessment was highlighted. Such absence leads to some ambiguity in the final output expected from estimations and may delay development. It was suggested that the InterCatch format should receive the most attention on this first stage. Once that is produced, the discussion of the integration of that work (and other) on TAF will be facilitated.

1.5 Progress on Recreational data and RDBES.

As it occurs with the commercial fisheries data, it´s essential that marine recreational fisheries (MRF) data are also included in the RDBES. Based on the planning presented by ICES regarding the RDBES and the steps for its implementation, it was agreed under the current "2+2" RDBES funding to incorporate recreational fisheries data by 2023.

At this stage, the structure of the RDBES for commercial fisheries, with aggregated catch and effort data (CL and CE tables), raw sampling data (CS) and standardized raising procedures, would be very inefficient and subject to large potential errors. The reason for that is (i) the lack of any census data on catch and effort, and (ii) the large variety of sampling designs (including on-site and off-site methods) and raising procedures, provoked by varied nature of the recreational fishery and cultural differences in responses.

The preferred solution is a data base to store raised tonnages and numbers of fish caught and released by area and year, alongside length–frequency distributions. In addition, a description of the survey and an assessment of its quality would be needed. The full process from survey design, implementation, data archiving and quality control, data analysis and reporting must be documented and transparent for each country contributing to a regionally coordinated recreational survey program. The principal focus of such a database should be to ensure that data from national surveys of different types are properly archived and subjected to appropriate QA/QC procedures, so that they can be used by end users. In addition, potential data models for marine recreational fisheries data should be discussed by experts involved in marine recreational fisheries surveys following the approach carried out for the commercial fisheries.

With this aim in mind, it was discussed by ICES WGRFS together with RCG ISSG MRF, the steps to follow up:

- A data call will be launched as a test prepared by the WGRFS. The data call will be voluntary although an effort will be made to involved most of the experts in order to get representative examples of existing data types.
- Revise the data model proposed some years ago for MRF catch and effort data.
- The proposed data model will be evaluated.
- Make a first draft of DB structure which could be later incorporated in the RDBES.

This work will be carried out with between the WGRFS, RCG ISSG on MRF and Fishn´Co project.

In addition, during the WGRDBESGOV meeting it was highlighted t**he importance of including a MRF expert in the RDBES core group**. The WGRFS chairs will be the responsible to move forward this action to find a good candidate. However, it is essential as a first step to inform the chairs about the skills and background needed from this expert by the RDBES core group, but also the effort and dedication expend by the core group members in the different task related to the improvement of the RDBES.

1.6 Progress on Large Pelagic data & RDBES

Regarding the Large Pelagic (LP) topic, a presentation was made with the last news regarding the collaboration with the RDBES development.

In 2021 the RCG LP is still in discussion regarding the development of a LP regional database and there was no clear consensus. As a reminder, in 2020 the RCG LP proposed two recommendations during the annual meeting directly related to the RDBES. The first one is to recommend using the RDBES as a regional database for the LP and the second was to provide support to the RDBES core group by providing at least one expert of each LP fisheries. Unfortunately, these two recommendations were rejected during the 2020 decision meeting by two countries. Furthermore, during 2021 the RCG LP recommended the creation of an ISSG focused on the LP regional database development. This subgroup creation was accepted during the decision meeting associated and will allow a place to have technical discussions and to answer pending questions. This will make it possible to define exactly which are the needs of each country involved in the RCG LP and what kind of system is needed for the LP regional database. The ISSG composition is almost finished, and it should start working at the beginning of the year 2022 (table 1 below).

Table 1. ISSG LP regional database development composition

Affiliation	Expert(s) associated	Observations
Croatia	Ivana Vukov	Country involved in the RCG LP
Cyprus	Ioannis Thasitis	Country involved in the RCG LP
France	Mathieu Depetris & Pascal Cauquil	Country involved in the RCG LP
Greece	Stefanos Kavadas	Country involved in the RCG LP
Ireland	David Currie	Country involved in the RCG LP
Italy	Mauro Bertelletti	Country involved in the RCG LP
Malta	Not define yet	Country involved in the RCG LP
Portugal	Bernardo Alcoforado & Pedro Lino	Country involved in the RCG LP
Spain	Elena Consuegra	Country involved in the RCG LP
IOTC	Fabio Fiorellato & Emmanuel Chassot	End user and partner
ICCAT	Carlos Palma & Carlos Mayor	End user and partner
FDI	Willy Vanhee & Zeynep Hekim	End user and partner
RDBES	David Currie	Partner
RDBFIS	Stefanos Kavadas & Alessandro Ligas	Partner
RCG NANSEA & Baltic	Estanis Mugerza & Harry Strehlow	RCG regional database development

To conclude a review of LP data inclusion in the RDBES (related to the 2021 datacall) was made. From the 9 countries involved in the RCG LP, 2 submitted data successfully to the RDBES (Cyprus and Portugal), 1 country didn't submit any data but moved forward on the export script to generate the hierarchy tables (France), 3 countries didn't submit any data (Greece, Ireland and Spain) and 3 countries have not yet given any feedback. Furthermore, it is important to consider that even if they are no real dynamic at the RCG LP scale, there are initiative at national scale regarding the RDBES utilisation. For example, the RDBES format was selected as an exchange format between France IRD and Ifremer databases.

A comment was made regarding the lack representativeness of the LP expertise in the core group and the necessity to bring LP specifies to it. This question will be shared with the ISSG LP regional database development during the next meeting, ideally planned for the begging of the year (February or March 2022).

1.7 Progress on by-catch data & RDBES

The RDBES developments related to incidental by-catches achieved during 2021 were presented. Most of the work took place in a subgroup of the core group of RDBES development, which included members of WGBYC and other colleagues experienced with by-catch data. The Subgroup had the objective of testing the data model with regards to the specifics of by-catch sampling programmes, checking if a) the sampling data from WGBYC-related programmes fit the data model smoothly; b) the by-catch data could be interpreted once they are on the RDBES format; and c) if there were any aspects missing in the RDBES data model with regards to by-catch data particularly worth highlighting to the core-group. The group was also asked to address a few specific issues already detected by the RDBES core-group and that needed discussion with WGBYC members.

The work proceeded between 24/Mar and 12/May, involving 4 meetings of the subgroup and 2 meetings for final discussion of conclusions with the core-group. 8 participants were involved congregating a variety of experiences (incidental-bycatch sampling programmes and data, RDBES data model, national databases etc.). The group reviewed, table by table, all the variables in the CS part of the RDBES data model. The hierarchy addressed was H2, the one most used in incidental by-catch programmes. In the end, a document was elaborated containing the issues and a solution of proposals that was then evaluated in joint discussion with the core-group. Among other aspects the following changes were proposed:

→ *New sampling scheme: ResProIB [table DE]*

→ *Clarification of mandatory fields for data collected by Observers at-sea [table FT and FO]*

→ *A new "source of duration" variable, and new variables and codes for BycatchMitigationDevice, BycatchMitigationDeviceTarget (distinct from SelectionDevice) [table FO]*

→ *Clarification of SSobservationActivityType amd SSobservationType now with regards to cameras [table SS]*

→ *Clarification of SpecimenState, ReasonForNotSampling [table SA]*

Most of these issues were implemented in the RDBES data model ahead of the 30th September 2021 data call.

The subgroup is presently being proposed to continue its work. Thus far only the data structure of CS was reviewed, and similar work needs to be done with regards to CL and CE. It is also important to test the data model with real data (if not already done during the test data call) and attempt to estimate from data first uploaded and then extracted from RDBES. It will be important to further clarify the capability of the data model with regards to the specifics of data collection via cameras. It is also necessary to finalize the discussion on incorporation of a measurement of percent of operation observed for incidental by-catches, a discussion that is currently scheduled to take place with an Estimation Subgroup also existing under the core-group of development of RDBES. Finally, it would be good to finalize the documentation, elaborating further on the annex and FAQs of the current RDBES documentation that relate more directly to incidental by-catches.

1.8 Progress on Diadromous data & RDBES

There is limited progress to report regarding the diadromous data.

Presently the only foreseen use of RDBES comes from ICES WGBAST (Baltic salmon and sea trout) and only for collecting and storing the commercial catch and effort data derived from member states. These data are stored presently in InterCatch but are planned to be transferred to RDBES when necessary.

In Baltic salmon assessment, there is no need for estimation procedures of the RDBES. The datasets used for Baltic salmon stock assessment are diverse and processed in the special assessment model (Bayesian life history model). Apart from catch and effort data, the model takes data components such as parr densities, smolt counts, spawner counts, yolk sack fry mortality, sea surface temperatures, etc. These data are restored in the EG's own databases. Also estimates of recreational catches are used in the assessment, which highlights the importance of getting the recreational catch estimates to be included in the RDBES.

The RDBES data call in summer 2021 revealed that RDBES data structure is missing the variable for catch in numbers. This, however, is noticed by the RDBES core group and the shortcoming will be fixed. Following EU regulation (e.g. (EC) No 1566/2007) it is obligatory in the Baltic Sea for fishers/vessels to report salmon catch also by numbers (salmon quota is given by numbers of fish).

During the meeting a question came up regarding the storage of the catch data for eel. WGEEL chair (Jan-Dag Pohlman) and stock coordinator (Cedric Briand) informed in a separate communication, that presently the eel data are stored in PostgresSQL database hosted with a shiny app in EPTB Vilaine (University) server. The current data base is not storing only catch but also other types of eel data and a lot of effort has been devoted by the WGEEL to get all data there. WGEEL will possibly explore the documentation of the RDBES and evaluate the possibility of using RDBES for the storage of catch data. Potential use will depend on whether RBDES can account for the different format of eel catch data (e.g. reported by life stage and habitat per EMU).

Implementation of eel data to RDBES has been discussed with the ICES data centre and so far, the solution is to provide a copy of the database to ICES. Using RDBES for most of eel data types has not been feasible so far. WGEEL data experts and ICES data centre has concluded that the required changes for other than catch and effort data in the RDBES data structure are likely not feasible. Hosting the WGEEL database in line with ICES data storage infrastructure has been a frequent recommendation of WGEEL to the data centre though.

After all, WGEEL indicated that they will explore the possibility of using RDBES estimation processes with relevant eel data in 2022.

When it comes to expert groups for other species and regions, there is no need for RDBES in the foreseeable future. The data that is used in these assessments differ a lot from other, regular ICES stock assessments and consequently probably make it unfeasible to comply with RDBES structure.

1.9 Progress on Long Distance Fisheries data

In line with the continued 2015 RCG LDF recommendation to address future data calls to all non-landlocked MS, the 2021 data call was sent to all National Correspondents of these MS. Most MS responded, only three inactive MS didn't respond. One MS responded that the data was considered as confidential. Based on the RDB data and based on the work done by intersessional RCG subgroup on fisheries and sampling overviews the RCG LDF produced standardized annual overview of the fisheries in the respective region with graphs and maps, to get the most information out of the data possible.

Some tweaking of the overviews might be required in the future, to address the RCG needs. Currently the overviews are very detailed and some tailor-made solutions may support

digestion of all the information. The RCG workload was reduced as a new script was written to prepare the RCG LDF standard tables.

To make the overviews as useful as possible in the future, it is extremely important that the countries upload their data to the Regional Database. All the countries should include the information on the Subpolygon in the data provided as this will allow to carry out more detailed spatial analysis.

During the upload, some issues in relation to reference lists were encountered and problems with metier definitions were detected. E.g. polyvalent fishing trips can't be uploaded now as RDB only accepts one metier per trip. In some cases, ports, area and species codes were missing in the reference list, thus data couldn't be uploaded for these entries. Some issues were solved interactively with ICES during the data uploads. Other omissions were postponed until later notice. RCG LDF issued a recommendation to ICES to update the reference lists based on the lists provided by the RCG.

RCG LDF noted that it is currently impossible to delete/overwrite catch data at area level. As a result, updates to catch data overwrites earlier data submissions, thus risking that other national data is deleted.

All requested developments for the RDB will be taken in by the Core group in the further development of the RDBES.

1.10 RDBES Data Call

1.10.1 Summary of the results of the RDBES Data Call

The WGRDBESGOV has identify 19 test stocks, 2 incidental bycatch species and an incidental bycatch program for the data call sent in 2021. The following is a general overview, in relation to the previous data call sent in 2020, of the species and programs requested in the 2021 data call:

- 11 stocks from the 2020 data call
- 4 herring stock in the Baltic
- 4 *nephrops* stocks.
- 2 incidental bycatch species and an incidental bycatch program. Because the bycatch needed updates to the RDBES data model this spring, it is relevant to test data for the bycatch.
- Data from 'Small Pelagic in the Baltic' pilot program

ICES Secretariat send the RDBES data call for the 19 stocks, two species and two sampling programs. Data was requested for the years 2018-2020. The following is an overview of the specific stocks, species and programs requested in the 2021 data call:

- spr.27.22-32, cod.27.21, whb.27.1-91214, yellowfin tuna, sol.27.7fg, mur.27.67a-ce-k89a, mac.27.nea, mon.27.78abd, mon.27.8c9a, ank.27.78abd, ank.27.8c9a
- her.27.20-24, her.27.25-2932, her.27.28, her.27.3031
- nep.fu.5, nep.fu.33, nep.fu.2021, nep.fu.2829
- Harbour porpoise (*Phocoena phocoena*), Northern gannet (*Morus bassanus*) and an incidental bycatch program
- Data from 'Small Pelagic in the Baltic' pilot program

Data call was sent 10th June, **deadline** was the **30th September** 2021. The RDBES web site was opened the 23rd August 2021

The following are overviews of the countries data uploads in the data call 2021: Landings, discards, incidental bycatch, biological sample and effort data from 2018-2020 are requested for testing the RDBES.

Landings - number of species

Table 2. Number of species in landings (CL) by country and year

Country\Year	2018	2019	2020	Grand Total
BELGIUM	71	71	71	213
CYPRUS			10	10
Denmark	111	110	121	342
England	151	150	145	446
ESTONIA	35	36	34	105
FINLAND	20	20	20	60
FRANCE	215	216	220	651
GERMANY	43	43	104	190
GUERNSEY	27	34	29	90
IRELAND	130	132	114	376
ISLE OF MAN	20	33	41	94
JERSEY	39	36	28	103
LATVIA	31	33	31	95
LITHUANIA	30	32	35	97
NETHERLANDS	86	92	93	271
Northern Ireland	72	66	64	202
NORWAY			2	2
POLAND	60	63	57	180
PORTUGAL	232	223	219	674
Scotland	126	127	117	370
SPAIN	275	278	277	830
SWEDEN	88	98	99	285
UNITED KINGDOM	8	9	16	33
Wales	66	70	71	207
Grand Total	1936	1972	2018	5926

Comment: In general, there is a good upload of landings by species, Norway is low in numbers. The following countries have not uploaded landings data: Faroe Islands, Iceland and Russia.

Landings - number of records

Table 3. Number of records in landings (CL) by country and year

Country\Year	2018	2019	2020	Grand Total
BELGIUM	38641	40312	40341	119294
CYPRUS			226	226
Denmark	534100	527782	501148	1563030
England	144209	148300	130624	423133
ESTONIA	12121	10889	11664	34674
FINLAND	14938	15189	14728	44855
FRANCE	745989	737673	678960	2162622
GERMANY	11752	13503	29960	55215
GUERNSEY	313	445	335	1093
IRELAND	56788	57854	43144	157786
ISLE OF MAN	864	940	1172	2976
JERSEY	442	408	204	1054
LATVIA	3620	3441	3626	10687
LITHUANIA	1907	1530	1606	5043
NETHERLANDS	43232	55144	54151	152527
Northern Ireland	11237	11452	8473	31162
NORWAY			1185	1185
POLAND	12880	13510	9957	36347
PORTUGAL	86783	91048	88813	266644
Scotland	122557	127046	123409	373012
SPAIN	180403	396093	392810	969306
SWEDEN	46241	89786	41406	177433
UNITED KINGDOM	36	29	48	113
Wales	5098	5086	5228	15412
Grand Total	2074151	2347460	2183218	6604829

Comment: In general, there is a good upload of landing data records. France, Denmark and Spain have uploaded a lot of records. Norway is low in numbers. The following countries have not uploaded landings data: Faroe Islands, Iceland and Russia.

Effort - numbers of metiers

Table 4. Number of metiers in effort (CE) by country and year

Country\Year	2018	2019	2020	Grand Total
BELGIUM	13	14	14	41
CYPRUS			1	1
Denmark	114	131	123	368
England	181	183	182	546
ESTONIA	10	9	9	28
FINLAND	15	15	15	45
FRANCE	326	325	308	959
GERMANY	40	41	75	156
GUERNSEY	10	11	8	29
IRELAND	26	28	26	80
ISLE OF MAN	10	14	19	43
JERSEY	3	5	4	12
LATVIA	15	16	17	48
LITHUANIA	21	26	24	71
NETHERLANDS	39	43	44	126
Northern Ireland	38	31	39	108
NORWAY			11	11
POLAND	30	34	37	101
PORTUGAL	8	7	5	20
Scotland	102	116	115	333
SPAIN	38	40	40	118
SWEDEN	83	84	89	256
UNITED KINGDOM	4	6	5	15
Wales	36	41	34	111
Grand Total	1162	1220	1244	3626

Comment: In general, there is a good upload of effort data by metiers (fishing gear specified to metier level 6). France, England, Denmark and Scotland have uploaded a lot of records. Norway is low in numbers. The following countries have not uploaded effort data: Faroe Islands, Iceland and Russia.

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

Table 5. Number records in Sample Details (SD) by hierarchies over the three year; 2018-2020

Country\Hierarchy	1	2	3	5	6	7	8	10	13	Grand Total
BELGIUM	3									3
CYPRUS								2		2
Denmark	12	3								15
ESTONIA			1				12			13
FINLAND	48									48
FRANCE	36									36
GERMANY	1				6					7
IRELAND	16			40						56
LATVIA	13									13
LITHUANIA							8			8
NETHERLANDS	3									3
Northern Ireland			3	3						6
NORWAY									2	2
POLAND	17									17
PORTUGAL			6	6						12
SPAIN	15		3	54		253				325
SWEDEN						376				376
UNITED KINGDOM	12			12						24
Grand Total	176	3	13	115	6	629	20	2	2	966

Comment: It is clear to see that hierarchy 1 is used by most countries, then hierarchy 5 and 4. It is also clear to see that Spain and Sweden have uploaded a lot of sample detail records for hierarchy 7. Hierarchy 4, 9, 11 and 12 are not used at all by any country. The following countries have not uploaded sample data: England, Faroe Islands, Iceland, Russia and Scotland.

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

Table 6. Number species in Sample (SA) by hierarchies over the three year; 2018-2020

Country\hierarchy	1	3	5	6	7	8	10	13	Grand Total
BELGIUM	9								9
CYPRUS							8		8
Denmark	346								346
ESTONIA		2				6			8
FINLAND	98								98
FRANCE	724								724
GERMANY	114			17					131
IRELAND	290		88						378
LATVIA	66								66
LITHUANIA						3			3
NETHERLANDS	3								3
Northern Ireland		209	32						241
NORWAY								2	2
POLAND	144								144
PORTUGAL		328	573						901
SPAIN	651	183	428		50				1312
SWEDEN					9				9
UNITED KINGDOM	276		3						279
Grand Total	2721	722	1124	17	59	9	8	2	4662

Comment: There is a large difference in the number of species the countries have uploaded. In general, the countries have uploaded the same number of species per year for the years 2018-2020, that cannot be seen by this table.

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

Table 7. Number records in Frequency Measure (FM) by hierarchies over the years 2018-2020. The Frequency Measure table most often contain the number at each length class, potentially the table could also contain weight class.

Country\hierarchy	1	3	5	6	8	Grand Total
BELGIUM	45334					45334
FINLAND	12477					12477
FRANCE	573397					573397
GERMANY	29883			2225		32108
IRELAND	186105		84744			270849
LATVIA	6688					6688
LITHUANIA					457	457
Northern Ireland		179133	1451			180584
POLAND	17675					17675
PORTUGAL		6024	172998			179022
SPAIN	159087	62969	249360			471416
UNITED KINGDOM	271359		1526			272885
Grand Total	1302005	248126	510079	2225	457	2062892

Comment: Data for the Frequency Measure (FM) (typically length class) is uploaded by some countries, but not by all countries.

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

Number records in Biological Measurement (BV) by hierarchies over the years 2018-2020. The Biological Measurement table contain the measured value for any biological measured parameter for the individual sampled fish, e.g. age, length, weight, sex, maturity etc.

Country\hierarchy	1	5	6	8	Grand Total
GERMANY	213238		35713		248951
IRELAND		416006			416006
LATVIA	121204				121204
LITHUANIA				13494	13494
POLAND	87089				87089
UNITED KINGDOM	5917	54			5971
Grand Total	427448	416060	35713	13494	892715

Comment: Data for Biological Measurement (BV) under Frequency Measure (FM) is uploaded by some countries but 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

Table 8. Number records in Biological Measurement (BV) by hierarchies over the years 2018-2020. The Biological Measurement table contain the measured value for any biological measured parameter for the individual sampled fish, e.g. age, length, weight, sex, mat

Country\hierarchy	1	3	5	7	8	10	13	Grand Total
BELGIUM	22927							22927
CYPRUS						2558		2558
ESTONIA		3145			252679			255824
FINLAND	79828							79828
IRELAND	68574		293689					362263
LATVIA	46745							46745
NETHERLANDS	7516							7516
NORWAY							18782	18782
SPAIN				211496				211496
SWEDEN				196803				196803
Grand Total	225590	3145	293689	408299	252679	2558	18782	1204742

Comment: Data for Biological Measurement (BV) directly under the Sample (SA) data are uploaded by more countries, than under Frequency Measure, see above.

Samples data – number species in Sample (SA)

Table 9. Number of records for each data call requested species. There can be more species uploaded 'Samples data – number species in Sample (SA) in 2020 by hierarchies.

Country\species	Clupea harengus	Gadus morhua	Lophius budegassa	Lophius piscatorius	Micromesistius poutassou	Morus bassanus	Mullus surmuletus	Nephrops norvegicus	Phocoena phocoena	Scomber scombrus	Solea solea	Sprattus sprattus	Grand Total
BELGIUM			308	1833							2812		4953
Denmark	303	2796	1	1454	170		25	2640		337	426	171	8323
ESTONIA	231											250	481
FINLAND	9510	3										1639	11152
FRANCE	184	1107	3253	4411	566	2	2546	2381	2	2535	5173	91	22251
GERMANY	148	324		78	26		1	3		58	12	69	719
IRELAND	483	1795	1403	2094	676		55	3219		602	931	113	11371
LATVIA	210	46										88	344
LITHUANIA	15											8	23
NETHERLANDS								570		439			1009
Northern Ireland	643	969		1314	56		9	4964		205	430	339	8929
NORWAY					84					43			127
POLAND	209	448		2						12		162	833
PORTUGAL			870	414	414		1657	796		1240	3240		8631
SPAIN		160	3315	2975	1948		1616	532		1946	1098		13590
SWEDEN	371	94										165	630
UNITED KING-DOM	243	1095	1244	2955	187		974	937		520	2605	140	10900
Grand Total	12550	8837	10394	17530	4127	2	6883	16042	2	7937	16727	3235	104266

Comment: Unfortunately, only France have uploaded the two bycatch species harbour porpoise (*Phocoena phocoena*) and Northern Gannet (*Morus bassanus*).

The combined overview of uploaded data by countries

Country\Data type	Landing	Effort	Sample Details	Sample	Frequency Measure	Biological Variable
BELGIUM	Yes	Yes	Yes	Yes	Yes	Yes
Cyprus	Yes	Yes	Yes	Yes		Yes
DENMARK	Yes	Yes	Yes	Yes		
England	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
Northern Ireland	Yes	Yes	Yes	Yes	Yes	
NORWAY	Yes	Yes	Yes	Yes		Yes
POLAND	Yes	Yes	Yes	Yes	Yes	Yes
PORTUGAL	Yes	Yes	Yes	Yes	Yes	
Russia						
Scotland	Yes	Yes				
SPAIN	Yes	Yes	Yes	Yes	Yes	Yes
SWEDEN	Yes	Yes	Yes	Yes		Yes
UK (England and Wales)	Yes	Yes	Yes	Yes	Yes	Yes
Wales	Yes	Yes				

Comment: All countries have uploaded data to the RDBES, except Faroe Islands, Iceland and Russia. Some countries har not uploaded all types of data

1.10.2 Analysis of the feedback, follow-up and how to proceed

During 2021, a first RDBES test data call was issued. In order to improve the data call, and to support the countries in their needs to progress with this RDBES data call, a questionnaire about the data call was sent to the data providers and the national correspondents (Annex 3). In total, 19 responses were received with most respondents being scientific staff (ca. 80%)

An overview of the responses is given below, a full overview of the responses is given in annex 4.

- The data call specification was easy to understand for around 58%. Although there is room for improvement, 80% of the respondents were able to answer the data call within the deadline.

- The data call requested CL & CE files (landings and effort) and CS files (sampling) where respectively 68% and 80% was supplied. However, MS struggled more to compile the CS files rather than the CL (landings) files. Some issues come from the misunderstanding of the data format specification. Issues like these are indicating that the WKRDB-POP workshop needs to be continued.

There is a clear need expressed to have more support for the experts to handle the data.call, i.e. for issues such as the format specification, hierarchies to choose, etc. **WGRDBESGOV recommends to set up a training for the experts, where they can come with their own data and have support from RDBES experts (core group).** ToRs for such a training workshop – WKRDBES-INTRO – was submitted to ICES.

- From the responses it can be concluded that in the majority of countries data submitters are depending on other experts responsible for different types of data.
- As the CL and CE do not differ much from the old RDB format, the coverage is much lower than expected. This may be explained because not all countries submit data to the RCG data call i.e. Norway, Faroes, Iceland, Russia, etc. .
- Preparing sampling data involves more changes in the national databases. Data on PETS and biological sampling were uploaded to a smaller extent than landings and effort data.
- RDBES national overviews available on a GitHub repository (github.com/ices-tools-dev/RDBES/QC-scripts/NationalOverviews) can be used to check for obvious mistakes. **Upload logs are needed to check the coverage of the data and identify the issues.**
- The most popular support channel is writing an email to rdbsupport@ices.dk. Users have been using all available support channels, including: GitHub, RDBES Core Group, colleagues.
- Some respondents are concerned about records with less than 3 vessels. Clear guidance and rules of handling the data by end users have to be prepared. One of the options is to add a new field with confidentiality status. End users have to make sure that in such cases data is properly aggregated before it is published. As the confidentiality is a crucial topic to solve, an intersessional subgroup is established to look further into how to solve the different confidentiality issues and to achieve a consistent approach over all countries.
- Quality checks as available in RDBES is seen as very useful and need to be maintained although it meant that not all countries were able to upload all data. The documentation of the data model is clear and complete, however further support is needed to ensure that the data uploaded includes all the information needed for mandatory fields/estimation.

1.10.3 Confidentiality and the RDBES data call

The need to ensure confidentiality in the data provided to end-users of scientific data and other interested parties, is a relevant issue that all data providers need to address when answering the RDBES Data Call.

The essential problem is that at the required level of disaggregation it is common to have small groups of vessels in each segment, and it is often difficult to propose alternative means to meet the end-user needs and ensure anonymity. In the case of fleets with few vessels (i.e. less than three), the alternative usually implies the aggregation of different metiers or vessel length classes, and this is something that end users prefer to avoid because of the impact on their analysis and in the time series. In addition, the aggregation of metiers with differences in their fishing activity, interferes in the assessment of the fishing impacts, and in the suitability of the potential management measures proposed. For example, it might show that more vessels are fishing in vulnerable areas than is actually the case in reality; or it might over/underestimate the impact of a specific metier on vulnerable species.

EU Members need to comply with on the DCF (EU 2017/1004), which in Article 17.2 states that *Member States shall ensure appropriate safeguards, in case data include information relating to identified or identifiable natural persons or legal entities. A Member State may refuse to transmit the relevant detailed and aggregated data if there is a risk of natural persons or legal entities being identified, in which case the Member State concerned shall propose alternative means to meet the needs identified by the end-users of scientific data which ensure anonymity*. Although this is an overarching regulation, EU Members have different national rules setting the details about how to manage confidential data and the national legal settings may be stricter than the European basic overarching regulation. Non-EU Members also have their own national protocols and rules to ensure confidentiality.

The RDBES Data Call questionnaire, showed that data providers are using different approaches to ensure confidentiality when answering the RDBES Data Call. Some countries are providing their complete data (even if the level of disaggregation results in a small number of vessels), on the understanding that end-users' data policy will ensure confidentiality. Other countries are removing data where there may be a conflict in anonymity, as suggested by DCF Article 17.2. Some countries have also informed that they are providing just mandatory information in the VD table, in order to minimize the possibility of identifying a particular vessel. These different criteria used in the provision of data will have an impact in the analysis performed with the data in the future.

WGRDBESGOV discussed about the best way to address this issue. During the group discussion some ideas were raised:

- There is a need to investigate the approaches used in other data calls facing this similar problem, such as the VMS data call or the Fisheries Dependent Information Data Call (FDI).
- The field indicating the number of distinct vessels, which is already included in the RDBES Data Model, gives an indicator of the sensitivity of the data provided
- There is also the possibility of including a new field 'CONFIDENTIAL' in the RDBES data model, so that data providers can tag some data as confidential, but still provide them. This is the approach followed in the FDI Data Call, as explained in section 3.5 of this report.
- The data call shall include clear guidelines encouraging MS to provide all their data, and informing them about how confidentiality will be ensured in the final output
- Upload logs are needed to keep track of the completeness of the data uploaded
- Any change in the data model will imply adjustments in the Data Licence

It was decided that this issue will be further developed intersessional by means of a subgroup initiated by the chairs.

Confidentiality related problems were also discussed at the RCG NANSEA, resulting in a recommendation (R01) to the WGRDBESGOV. This recommendation is addressed in section 2.2 of this report.

1.11 Review the roadmap and plan for the transition to an operational system - Transition to RDBES

1.11.1 Review of roadmap 2021–2024

Recognizing that we have not yet tested the production of stock assessment inputs from RDBES data, we find it necessary to revise the roadmap and prolong the planned operations of RDB and InterCatch. We have found that the constraints about when data calls for RDB and InterCatch could stop are different for the two databases. This is reflected in the revised roadmap with RDB submissions terminating earlier than InterCatch submissions.

In order to separate the task of developing technical solutions, from the actual adaptation of new technical solutions by the different institutions and working groups, we have removed activities involving "all stocks". We consider it justifiable to no longer provide the services of RDB and InterCatch for new data when all working groups and RCGs have had the opportunity to adapt to RDBES. This will require a demonstration that all the necessary outputs for some selected stocks can be produced by the RDBES (provided that we do not have indications that it cannot serve all stocks currently served by the RDB and InterCatch).

In previous years it was agreed that the RDBES will make use of the ICES Transparent Assessment Framework (TAF). The strategy of using TAF for estimation provides sufficient flexibility that estimates can utilize both data from the RDBES and data provided from other sources, so that the process of adapting to RDBES can continue even after data submission for RDB and InterCatch is finished. A further operational roll-out plan to extend the RDBES/TAF process to all stocks will need to be agreed and implemented by the ICES community – that plan will need to begin in 2024.

The revised roadmap is provided in Table 2.

Actions needed from relevant ICES WG and RCGs are included in the roadmap and will be communicated as recommendations (Section 7)

Year	RDB System	Inter-Catch	RDBES	Data calls	Estimation incl. stock coordination	ICES Secretariat	ICES Community	WGCATCH / WGQUALITY	Countries	RCGs
2022	**Status** Production: Data in/out	**Status** Production: Data in/out	**Status** Production: CE/CL Data in/out Development and testing: CS Data in/out	RDBES Data Call for all stocks 2021 data, including bycatch/PETS. (including LDF landings and effort data). Inclusion of previous years encouraged. Deadline 30th Sept. Early data call for dedicated WKRDB-Raise&TAF Sandeel (data call deadline 30th Jan) Data call by WGRFS for recreational data (year of data requested and deadline to be determined by WGRFS)	Test estimation of **selected** stocks and bycatch in TAF (WKRDB-RAISE&TAF SandEel & WKRDB-RAISE&TAF)	System maintenance and additional development	**WGRDB-EST** to decide possibilities of accommodating ratio estimators in the design-based estimation package. **WGRDB-EST** to evaluate and propose standard output formats **WKRDBESIntro**: 2+1 day WK. 1 day RDBES technicalities & basics (ICES). 2 days for supp ort by experts (may be non- consecutive days) . For countries to kick-start RDBES submissions **WKRDB-RAISE&TAF SandEel** (Spring) as a first WK (of a series) to understand how to implement the RDBES in the current national and ICES systems for a full processing of Sand Eel commercial fisheries data **WKRDB-RAISE&TAF** (autumn) to help countries with migrating estimation routines (include bycatch?) Target: species already covered under TAF. Focus on complete process from upload to estimation, **RDB Core group** Core Group to liaise with RCG ISSG to address their recommendations (SSF, MRF, PETs) Specify any further RDBES changes required.	**WGQUALITY** to describe how the RDBES fits an end-to-end ICES quality management system. **WGCATCH** to evaluate progress and provide guidelines and algorithms for general estimations (ratio/statistical/design-based). **WGCATCH** to plan WKs on post-stratification and estimation of rare by-catches **WGBYC** to check bycatch/PETS estimation/analysis	Upload data for all stocks: RDB&RDBES Migrate estimation routines to TAF using RDBES format as input and perform estimation for all stocks. Continue adapting national database procedures / data management systems to meet RDBES needs	to adapt reporting routines to the RDBES in 2022, and report back if they discover that complete submission of CL, CE and CS is not sufficient to generate the reports they have relied on the RDB for. To discuss a process identifying how the data currently available in the RDB shall be secured when once the RDB is terminated (eg. Migrating data to the RDBES, data calls), and processes needed to support this. Respond to WGRDBESGOV recommendations Request Member Stated to participate in RDBES-related workshops and RCG RDBES test group Alert Member States to the need to allocate sufficient time for RDBES tests and adaptation of their national databases SSF ISSG to discuss how to submit scientific estimates to CL/CE

Year	RDB System	Inter-Catch	RDBES		Data calls	Estimation incl. stock coordination	ICES Secretariat	ICES Community	WGCATCH / WGQUALITY	Countries	RCGs
2023	**Status:** Stay alive Data out	**Status:** Production: Data in/out	**Status:** Production: Data in/out		RDBES Data Call for all stocks 2022 data, and historic data if possible. Including Bycatch/PETS data Test recreational data submitted to RDBES (estimates)	Estimation in TAF for selected stocks based on availability and outcomes of WKRD-BRAISE&TAF	System maintenance and additional development	**WGRDB-EST** to finalize design-based estimation package. **WKRDB-RAISE&TAF (autumn)** to help countries with migrating estimation routines (include by-catch where appropriate). Target: remaining species not migrated Specify any further RDBES changes required.	WGCATCH to evaluate progress and provide guidelines and algorithms for general estimations (ratio/statistical/design-based).	Answer data call for all stocks incl. by catch in RDBES. Perform estimation for all stocks. Final adaptions national databases / data management systems to meet RDBES needs	Use RCG tools and code adapted to RDBES format Request countries to participate in RDBES-related workshops and RCG RDBES test group. Respond to WGRDBESGOV recommendations
	2024	**Status: Terminated** (if appropriate).	**Status Stay alive** Data out	**Status** Production: Data in/out	All stocks 2023 data, and historic data if possible. Include Bycatch/PETS, and recreational data	Estimation in TAF for all stocks that are in the RDBES.	System maintenance and additional development	End of RDBES development and implementation plan – beginning of operational roll-out plan.			

Detailed plan for 2022

The following table details plans for RDBES development during 2022. The focus here is in communication and linkages between different actors so some duplication exists.

Month	Data calls	ICES Secretariat	Core Group	Countries, RCGs and ICES Community	WGRDBESGOV
Jan	Dedicated data call launched for WKRDBES RAISE&TAF Sandeel.	**31/01:** Give notice of RDBES data calls that will be issued during the year. Promote WKRD-BESIntro. System development	to Review 2022 work-plan and define plan for RDBES test group to Finalize ToRs and announce plan for RDBES-related EGs (WKRDBintro, WKRDB-RAISE&TAF) Core Group to liaise with RCG ISSG to address their recommendations (SSF & MRF)	**Countries** to plan allocation of resources for RDBES-related processes such RDBES data call, RDBES EGs and RCG test group Start migrating estimation routines to TAF using RDBES format as input. It is *suggested to focus on test stocks* Continue required adaptations to national databases / data management systems to meet RDBES needs	**Mid-January:** Call WKRDB-RAISE&TAF prep-meeting. *(try to secure stock assessors, coordinators and data submitters of data call stocks and decide stocks to address in WK, define dates and chairs; Stress the importance of WKRDB RAISE&TAF next to COUNCIL, ACOM,* Articulate with *WKRDB RAISE&TAF* the selection of stock for data call if needed. Conference call RCG chairs and explain what is expected of them Steer and follow-up on RDBES roadmap implementation
Feb		System development	Core Group to Engage with WGBYC	**RCGs:** Request Member States to participate in RDBES-related workshops and RCG RDBES test group. **RCGs:** Alert Member States to the need to allocate sufficient time for RDBES tests and adaptation of their national databases	WKRDB-RAISE&TAF prep meeting (1-2 hours) Steer and follow-up on RDBES roadmap implementation
Mar		System development Issue RDB Datacall	WKRDB-RAISE&TAF: SandEel	WKRDB-RAISE&TAF: SandEel	Promote first meeting among national database managers to discuss needs and challenges related to RDBES Steer and follow-up on RDBES roadmap implementation
Apr		System development	Core Group to Finalize updates, discuss WGBYC by-catch comments, freeze model WKRDBES-Intro	WKRDBES-Intro	Steer and follow-up on RDBES roadmap implementation
May	**31/05:** RDBES Data call issued *CE&CL: all stocks (incl LDF)* *CS: All stocks and bycatch data 2019-2021; bycatch; Highlight LDF data and upload by-catch (DCF and dedicated studies).*	System development	Core Group to Finalize quality reports for CE and CL tables Core Group to Focus on estimation		Steer and follow-up on RDBES roadmap implementation

Month	Data calls	ICES Secretariat	Core Group	Countries, RCGs and ICES Community	WGRDBESGOV
Jun		System development		**RCG NANSEA and RCG Baltic**: Respond to WGRDBES-GOV recommendations **RCG LP**	Steer and follow-up on RDBES roadmap implementation Steer and follow-up on RDBES roadmap implementation Intersessional meeting (1st of June)
Jul				**RCG LDF**	Steer and follow-up on RDBES roadmap implementation
Aug		System development	Core Group to focus on estimation Discuss comments from RCG long-distance and RCG ISSG on diadromous, SSF and MRF		Steer and follow-up on RDBES roadmap implementation
Sep	Data call deadline 30/09	System development	WGRDBES-EST	**30/09:** Upload data requested in datacall **WGRDBES-EST** RCG Med&BS	Steer and follow-up on RDBES roadmap implementation Intersessional meeting 1st September
Oct		System development	WKRDB-RAISE&TAF	**WKRDB-RAISE&TAF**	
Nov		System development		**WGCATCH**	Steer and follow-up on RDBES roadmap implementation **WGRDBESGOV** meeting 28-30 November.
Dec		System development		Review progress achieved in migrating estimation routines to TAF using RDBES format as input and Adaptation of national databases / data management systems to meet RDBES needs	

1.11.2 Transition plan – from InterCatch (IC) to RDBES

The transition from RDB to RDBES depend mainly on the system being ready to compile reports to the RCGs. This requires complete submission of CL, CE and CS data in a meaningful format, but does not require the ability to estimate from CS data. We consider that this transition is facilitated by one year of overlapping operation between the RDB and the RDBES, which is reflected in the revised road map. The RCGs will thus have 2022 to adapt reporting routines to the RDBES.

The transition from InterCatch to RDBES depends on a working TAF structure being defined for archiving RDBES estimates with standardized output. Formats for standard outputs need to be defined both for *national estimates* and for *stock estimates*, that aggregate estimates from several nations. A standard output from national estimates is needed, in order to facilitate the current distribution of tasks and responsibilities between countries, and in order for the RDBES to serve as a platform for exporting data to other data calls that depend on national estimates, such as the FDI-data call. Stock estimates, such as total harvest of a stock, are necessary in order for the RDBES to provide input to the assessment working groups.

Anticipating a gradual adaptation of the RDBES and the need to utilize historical estimates in the InterCatch formats, it is desirable that the format for *national estimates* is compatible with InterCatch, in the sense that its minimum requirements can be populated from a valid InterCatch input file. As a more flexible system could specify other aggregations than InterCatch, it is probably too restrictive to require that InterCatch input files should always be possible to generate from the standard format for *national estimates*. For the same reasons, and in order to maintain compatibility with existing stock-assessment implementations, it is desirable that the format for the *stock estimates* is similarly compatible with the Intercatch output format. Figure 1 (below) illustrates the compatibility requirements for the standard formats, and how they may facilitate gradual adaptation of the RDBES.

Workshops similar to the WKRDB-RAISE&TAF that was proposed by WKRDBESGOV in 2020, could serve to define an acceptable TAF structure. This workshop was not realized in 2021 - however we consider it important for the transition from InterCatch to RDBES that such workshops are arranged and that they include participation from stock-coordinators.

All ICES meetings working with estimation from the RDBES in 2022 could evaluate and propose proposals for standard output formats, and provide input to each other.

Preparing input to assessment with current estimation systems

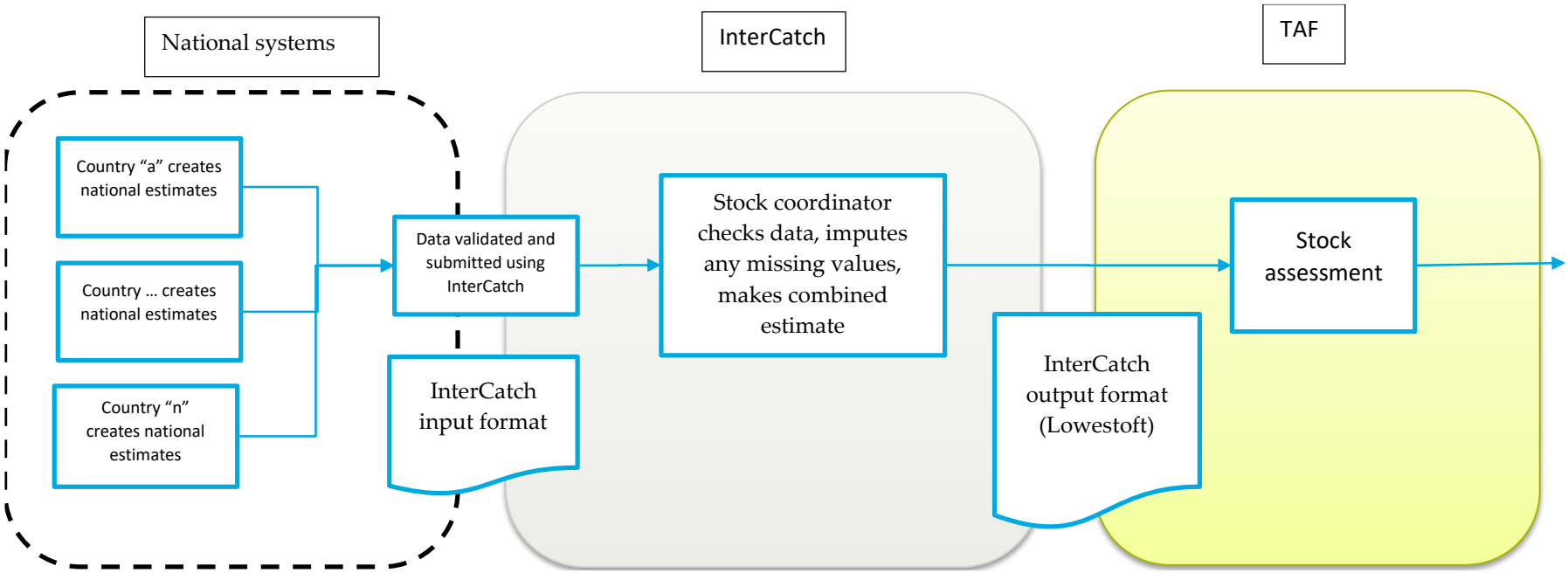

Figure 3. Current estimation flow and standard formats

Preparing input to assessment with RDBES / TAF

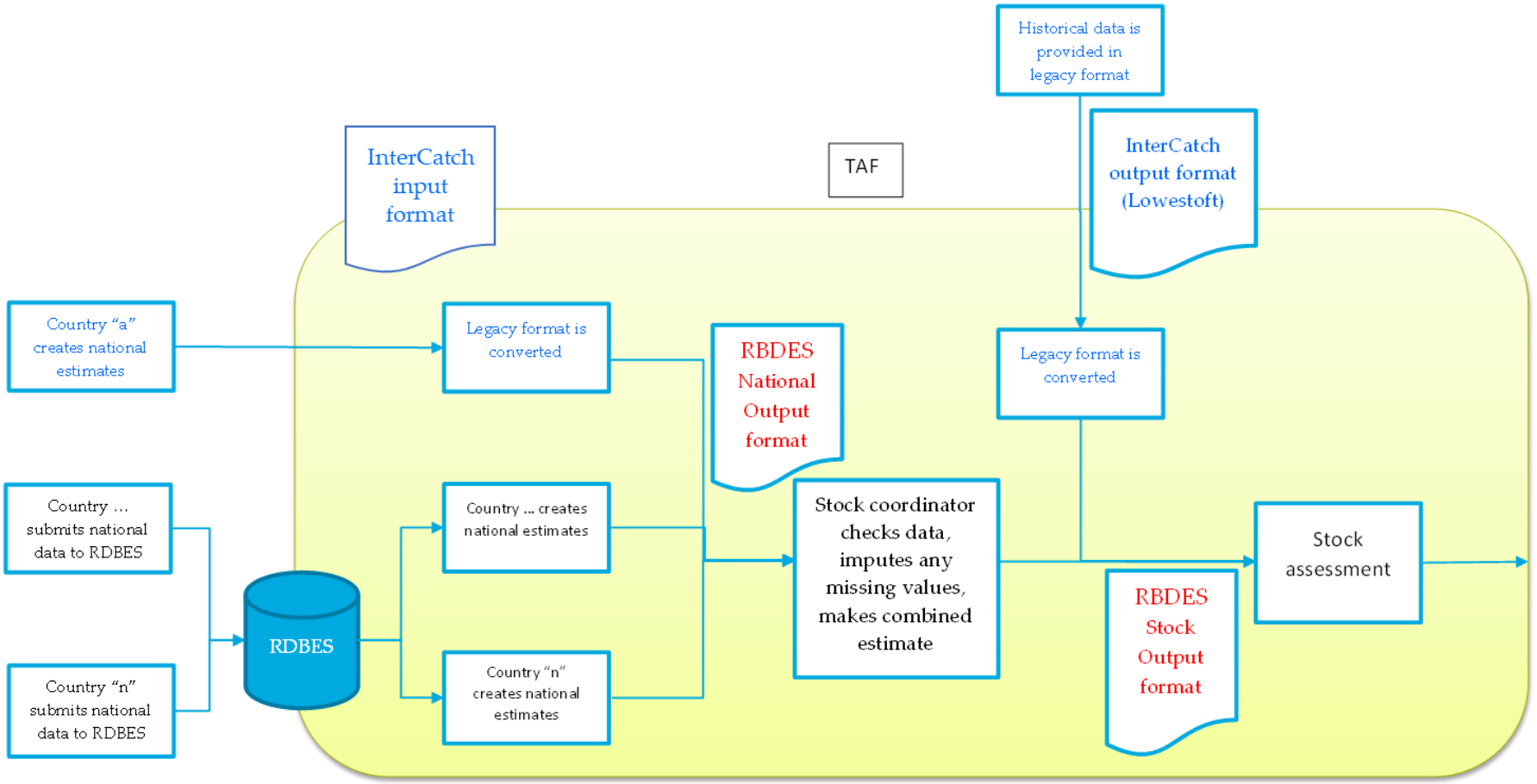

Figure 4. The compatibility requirements for the standard formats, and how they may facilitate gradual adaptation of the RDBES

2 User feedback

This section fulfils ToR (b): *"Provide a platform for user feedback to the Regional Database & Estimation System (RDBES). Appropriate actions to be taken with assigned responsibilities and resource requirements will be listed and prioritised. Ensure that any required sub-groups (including the existing "Core group") are created and function effectively whilst needed."*

2.1 RDBES Core Group summary

The Core Group specifies the RDBES

The Core Group is a subgroup working under the WGRDBESGOV, the main task is to specify what information the RDBES should contain and how the information is structured. That is done by the data model and the documentation of the data model, which describes the data model, how the RDBES should work and structure the information/data.

- The Core Group are specifying the data model of the RDBES, and it is an ongoing process. It has been discussed and specified what information is needed and how it should be structured
- We have in 2021 so far had 34 web meetings (in 2020 we had 34 web meetings)
- The Core group have had a weekly meeting every Wednesday from 13:00 CET to 14:00 CET, sometimes with an extra hour added. Sometimes with individual or group work between the meetings. It should not be a weekly meeting next year we aim at meeting every second week.
- The Core Group consist of persons with knowledge on sampling of data and/or estimation calculations
- The first half of the year the focus was to make needed updates to the data model, before the data call was send out. Because after the data call was send out the data model was not changed. Then the focus was to close issues

It is essential that the counties continue to send persons to the Core Group and priorities the work of the RDBES, as long as there are outstanding tasks and issues to discuss and agree on among the countries regarding the RDBES.

The Core Group members

The Core Group members are doing an most important and essential work in specifying the RDBES, the following persons are the members:

- Kirsten Birch Håkansson, DTU Aqua, Denmark
- Nuno Prista, SLU Aqua, Sweden
- David Currie, Marine Institute, Ireland
- Liz Clarke, Marine Scotland, Scotland
- Marta Suska, MIR, Poland
- Josefine Egekvist, DTU Aqua, Denmark
- Karolina Molla Gazi, WUR, Netherlands
- Henrik Kjems-Nielsen, ICES

Edvin Fuglebakk, IMR, started in the Core Group in January 2018 and had to stop at the end of August 2021, thanks for all his contributions and good work.

All countries can participate in the Core Group and contribute to the specifications and testing of the RDBES.

Main updates done by the Core Group

- Discussed functionality and agreed on specifications, clarified many issues asked by the countries and also from the GitHub, updated codes, include a few fields, mandatory or optional fields. (BV qualitative and quantitative fields, FM/BV presentation and state of processing can be specific and different from SA)
- Shifting to shared generic code lists, no more 'RS_xxx' vocabulary code types, in all ICES systems. This is based on the FAIR principal: **F**indable, **A**ccessible, **I**nteroperable and **R**eusable. All RDBES relevant code types will be linked in the future (on going work) so the data submitters can have a full overview of all the RDBES codes even though they are not prefixed with 'RS_xxx'.
- Bycatch data are now included, Nuno P. and the core group have worked with bycatch experts on getting bycatch data into the RDBES, and that has so far succeeded by making fields mandatory under conditions an adding new codes, bycatch experts need to make sure all the needed information are included
- New metier codes for level 5 and 6. The list of accepted metiers have been agreed and included, and it should be used across data calls ICES WGBYC, ICES VMS/Logbook and STECF FDI in 2022. The RCG ISSG Metier (chaired by Josefine E.) will continue to update, approve new metier codes and evaluate the codes.
- New selection method codes have been added
- No more hierarchies have been added, which is indicating that we may have all the once needed for now. But we also have to acknowledge that a very limited number of sampled species har been requested in the Data Call uploaded.

Tasks for the Core Group next year

- Answer issues and questions asked by the countries through the RDBES GitHub
- Bycatch final test of data from the RDBES, which can lead to further bycatch requested data or approval
- Specify use of minutes and other axillary variables
- Number sample (including none-response, more variables?) and number selected
- Each Core Group member will do a ratio estimation for a selected stock to replicate existing assessment data using landing and effort data. To identify if information is missing
- Comments from WGCATCH Small scale fisheries should be included
- Out of frame - relating it to none-response and the handling of it, and including it in the documentation
- Checks in general (e.g. for Frequency Measure and Biological Variable)
- Roles and access to data (e.g. national estimators, regional estimators)
- Include recreational fisheries data - recreational experts need to join the Core Group

Plans for the future

The plan for the future is to include:

- Recreational fisheries data at aggregated or detailed level
- Long Distance Fisheries
- Large pelagic
- Diadromous species

Discussion

One of the main topics discussed was that it is fundamental that the countries already active in the Core Group continue to commit persons to the Core Group. But more countries should take a responsibility and commit persons to participate in the Core Group and contribute with persons with knowledge on sampling of data and/or estimation calculations. It was pointed out that the larger countries like France, Spain and Germany haven't send active participants during many years. It was also discussed that the inclusion of recreational fisheries data would demand that recreational fisheries experts would join the Core Group to specify the needed information and the structure of the information preferably at a detailed level.

2.2 Recommendations from the RCGs addressed by WGRDBESGOV

1. RCG NANSEA and RCG BALTIC - Catch and Effort Overviews

WGRDBESGOV to set up a standardized way for the Upload logs as integral part of the Uploading process of the RDBES - The Upload-logs are important documents that support the understanding and reading of the census and sampling data overviews. Yet they are stand-alone Excel sheets with only a few standardized fields. Integrating them in the upload process will improve their usage and make the content available during the analysis of the data.

- This is a recurrent recommendation, and the group takes the same approach towards this recommendation as previously and confirms this is a work in progress.
  As in the past, the group agrees with this recommendation but still thinks it is a lower priority compared to the other remaining work on the RDBES development. The combination of data quality reports (such as the example shown for CE and CL data in this report) and the WGQUALTY (PGDATA) proposed "Series of ICES Sampling Protocols" documents which will describe the sampling design should be very helpful to understand the data in the RDBES - new Upload Logs should complement these. Given that the RDBES Core Group has a significant work-load, the specification of an upload log system could be a good task for the RDBES testing group. The test group was established at WKRDB-POP2, but it has not been called upon yet. However, it is foreseen that it will be needed in the future and it has been re-stablished with participants from WKRDB-POP3. The RDBES testing group will consider how an effective Upload Log system could be implemented in the RDBES so that data submitters can highlight known issues in the data.

2. RCG NANSEA and RCG BALTIC

Collate examples of the Data Sharing Agreements (DSAs) that MS have in place to allow scientific bodies to access and use official/control data for scientific purposes - There have been a number of discussions in the RCG meetings in recent years around confidentiality and the use of data derived from official sources. It is thought to be a useful task to collate examples of data sharing agreements that MS have in place for this purpose with the aim of providing useful examples for MS to draw upon when drafting new agreements.

- This recommendation is linked to the need to ensure confidentiality in the data provided to end-users of scientific data and other interested parties and is a relevant issue that all data providers need to address when answering the RDBES Data Call.
  As confidentiality is a high priority and a big need to find a solution to be acceptable by all countries, WGRDBESGOV decided to set up an intersessional subgroup for this topic.

This subgroup on Confidentiality will start from January 2022 onwards and is composed of the chairs, WG members, ICES, COM. Additionally a National Correspondent meeting is applied for end of February where a discussion with the NCs is planned.

3. RCG NANSEA and RCG BALTIC

Take into account non-ICES data calls in future developments of the RDBES (eg FDI data call) - At the moment the development of the RDBES is focused in ICES work, but the RCG finds necessary that the RDBES can also be used to answer other non-ICES data calls, such as the FDI. This is important to ensure transparency, data quality, consistency of the data, and to reduce the duplication of work.

- During the WGRDBESGOV a subgroup was dedicated to look in to aligning the RDBES and FDI data calls. The subgroup went through the catch summary table (table A) and compared with the corresponding table in the RDBES to identify the variables/columns that can be easily included in the RDBES and those requiring a more difficult solution (Annex 3 of the WGRDBESGOV Report). This work was done to start the process, and to make an example which can be followed for the next tables. Further, the subgroup suggested dedicating an intersessional group to continue to work with the other tables in the data calls identifying what information would be needed in the specific tables in order to align the data calls. From January 2022, the ISSG is operational and participants are experts from WGRDBESGOV and experts involved in the FDI data call, including the coordinator of the FDI data call, Zeynep Hekim.

4. RCG NANSEA and RCG BALTIC

Provide the RCG with a data extraction from the RDBES when the data of the 2021 data call is available

- RDBES data is available upon request, after the Data Call deadline (30th Sept). RCG can ask for the data specifying which data are needed. It should be noted that data provided in response to the data call issued in 2021 can only be used for the purposes of testing and developing the RDBES and related systems – not for the production of any type of advice.

5. RCG NANSEA and RCG BALTIC – ISSG SSF

Provide support to the ISSG when testing the RDBES data model for SSF - ISSG SSF wants to test the RDBES data models for SSF, to ensure that it can be used for SSF. For this test, The ISSG needs support from the RDBES Core Group, to ensure a correct understanding of the structure and philosophy of the RDBES, and to look for solutions for the specifies of SSF data. A similar exercise has been done to include PETs data in the RDBES with very good results.

- A plan of action is included in the Roadmap 2022-2024, see section 1.12

6. RCG NANSEA and RCG BALTIC – ISSG MRF

To support in relation to the inclusion of MRF data into the RDBES to guarantee that the transition to the RDBES will be as easy as possible - ISSG MRF wants to arrange a test data call using CSV/Excel file submission based on the already proposed recreational data format (aggregated data). The ISSG needs support from the RDBES Core Group, to ensure a correct understanding of the structure and philosophy

of the RDBES and to guarantee that the future transition to the RDBES will be as easy as possible. These recommendations need to be addressed intersessional by the WGRFS, during the period 2021–2022. Thus, the recommendation need to be forwarded to the WGRFS right after the LM

- A plan of action is included in the Roadmap 2022–2024, section 1.12

3 Summary of the use of the RDB/RDBES

This section fulfils ToR (c): *"Oversee and summarize how the existing commercial fisheries Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) are used in the EU Regional Coordination Groups (RCGs), and ICES expert groups, along with any other uses. Where possible, share any outputs with other interested groups and users."*

3.1 RDB Data Call Summary

The following are the data submission overview by countries

Baltic data submissions to the RDB by country 2021

Landings - number of species

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

Comment: All fine.

Landings - number of records

Row Labels	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Denmark	40866	35958	33827	31368	29529	27791	27726	25732	23870	22909	23236	20776
Estonia	641	3904	4010	15639	18422	20526	19586	19129	19937	18992	18922	20800
Finland	8587	8574	8602	8321	8407	15683	15414	14446	13195	11368	11504	13444
Germany	16699	14613	14511	15353	13409	14287	13469	12237	13019	11749	12505	12444
Latvia	3632	2507	2579	2454	2522	3853	3912	3945	3282	4571	4490	3276
Lithuania	187	131	374	479	507	686	856	682	621	682	583	573
Poland	8244	7773	9557	11009	11249	12010	12260	12615	12295	11715	11736	9042
Sweden	22030	17273	16485	15032	17077	15625	15871	14643	12138	10798	9501	7724

Comment: All fine.

Effort - numbers of metiers

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

Comment: All fine.

Length samples (HL) - number of species

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

Comment: All fine.

Samples with age data (CA) - number of species

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

Comment: All fine.

NA NSEA data submissions to the RDB by country 2021

Landings - number of species

Row Labels	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Belgium	55	58	57	60	55	76	75	79	75	81	80	79
Channel Islands							39	39	56	42	42	21
Denmark	82	86	81	88	99	104	98	103	112	105	110	121
England		141	141	140	135	130	129	131	158	150	150	105
Estonia	11	14	11	14	17	9	13	14	18	15	11	14
France		125	124	98			233	251	239	247	240	247
Germany		35	63	64	61	60	65	75	81	85	86	88
Ireland	120	129	121	129	127	112	110	110	108	109	110	128
Latvia	1	1	1	1	1	1	1	2	6	8	5	10
Lithuania	3	9	11	23	3	9	5	7	6	9	9	14
Netherlands	69	82	84	91	89	91	92	98	95	82	82	84
North. Ireland		61	67	67	60		62	57	64	74	69	49
Poland	9	9	9	10	10	15	17	18	19	26	27	24
Portugal	197	203	196	333	319	310	302	273	297	348	299	292
Scotland		118	115	116	108	98	101	112	127	116	114	68
Spain						102	104	110	124	123	120	146
Sweden	57	66	66	67	66	63	71	72	68	67	73	74
United Kingdom								6	3			
Wales		79	80	71	64	65	69	71	68	62	67	38

Comment: All fine, in general a drop of numbers of species uploaded for UK countries.

Landings - number of records

Row Labels	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Belgium	51949	52704	54256	55657	51787	72330	74510	74886	80442	86365	88596	85463
Channel Islands							881	921	1206	482	502	96
Denmark	162314	169781	170482	176196	165774	175124	181611	198453	189235	197867	195032	182396
England		61540	64800	61961	99902	92776	146962	152457	138020	12930	12696	9684
Estonia	153	184	170	140	278	62	310	282	357	282	199	623
France		376528	370908	295039			406989	570031	330515	465901	467537	494729
Germany		3836	16202	15137	15304	14721	16564	16809	16706	16528	18304	15552
Ireland	17031	16982	16226	17286	27758	27278	26304	27037	27043	24812	24279	48886
Latvia	22	21	21	33	26	28	13	16	84	12	91	537
Lithuania	14	27	51	131	11	236	246	28	39	59	53	74
Netherlands	34581	34571	34881	33223	29716	30125	35021	36949	26106	26072	31644	30008
North. Ireland		3850	3270	3213	5666		9107	10197	10193	2631	2349	1274
Poland	58	47	10	26	53	146	92	255	92	121	328	172
Portugal	16155	18593	18711	121035	120358	96511	99414	45278	99293	135825	134931	130559
Scotland		23184	22970	22659	38448	37319	94700	102416	112767	11975	11458	7739
Spain						135574	131879	136596	130563	137174	133904	152793
Sweden	38211	37716	29662	28313	32002	31159	34719	39436	33098	31397	31386	28059
United Kingdom								6	5			
Wales		3019	2987	2662	3568	3848	4679	4640	4452	1866	1800	885

Comment: All fine, Ireland have doubled the numbers of records, in general a drop for UK countries.

Effort - numbers of metiers

Row Labels	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Belgium	17	19	19	18	15	18	17	16	15	14	14	15
Channel Islands							10	9	13	11	14	9
Denmark	80	68	69	62	56	57	59	61	63	53	60	56
England		134	127	122	122	121	103	107	113	98	101	102
Estonia	2	2	2	2	3	3	3	3	4	3	2	4
France		52	54	53			188	145	182	69	68	67
Germany		45	35	36	31	27	27	32	37	34	37	38
Ireland	24	25	24	24	27	22	18	16	23	23	24	23
Latvia	1	1	1	1	1	1	1	1	2	4	2	3
Lithuania	2	5	8	8	3	6	5	8	4	4	4	7
Netherlands	51	52	48	49	48	41	59	48	39	31	38	38
Northern Ireland		35	31	32	28		27	30	27	28	28	34
Poland	2	1	1	1	1	2	2	1	3	4	6	4
Portugal	20	21	19	22	22	19	19	18	24	25	22	21
Scotland		79	76	76	70	71	62	71	73	70	78	75
Spain						40	39	38	37	40	39	38
Sweden	48	42	40	49	55	45	46	42	45	44	38	46
United Kingdom								1	1			
Wales		32	37	37	31	32	33	31	35	30	35	27

Comment: All fine.

Length samples (HL) - number of species

Row Labels	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Belgium	11	25	20	17	15	14	15	15	16	19	16	19
Denmark	93	94	94	92	97	95	100	93	95	117	112	94
England	138	132	129	153	132	115	131	129	128	35	28	
Estonia	1	1	1	7	15	2		7				5
France				1					267	270	269	219
Germany	72	87	70	110	107	111	100	107	133	123	131	114
Ireland	113	116	126	125	105	108	124	104	108	105	97	90
Latvia	1	1	5	1	1	1	1	1				
Lithuania			11	8	2	2	2	2	2	2	2	2
Netherlands	33	38	40	41	37	42	41	41	49	33	88	83
Northern Ireland								57		57		45
Poland	11	18	3	17	16	16	30	35	20	11	18	
Portugal	213	214	235	224	233	228	240	225	254	258	243	168
Scotland		24	26	26	144	114	130	126	109	111	119	94
Spain	27	34	24	29	28	222	221	215	221	192	195	157
Sweden	4	75	76	81	71	80	98	90	97	99	91	80
United Kingdom	54	65	58	70	60	60	57		53		28	
Wales								10		10	8	

Comment: In general, fine. Poland is missing length sample data from 2020, and most UK countries are also missing length sample data from 2020.

Samples with age data (CA) - number of species

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

Comment: In general, fine. Some UK countries are missing age sample data from 2020.

RCGs, ICES EG and others use of RDB data in 2021

- HAWG in March: CS
- RCG NANSEA BS Subgroup in April: CL, CE and CS
- WGSOCIAL in April: CL and CE
- RCG LDF in June/July: CL and CE
- WGWIDE in August: gurnards CL
- WKMOMA in September: CE
- EC Norman Graham in September: HER SPR Baltic CL

3.2 Use of RDB in FISHN'CO Project

A general overview of the links between thematic focus areas / case studies of project Fishn'CO with the RDBES was presented (by Manon Troucelier). A summary is presented below by thematic focus area / case study:

- "Marine Recreational Fisheries", "PETS bycatch" and "Small Scale Fisheries" - Goal for now is to incorporate data in RDBES.
- "Biological data quality" - Will not use data directly, but will involve preparing code to assess data quality for regional sampling based on RDBES data model, and will coordinate with WGRDBES-EST.
- Case study "Freezer trawlers" - Could not use RDB because the metier description does not allow to identify the freezer trawler fleet, so made a separate data call. Propose an additional field in the RDBES to overcome this. (The plenary suggested connecting with RCG ISSG on metiers.)
- Case study "Iberian trawl fisheries" - Working on pilot study, not expecting to need to use RDB or RDBES for this.
- Case study "Small pelagics in the Baltic" - Data will be uploaded in RDBES, presently it is uploaded in RDB but not as a common sampling program.
- "Large Pelagics" - Not clear yet if/how LP data will be included in RDBES (although some countries have submitted to the RDBES test data call). Created a new ISSG on RDB.
- "Surveys at sea" - Will use RDB data to assess landings sharing and cost sharing between MS. Aggregate landings data (by stock/species and ICES Division) is sufficient.
- "Diadromous" - Little foreseen use of RDBES, except for one species/area (and specifically for catch and effort data). RDBES test data call revealed missing field for catch in numbers which is requested for one species.

3.3 Mediterranean & Black Sea regional database

The MARE/2020/08 grant "DEVELOPMENT OF THE REGIONAL DATABASE FOR THE MEDITERRANEAN AND BLACK SEAS - SI2.839444 - *https://medbsrdb.eu/* " has financed under the European Maritime and Fisheries Fund (EMFF). This is a two year project where the European Commission, Member States, RCGs and End Users will cooperate to develop a web-based integrated Fisheries Information System driven by a friendly graphical user interface enables scientific advice and support the work of the RCGs.
During the presentation, various issues were highlighted:

- Open source packages will be used for the development of the Med&BS RDBFIS supporting data validation, data processing, input – output, data mining, graphical user interface, mapping, security;
- RDBFIS foresees to incorporate: aggregated landings and effort (transversal aggregated data), detailed biological data (biological samplings and biological parameters) of demersal and small pelagic species, scientific surveys, spatial fishing footprints (main focus on MCDA for small scale fisheries), PET samplings, recreational fisheries, alien species, Large Pelagic (possibly);
- The COST structure will be used and a set of hierarchies from the RDBES will be incorporated covering the needs of MS;
- The "core" of the project will be implemented by updating and improving the existing work done in the previous MARE/2014/19 and MARE/2016/22 regional grants, as well as the STREAMLINE grant. So, there should be avoided the risk that this work may not be

used. RDBES analysis procedures will be incorporated in the RDBFIS (in agreement with the MS & RCG);

- Further discussions are foreseen with RCG and MS to investigate and identify specific requirements aiming to finalize the database structure and define the statistical analysis procedures;
- Up to date, RDBFIS database structure contains structures for: COST, RDBES, Med&BS datacall, FDI datacall, GFCM/DCRF datacall, Surveys (MEDITS, MEDIAS), parametric tables (coding system)
- Outcomes from the meetings among Med&BS RDBFIS and Med&BS MSs: The MS underlined the importance of the grant, important that the RDBFIS will ensure common quality and analysis procedures, the needs of the MS have to be investigated and considered in the RDBFIS (the case of Cyprus to use SDEF format and RDBES hierarchies are considered useful);
- RDBFIS & RDBES compatibilities & interactions: Important discussions took place about the compatibility issues between RDBFIS & RDBES as well as the part of RDBES that can be integrated into RDBFIS considering that RDBES is a "mature" system. Nevertheless, the algorithms have to be finalized, tested and approved by ICES, channels are open for discussions among the two RDB systems;
- All needs for the database are identified and well described in the D3.1 by including the definition of a Minimum Viable Product (MVP) for the application;
- A similar structure as the WGRDBESGOV has been adopted for the RDBFIS;
- To start testing the application, data submitted to several datacalls (Med&BS, FDI, GFCM/DCRF) as well as to STREAMLINE project for a certain period will be requested;
- RDBFIS hosting, further development and maintenance: Discussions among EC, RCG, MSs and consortium are open, no decisions have been taken;
- Future communication & cooperation is foreseen with the: MARE IT experts, GFCM IT experts, ICES/RDBES experts on databases and statistical analysis, SC Med&BS RDB, RCGs, other FIS platforms from North (Fishframe RDB), Med&BS MSs, STREAMLINE, Fishn'CO, SecWeb

3.4 Fisheries Dependent Information (FDI)

The Fishery dependent information (FDI) data call is called annually since 2018 under the implementation of the EU DCF regulation. The data call includes data from 23 Member states (UK to be excluded from 2021 onwards) and covers years 2014 until 2020. The data call includes EU wide data set of fishing capacity, effort, landings and discards.

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, as (1) the FDI data call is issued by the EU and requests different variables that the RDBES, and (2) the FDI includes estimations that need to be first calculated from the RDBES data. Despite these difficulties, both the JRC and MS have expressed their interest on developing this feature of the RDBES, which will reduce MS workload and enhance data consistency in the different data bases,

One of the aspects that deserved more attention by the WGRDBESGOV was that the catch and effort summary tables and catch and effort spatial tables in the FDI can include confidential data. In these cases, the member states submit the data indicating in the column the confidentiality of certain information. The basis of this confidentiality can be that the data may relate to less than 3 vessels thus can be considered confidential. Definition of "Confidential data" according to Article 3 Regulation (EC) No 223/2009 is data which allow a statistical unit (i.e. the person, company or organisation to which the data refers) to be identified, either directly or indirectly, thereby disclosing individual information. Also, according to the regulation, the statistical unit means "a

basic observation unit, namely a natural person, a household, an economic operator and other undertakings, referred to by the data".

STECF EWG 21-10 and 21-12 reviewed methods used by Member States (MS) to define confidential cells and aimed to harmonize the criteria used to declare data as confidential among the Member States to the extent possible. As result of this exercise the EWG identified that no data are declared confidential for 9 Member states, less than 3 vessels' rule is applied and rows concerned are marked as confidential for 12 Member states and all rows regarding long-distance fishing fleets are marked as confidential for 2 Member states. Criteria applied for confidentiality by each Member state can be further found in table 3.1.2.1 in the STECF EWG 21-12 report.

The FDI data is disseminated publicly in the following address Fisheries Dependent Information - European Commission (europa.eu). The data that are aggregated across Member states are published without removing the data marked as confidential as it is thought that it will not be possible to isolate the confidential data. When publishing data at Member state level, data marked as confidential by the Member state in question should be redacted. Before disseminating data on the data dissemination site, it should be approved by the STECF plenary, and MS be informed by DG MARE. For more information on the calculations of coverage of confidential data please see STECF EWG 21-12 report.

During the WGRDBESGOV a subgroup was dedicated to look in to aligning the RDBES and FDI data calls. The subgroup went through the catch summary table (table A) and compared with the corresponding table in the RDBES to identify the variables/columns that can be easily included in the RDBES and those requiring a more difficult solution (Annex 3). This work was done to start the process, and to make an example which can be followed for the next tables. Further, the subgroup suggested dedicating an intersessional group to continue to work with the other tables in the data calls identifying what information would be needed in the specific tables in order to align the data calls.

4 Data Governance

This section fulfils ToR (d): *"Review the data governance framework of the commercial fisheries Regional Database (RDB) and Regional Database & Estimation System (RDBES)."*

4.1 Changes to Data policy and licencing

New data policy: https://doi.org/10.17895/ices.pub.8883

Revised RDBES licence to be published by end of December

Clear and equitable access to data hosted at ICES is core to the ICES Strategic, Advisory and Science Plans. The ICES Data Policy is reviewed on a 4-year basis by DIG, the last revision was in 2016. In the 2019 DIG report it was recognised that a data policy typically sets out a set of principles to guide decisions or achieve outcomes, while a license is a permission to do, use, or own some-thing. Currently the ICES Data Policy encompasses both aspects, stating the principles in operation for data from ICES, as well outlining the permissions for use and redistribution of data. In addition, over a period of time restricted access data licences have been necessary to deal with data that are controlled by legislation (EU Fisheries Control Regulation), commercially valuable (EU Data Collection Framework), or where biologically sensitive habitats may be exposed (Vulnerable Marine Ecosystems, Bird nesting sites).

A process of revision has been undertaken to address:

- → *ease of interpretation for both data providers and data users*
- → *inconsistency in terminology and definitions*
- → *machine readability*
- → *alignment with other licence arrangements in regional/international data provision*

The overall ambition of the revised policy is unchanged, as stated in the scope:

> "By maximizing the availability of data to the community at-large, ICES promotes the use of these data, thereby ensuring that their maximum value can be realised and thus contribute to an increased understanding of the marine environment."

The data policy is reduced to only aspects concerning overall principles of providing data to ICES, the quality assurance aspects and guidance on appropriate citation of data. The terminology has been aligned to the language in the licenses in this package.

Rather than create a bespoke user license for open data, ICES has now adopted the Creative Commons Attribution - International CC BY 4.0 license, which is also the license that was adopted for ICES publications in the 2020 SCICOM decision.

The existing restricted data licenses (RDBES, VMS access and VME/Birds and Seals) have all been refactored to follow the same language, definitions and headings as the CC BY license. The principles and specifics of the conditions of the license grant in each of these remain unchanged compared to the original licenses they were derived from. These have been reviewed by the respective governance groups.

Clarification from UK on data access

The UK has now transitioned out of the EU data collection system, and this entailed some ambiguity in the use of data the UK had already provided to the RDB, and the status of future data submissions. The UK clarified this position in September 2021:

→ *The EU has no right to UK data collected after 2020, and the UK will not report to the EU on data collected after 2020. The UK maintained obligations to report on data collected under the DCF until the end of 2020, therefore the EU does have right to access UK DCF data collected prior to 1st January 2021.*

→ *The UK will not respond to Regional Coordination Groups (RCG) data calls going forward.*

→ *In the future, the UK will seek to use available ICES expert groups and forums wherever possible to coordinate efforts with the EU and other third countries.*

→ *The UK will continue to contribute data to the RDBES (once properly rolled out) under the ICES data call. Until the RDBES is properly rolled out, both databases (RDB and RDBES) will be used to provide data under the ICES data call*

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

The next meeting will be held from Monday 28th November – Wednesday 30 November 2022 (13:00) with the location to be confirmed nearer the time.

The new chairs for the period 2021–2023 are Els Torreele (ILVO, Belgium) and Lucia Zarauz (AZTI, Spain).

Two intersessional meetings are scheduled from 2022 onwards: the first one on the 1st of June, the second one on the 8th of September (respectively from 10:00 – 12:30). Both meetings will take place virtually.

6 Actions

Who	What	When
Chairs WGRDBESGOV (Els)	Initiate communicate with ACOM in December meeting about roadmap and associated topics	6/12/ 2021
Edvin	Draft WKRDB-INTRO resolution.	8/12/2021
ICES/Henrik	Communicate with data providers and NCs if the Report of the RDBES data call is correct, complete and approve for publication in the report.	20/12/2022
RDBES core group	List skills and expertise needed for a Core group expert.	15 /12/ 2021
Chair WKRDBES- Raise&TAF/ Sandeel (Kirsten)	Draft and submit WKRDB-RAISE&TAF - Sandeel resolution and set dates	10/01/2022
ICES/Henrik WKRDBES-Raise&TAF- Sandeel	Draft data call for WKRDB-RAISE&TAF-Sandeel	15/01/2022 – 31/01/2022
ICES/Henrik/WKRDBES-Raise&TAF- Sandeel	Issue data call for WKRDB-RAISE&TAF-Sandeel	31/01/2022
Henrik	Draft RDBES data call	31/01/2022
Chairs WGRDBESGOV (Lucia & Els)	Kick off ISSG on alignment of data calls from RDBES & FDI	01/02/2022
Chairs WGRDBESGOV & ICES	Identify chairs , set date. .Submit WKRDBES-INTRO resolution (replaces WKRDB-POP).	2/02/2022
Chairs WGRDBESGOV	Invite NCs to discuss, comment and take action for different topics about the RDBES – incl experts for Core group (meeting end of February)	02/2022
Chairs WGRDBESGOV	Post request for experts Core group on ACOM Forum	02/2022
Chairs WGRDBESGOV (Lucia & Els)	Topic confidentiality: approach VMS data, examples how MS are dealing with this.	28/02/2022
Chairs WGRDBESGOV	Identify WKRDB-RAISE&TAF chairs post request on ACOM Firum + internal network	28/02/2022
chairs WKRDB-RAISE&TAF	Draft and submit WKRDB-RAISE&TAF ToRs resolution – set dates	31/3/2022
Chairs WGRDBESGOV	Detail presentation on roadmap and transition process to ACOM	March 2022
Henrik/ICES	Issue 2022 RDBES data call	31/5/2022
Chairs WGRDBESGOV	First Intersessional meeting	01/06/2022
Chairs WGRDBESGOV	Second Intersessional meeting	08/09/2022

Annex 1: List of participants

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Annex 2: Resolutions

Working Group on Governance of the Regional Database & Estimation System (WGRDBESGOV)

2020/FT/DSTSG01 A **Working Group on Governance of the Regional Database & Estimation System** (WGRDBESGOV), chaired by Els Torreele, Belgium and Lucia Zarauz*, Spain, will work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2020	1– 3 December	Online	Interim report by 1 Feb 2021 to DSTSG	
Year 2021	30 Novemer – 2 December	Online	Interim report by 1 Feb 2022 to DSTSG	David Currie (Ireland) and Katja Ringdahl (Sweden) ends 3-yr term as chairs; Els Torreele (Belgium) and Lucia Zarauz (Spain) are new chairs for 2021-2023; This group used to be SCRDB and turned into WGRDBESGOV from 2020 onwards. However, Katja and David were chairs of SCRDB from 2018, and therefore, their 3-year terms ends before the 3-year resolution has run all three years.
Year 2022	1 June 1 September 28–30 November	Online Online ICES HQ, Copenhagen, Denmark	Final report by 1 Feb 2023 to DSTSG	

ToR descriptors

ToR	Description	Background	Science Plan Codes	Duration	Expected Deliverables
a	Review the status of the development of the new commercial fisheries Regional Database & Estimation System (RDBES) and its project plan for implementation, including the funding of the outstanding development. Adjust the project plan as required. Oversee and advise on the interpretation and	The commercial fisheries 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 is also intended to replace the current	3.1, 3.2, 3.3	3 years	An up-to-date roadmap for the Regional Database & Estimation System (RDBES) developments describing when functionality will be available. The RDBES project plan is monitored and fulfilled. Recommendations for relevant

	prioritisation of recommendations for the RDBES development. Identify user guidance and training required for RDBES users.	ICES InterCatch system so will also function as a database and estimation system for ICES Fisheries Advice. The RDBES is therefore a key development to support the ICES advisory process.			workshops are made.
b	Provide a platform for user feedback to the Regional Database & Estimation System (RDBES). Appropriate actions to be taken with assigned responsibilities and resource requirements will be listed and prioritised. Ensure that any required sub-groups (including the existing "Core group") are created and function effectively whilst needed.	The Regional Database & Estimation System (RDBES) should develop to meet the requirements of a broad range of users and thus needs to be responsive to user feedback.	3.1, 3.2, 3.3	3 years / generic ToR	A public Regional Database & Estimation System (RDBES) GitHub site is maintained - this makes the data model available, and provides a platform for users to raise and discuss issues. Sub-groups (such as the existing "Core group") complete any required tasks (e.g. refining specifications and answering user queries) Recommendations from users are responded to.
c	Oversee and summarize how the existing commercial fisheries Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) are used in the EU Regional Coordination Groups (RCGs), and ICES expert groups, along with any other uses. Where possible, share any outputs with other interested groups and users.	The aims of the new Regional Database & Estimation System (RDBES) include increasing the awareness of fisheries data collected by the users of the RDBES and the overall usage of these data. Therefor it is important to monitor how different users are using the data.	3.1, 3.2, 3.3	3 years / generic ToR	Summaries of the existing commercial fisheries Regional Database (RDB) and the new Regional Database & Estimation System (RDBES) data calls are published annually. Summaries of the use of RDB/RDBES data are published annually.
d	Review the data governance framework of the commercial fisheries Regional Database (RDB) and Regional Database & Estimation System (RDBES)	The Regional Database & Estimation System (RDBES) is intended to host data from multiple ICES member countries and EU member states. Different users will have different permissions (depending on their needs). Data governance of the RDBES is therefore a key topic to ensure that it can	3.1, 3.2, 3.3	3 years / generic ToR	Appropriate Regional Database (RDB) and Regional Database & Estimation System (RDBES) data governance policies are agreed and implemented

	function in a secure and efficient manner.

Summary of the Work Plan

	An annual meeting will be held, as well as any inter-sessional work required, to work on the ToRs. ToR a) • Review the Regional Database & Estimation System (RDBES) project plan. • Review feedback summaries from RDBES workshops (such as WKRDB-POP2, WKRDB-EST2, WKRDB-RAISETAF) • Review results and feedback from the RDBES test data call. • Adjust the project plan as required. ToR b) • Information on the public RDBES GitHub (https://github.com/ices-tools-dev/RDBES) site is kept up-to-date • Issues raised on the GitHub site are responded to in a timely manner • The "Core group" (and any other required sub-groups) meet as required to work effectively. ToR c) • Review and summarise responses to the RDB/RDBES data calls • Determine which groups have used RDB/RDBES data during the year and, where possible, view any of their outputs based on RDB/RDBES data. • Review any feedback arising from those groups. • Ensure all data governance policies are being adhered to during data use. • Where possible, share outputs and code from the different users of RDB/RDBES data ToR d) • Review the RDB/RDBES data policy and draft amendments if required • Review the "Conditions for detailed RDBES data use" document • Make any further changes required to the RDB/RDBES data governance policies and procedures • Ensure data governance will be suitable for using RDBES data within ICES stock assessment
Year 1 - 3	

Supporting information

Priority	The activities of this group will ensure the development of the commercial fisheries Regional Database and Estimation System, RDBES, whilst still maintaining the existing Regional Database (RDB) during the development period. 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 is also intended to replace the current ICES InterCatch system so it will also function as a database and estimation system for ICES Fisheries Advice. Consequently, these activities are considered to have a high priority.

Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resources required to undertake additional activities in the framework of this group are negligible. Countries are encouraged to ensure that their national members have sufficient resources to conduct the necessary intersessional work to address the ToRs. For EU Member States, work within this WG can be funded under the Data Collection Framework (DCF)/European Maritime, Fisheries and Aquaculture Fund (EMFAF).
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	SharePoint and meeting room requirement.
Financial	No financial implications.
Linkages to 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 or groups	There is a strong thematic link with groups including WGCATCH and WGBIOP. Since the RDBES will interact with the ICES Transparent Assessment Framework (TAF) there is also a close link with WGTAFGOV. It will also be relevant to other data governance groups under the new Data Science and Technology Steering Group (DSTSG).
Linkages to other organizations	The RDBES will support the work of the EU Regional Coordination Groups (RCGs).

Annex 3: Questionnaire: feedback for RDBES Data Call

General:

1. Which is your type of participation in the DCF:
   [multiple choice: NC/Scientific]
2. Was the letter of the data call (pdf) well structured and easy to understand?
   [scale 1-5]
3. Did you (or your colleagues) had enough time between the sending of the letter and the initial deadline?
   [scale 1-5]
4. For which files did you answer the RDBES data call?
   [multiple choice: CL & CE/ CS]

CL & CE (conditional on question 4):

5. Did you find it easy or difficult to understand the meaning of the different variables?
   [scale 1-5]
6. Could you explain us the main difficulties? (please, be as concrete as possible, and detail the variables whose meaning was not clear, problems with mandatory/optional fields, problems to fit your data, doubts with general concepts, or any other issue)
   [open text]
7. Did you complete the data provision for both tables?
   [Yes/No]
8. If you didn't complete the data provision, can you tell us why?
   [open text]

CS (conditional on question 4):

9. Did you find it easy or difficult to select the hierarchy?
   [scale 1-5]
10. Did you find it easy or difficult to understand the meaning of the different tables and variables?
    [scale 1-5]
11. Could you explain us the main difficulties? (please, be as concrete as possible, and detail the variables whose meaning was not clear, problems with mandatory/optional fields, problems to fit your data, doubts with general concepts, or any other issue)
    [open text]
12. Did you complete the data provision for all data types that you collect?
    [multiple choice: sampling on shore/ sampling at sea/ bycatch sampling/ biological sampling/ self sampling/ other (which?)]
13. If you didn't complete the data provision, could you tell us why?
    [open text]

Confidentiality:

14. Did you have any problem to ensure confidentiality when answering the data call?
    [Yes/No]
15. If yes, could you explain us the problem and how did you solve it?
    [open text]

Data upload:

16. Did you find it easy or difficult to create the data upload format?
    [scale 1-5]
17. Did you find it easy or difficult to upload the data in the RDBES web?
    [scale 1-5]
18. Do you think that the in-built quality checks during the upload process are useful?
    [scale 1-5]
19. What is your general impression about the RDBES web https://sboxrdbes.ices.dk/?
    [scale 1-5]
20. Do you have any suggestion for improvement regarding these issues?
    [open text]

Support:

21. Is the RDBES Data Model documentation (word and excel file) clear and/or complete enough to help answering the data call?
    [scale 1-5]
22. Do you have any suggestion for improvement? Please be as concrete as possible.
    [open text]
23. Did you find WKRDBES-POP useful?
    [Yes/No/I didn't attend]
24. Would you (or any person in your institute) attend if the WK continues?
    [Yes/No]
25. Did you use any other channel to ask for support?
    [multiple choice: Data call email address/ Github issues/ the RDBES Core Group/ colleagues /Other channel (please specify)]
26. Do you have any suggestion for improvement regarding these issues?
    [open text]

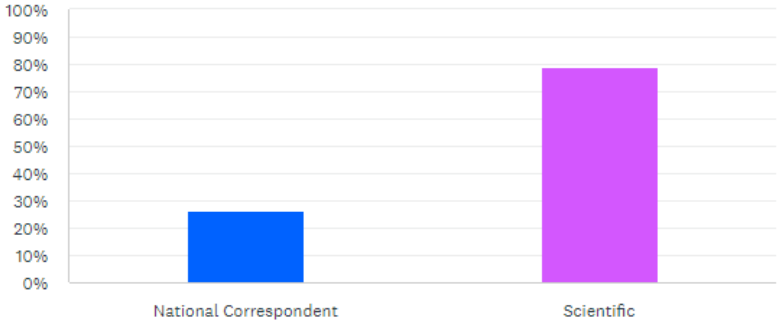
Final:

27. Here you can provide any other comment or suggestion regarding the RDBES Data Call
    [open text]
28. If you wish, you can leave here your email address. We will contact you only if we need further information in relation to your comments.
    [open text]

Annex 4: Subgroup 2: RDBES data call responses, follow-up and how to proceed: to guide this topic, there is a questionnaire circulated among NCs and the participants of the WGRDBESGOV

General information (Introduction, data call structure, deadline, summary of uploaded files)

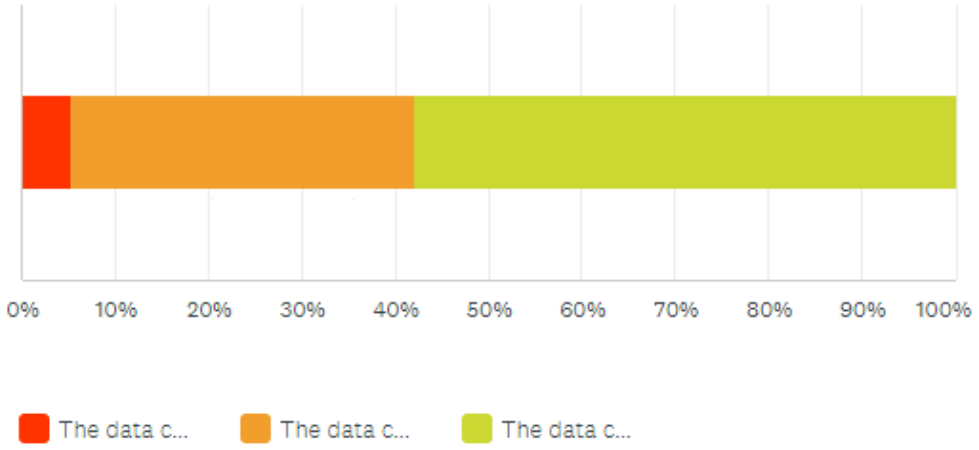
Q1. Which is your type of participation in the DCF?



ANSWER CHOICES	RESPONSES	
National Correspondent	26.32%	5
Scientific	78.95%	15
Total Respondents: 19		

A total of 19 responses were received. The majority of respondents are scientific staff.

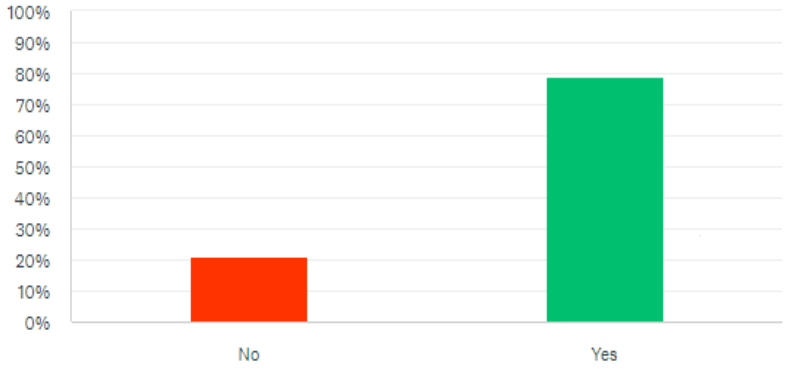
Q2. Was the letter of the data call (pdf) well-structured and easy to understand?



ANSWER CHOICES	RESPONSES	
The data call was not well structured and it was difficult to understand	5.26%	1
The data call was a bit unclear, it could be improved	36.84%	7
The data call was well structured and it was easy to understand	57.89%	11
TOTAL		19

In general, the data call specification was easy to understand for around 58%. There is room for improvement.

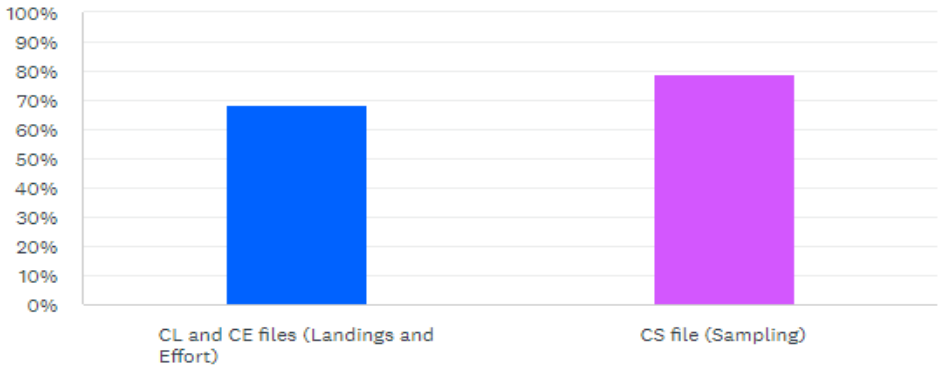
Q3. Did you (or your colleagues) have enough time between the sending of the letter and the initial deadline?



ANSWER CHOICES	RESPONSES	
No	21.05%	4
Yes	78.95%	15
TOTAL		19

Around 80% of respondents did not have problems meeting the deadline.

Q4. For which files did you answer the RDBES data call?

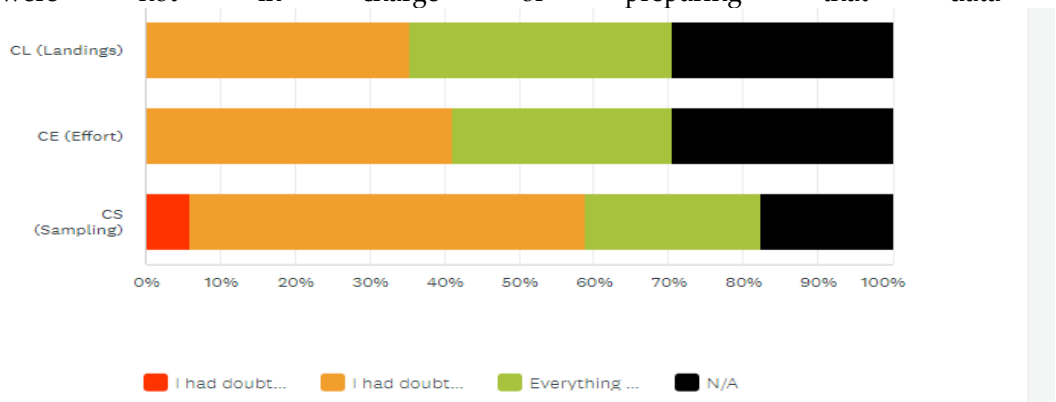


ANSWER CHOICES	RESPONSES	
CL and CE files (Landings and Effort)	68.42%	13
CS file (Sampling)	78.95%	15
Total Respondents: 19		

We have answers for all data files requested: CL, CE and CS.

CL, CE and CS files (Tables and variables, hierarchies, data types)

Q5. Did you have problems to understand the different tables and variables?(use N/A if you were not in charge of preparing that data file)



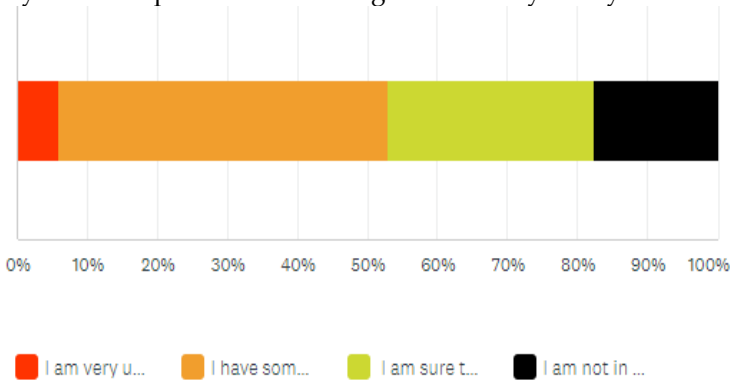
	I HAD DOUBTS WITH MOST OF THE VARIABLES	I HAD DOUBTS WITH SOME VARIABLES	EVERYTHING WAS CLEAR. I DIDN'T HAVE ANY DOUBT	N/A	TOTAL	WEIGHTED AVERAGE
CL (Landings)	0.00% 0	35.29% 6	35.29% 6	29.41% 5	17	2.50
CE (Effort)	0.00% 0	41.18% 7	29.41% 5	29.41% 5	17	2.42
CS (Sampling)	5.88% 1	52.94% 9	23.53% 4	17.65% 3	17	2.21

It looks like the CL (Landings) format was the easiest to prepare. CS (Sampling) was the most problematic.

Q6. Can you detail the main difficulties encountered? (please, be as concrete as possible: which were the variables whose meaning was not clear, the problems with mandatory/optional fields, main problems to fit your data, the doubts with general concepts, or any other issue).

The provided answers need to be compared with issues posted on GitHub. The Core Group needs to review the issues one by one. Some issues come from the misunderstanding of the data format specification. It is suggested to raise these issues at the WKRDB-POP workshop where they can be solved with the support from experts. Issues like these are indicating that the WKRDB-POP workshop needs to be continued.

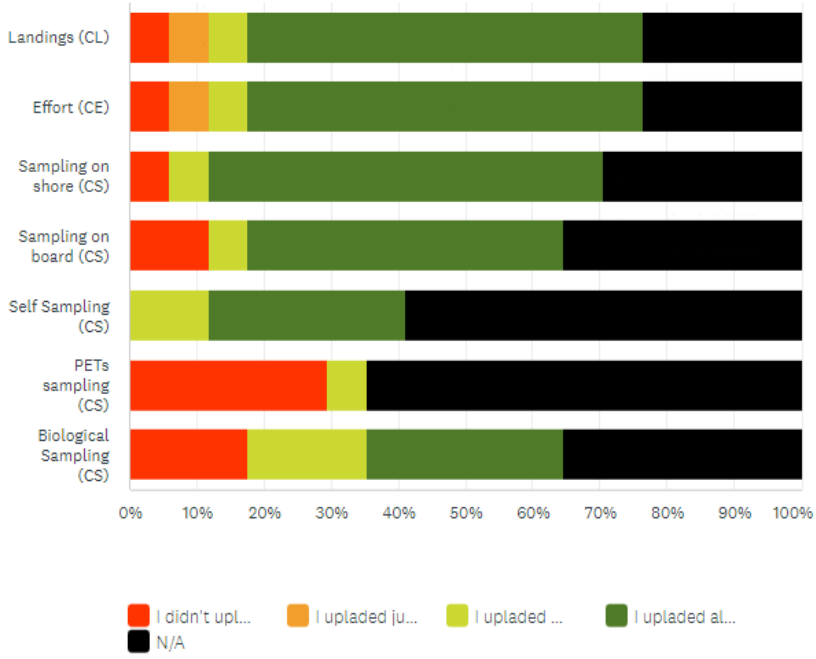
Q7. Did you have problems choosing a hierarchy for your different sampling schemes?



ANSWER CHOICES	RESPONSES	
I am very unsure with the hierarchies choosen, they are probably wrong	5.88%	1
I have some doubts, but I am quite confident that the hierarchies choosen are correct	47.06%	8
I am sure that the hierarchies choosen are correct	29.41%	5
I am not in charge of preparing CS files	17.65%	3
TOTAL		17

More than 50% of respondents have doubts about the hierarchies chosen. Choosing the correct hierarchy is crucial to populate the data model and estimation process. Such problems can be solved at WKRDB-POP.

Q8. Q9. Did you complete the data provision for the following types of data?(use N/A if you were not in charge of preparing that data file/ you don't have that type of sampling)

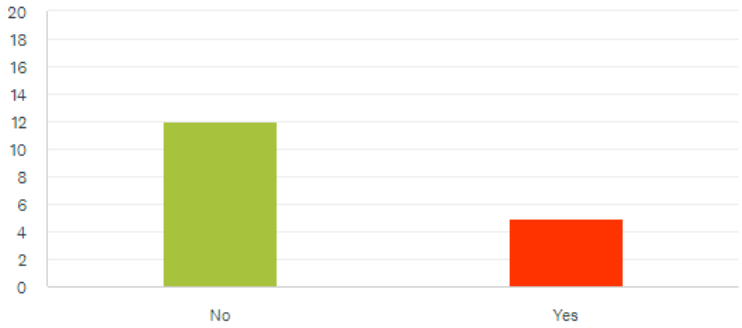


	I DIDN'T UPLOAD MY DATA	I UPLADED JUST A SMALL PART OF MY DATA	I UPLADED MOST OF MY DATA	I UPLADED ALL MY DATA	N/A	TOTAL	WEIGHTED AVERAGE
Landings (CL)	5.88% 1	5.88% 1	5.88% 1	58.82% 10	23.53% 4	17	2.69
Effort (CE)	5.88% 1	5.88% 1	5.88% 1	58.82% 10	23.53% 4	17	2.69
Sampling on shore (CS)	5.88% 1	0.00% 0	5.88% 1	58.82% 10	29.41% 5	17	2.75
Sampling on board (CS)	11.76% 2	0.00% 0	5.88% 1	47.06% 8	35.29% 6	17	2.55
Self Sampling (CS)	0.00% 0	0.00% 0	11.76% 2	29.41% 5	58.82% 10	17	2.71
PETs sampling (CS)	29.41% 5	0.00% 0	5.88% 1	0.00% 0	64.71% 11	17	1.17
Biological Sampling (CS)	17.65% 3	0.00% 0	17.65% 3	29.41% 5	35.29% 6	17	2.18

From the responses it can be concluded that in the majority of countries data submitters are depending on other experts responsible for different types of data. As the CL and CE do not differ much from the old RDB format the coverage is much lower than expected, it should be 100%. Now, around 25% are missing or incomplete. Data on PETS and biological sampling were uploaded to a smaller extent than landings and effort data. Preparing sampling data involves more changes in the national databases. RDBES national overviews available on a GitHub repository can be used to check for obvious mistakes. **Upload logs are needed to check the coverage of the data and identify the issues.**

Confidentiality (Issues)

Q10, Q11. Did you have any problem ensuring confidentiality when answering the data call?

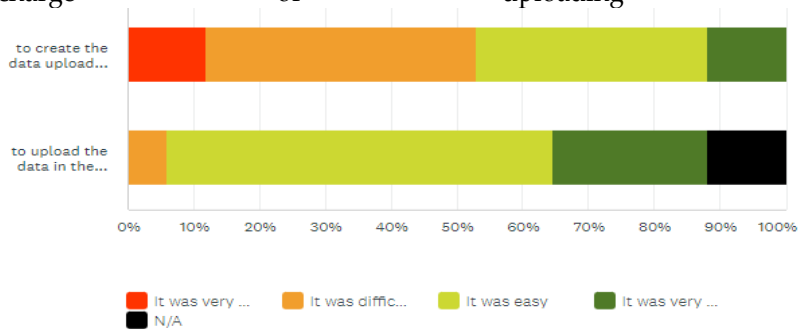


ANSWER CHOICES	RESPONSES	
No	70.59%	12
Yes	29.41%	5
TOTAL		17

Some respondents are concerned about records with less than 3 vessels. Clear guidance and rules of handling the data by end users have to be prepared. One of the options is to add a new field with confidentiality status. End users have to make sure that in such cases data is properly aggregated before it is published.

Data upload (Exchange format, uploading process, web page and quality checks)

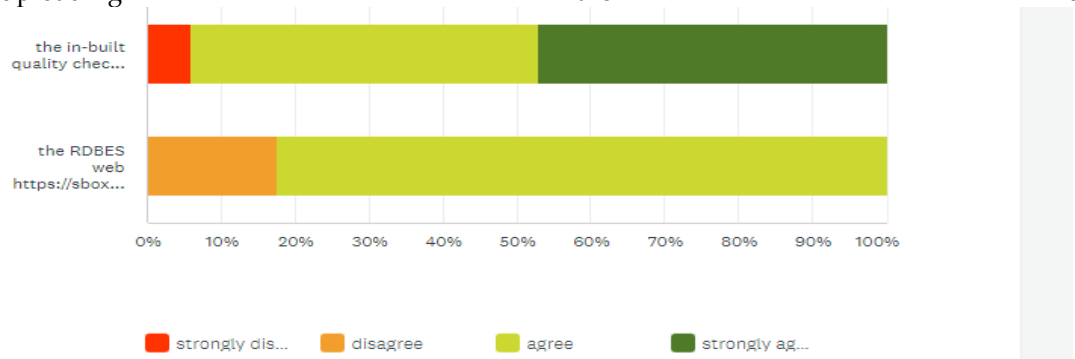
Q12. How easy or difficult was the data upload process for you? (use N/A if you were not in charge of uploading the data)



	IT WAS VERY DIFFICULT	IT WAS DIFFICULT	IT WAS EASY	IT WAS VERY EASY	N/A	TOTAL	WEIGHTED AVERAGE
to create the data upload format	11.76% 2	41.18% 7	35.29% 6	11.76% 2	0.00% 0	17	2.47
to upload the data in the RDBES web	0.00% 0	5.88% 1	58.82% 10	23.53% 4	11.76% 2	17	3.20

For over 50% of respondents the process of preparing the data format was rather difficult. The upload process via the web application was considered easy.

Q13. Do you agree or disagree with these statements? (use N/A if you were not in charge of uploading the data)



	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
the in-built quality checks during the upload process are useful	5.88% 1	0.00% 0	47.06% 8	47.06% 8	17	3.35
the RDBES web https://sboxrdbes.ices.dk/ is well structured and easy to use	0.00% 0	17.65% 3	82.35% 14	0.00% 0	17	2.82

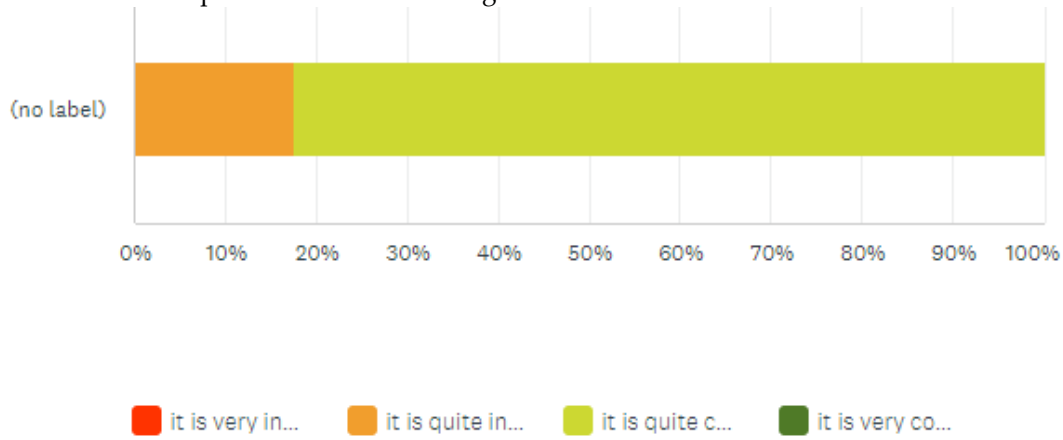
The vast majority of respondents thinks that RDBES quality checks are useful and the web page is well structured and easy to use.

Q14. Do you have any suggestions for improvement regarding the data upload and the RDB web page?

Most people are happy with the upload tool. Some minor changes were suggested; however they may influence the performance of the website.

Support (Documentation, workshop, communication channels)

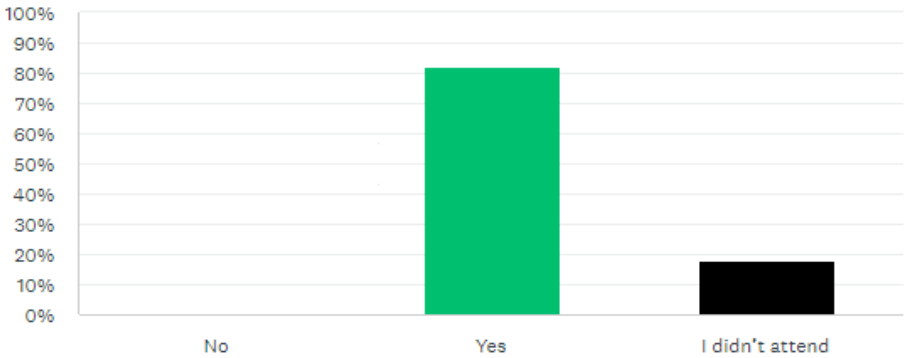
Q15. Is the RDBES Data Model documentation (word and excel file) clear and complete enough to help answering the data call?



	IT IS VERY INCOMPLETE AND/OR UNCLEAR	IT IS QUITE INCOMPLETE AND/OR UNCLEAR	IT IS QUITE COMPLETE AND CLEAR	IT IS VERY COMPLETE AND CLEAR	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	17.65% 3	82.35% 14	0.00% 0	17	2.82

Vast majority consider the data model documentation as clear and complete. It was mentioned by respondents that WKRDB-POP helps to understand the data model.

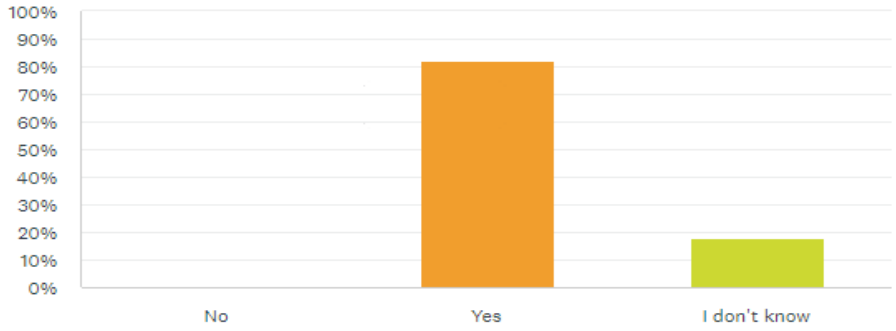
Q17. Did you find WKRDBES-POP useful?



ANSWER CHOICES	RESPONSES	
No	0.00%	0
Yes	82.35%	14
I didn't attend	17.65%	3
TOTAL		17

100% of respondents who participated in the WKRDB-POP consider it useful.

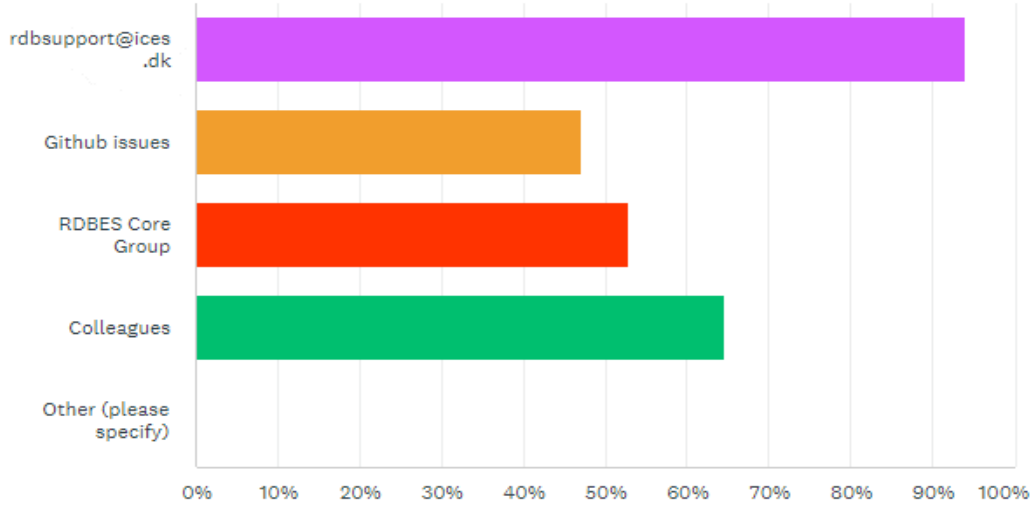
Q18. Would you (or any person in your institute) attend if the WK continues?



ANSWER CHOICES	RESPONSES	
No	0.00%	0
Yes	82.35%	14
I don't know	17.65%	3
TOTAL		17

Most people intend to participate in the future editions of WKRDP-POP.

Q19. Did you use any other channel to ask for support?



ANSWER CHOICES		RESPONSES	
rdbsupport@ices.dk		94.12%	16
Github issues		47.06%	8
RDBES Core Group		52.94%	9
Colleagues		64.71%	11
Other (please specify)	Responses	0.00%	0
Total Respondents: 17			

The most popular support channel is writing an email to rdbsupport@ices.dk. Users have been using all available support channels, including: GitHub, RDBES Core Group, Colleagues.

Final (other comments)

There was a suggestion to focus on a single or a few stocks and run the entire process, from upload to estimation.

Conclusions

Not all countries uploaded all data. The documentation of the data model is clear and complete, however further support is needed to understand it. Although the data is successfully uploaded it might not include all the exactly correct information needed for mandatory fields/estimation.

Conclusions:

- It is advised to post relevant problems as issues on GitHub and check if the problem has already been raised and solved,
- The group agrees to continue the WKRDB-POP,
- It should be highlighted that upload logs are needed to check the completeness of the data,
- Look into a potential split of the upload log into data completeness and other issues,
- There is a document from WGCATCH about the improvement of ICES Assessment data call structure which can be used as a template to improve the RDBES data call,
- WGRDBESGOV is looking into ISSG discussing and concluding on the confidentiality issues.

Annex 5: Revision of FDI Table A: Catch summary

FDI	RDBES
1. COUNTRY: According to the code list provided in Appendix 1; missing values not allowed.	Exists
2. YEAR: Four digits (e.g. 2019); missing values not allowed.	Exists
3. QUARTER: 1, 2, 3 or 4; missing values not allowed.	Exists
4. VESSEL_LENGTH: According to the code list provided in Appendix 2; 'NK' if not known.	Check the vessel length ranges are the same
5. FISHING_TECH: According to the code list provided in Appendix 3; missing values not allowed.	Have already been added only because of FDI
6. GEAR_TYPE: According to the code list provided in Appendix 4; 'NK' if not known.	Can be extracted
7. TARGET_ASSEMBLAGE: According to the code list provided in Appendix 5; 'NK' if not known.	Can be extracted
8. MESH_SIZE_RANGE: According to the code list provided in Appendix 6; 'NK' if not known.	Cannot be directly extracted from the metier, because the FDI mesh size ranges will in some cases probably not follow the mesh size ranges in the metiers in the RDBES
9. METIER: According to Appendix 7; 'NK' if not known.	Metier6
10. DOMAIN_DISCARDS[1]: Text in format specified in Appendix 8; 'NK' if not known	The FDI data is by 'DOMAIN_xxx', which is defined by the individual country, and that is an issue. E.g. the 'DOMAIN_DISCARDS' can be stratified by many parameters e.g. quarter or annually together with fishing gear etc. This makes it difficult to create one common conversion tool to create the FDI data tables for all counties
11. DOMAIN_LANDINGS[1]: (key field to link sampling tables with this Table A) Text in format specified in Appendix 8; 'NK' if not known.	The FDI data is by 'DOMAIN_xxx', which is defined by the individual country, and that is an issue. E.g. the 'DOMAIN_LANDINGS' can be stratified by many parameters e.g. quarter or annually together with fishing gear etc. This makes it difficult to create one common conversion tool to create the FDI data tables for all counties
12. SUPRA_REGION: According to the code list in Appendix 9; missing values not allowed.	Can be extracted, but there is no data for the Mediterranean and Black Sea
13. SUB_REGION: According to the code list in Appendix 9; 'NK' if not known.	Look as it is the same as in RDBES 'CLarea' e.g. 27.3.c.22
14. EEZ_INDICATOR: According to the code list in Appendix 9; 'NK' can be use only when also the sub-region is not known.	have already been added because of FDI
15. GEO_INDICATOR: According to the code list in Appendix 10; 'NK' if not known.	Not included in the RDBES CL, a new field in RBES CL is needed. (GEO_INDICATOR should not be needed in the RDBES CS sample data
16. NEP_SUB_REGION: Functional Units (FUs) according to the list in Appendix 9; 'NK' if not known or 'NA' if not applicable. This variable is asked only for *Nephrops norvegicus* catches.	This field can be found by a mapping table of the Stat. rect. and NEP_SUB_REGION, e.g. 27.6.a.FU11
17. SPECON_TECH:Specific conditions related to technical measures according to Appendix 11; 'NK' if not known or 'NA' if not applicable.	Not included in the RDBES CL, a new field is needed in RBES CL. This is a selection device, code e.g. 'GRID19'
18. DEEP: 'DEEP' or 'NA'(i.e. the trips considered as deep fishing trips, see the definition on the second page of the Annex, should be indicated with 'DEEP').	It should be possible to extract this deep-flag from a deep-sea-species list and the metier and area
19. SPECIES: According to the FAO 3-alpha code list, see Appendix 12; missing values not allowed.	If the optional CLspeciesFaoCode is not present, a mapping table is needed from Aphiald to ASFIS, since the mapping at this point is not a complete for all species (on going work at FAO, it could be a problem

20. TOTWGHTLANDG: Estimated landings in tonnes (live weight) [precision to 3 digits after the decimal], including landings below minimum conservation reference size (MCRS); missing values not allowed.	Exists
21. TOTVALLANDG: Estimated total value of the landings in euro; 'NK' if not known.	Exists
22. DISCARDS: Estimated discards in tonnes [precision to 3 digits after the decimal]; 'NK' if not known.	This is the most difficult field, as it is an estimated weight which is not uploaded in the RDBES Data Model. It has to be calculated first. In addition, the discard weight needs to be calculated by domain, and it is the country who decides how to make this calculation. Now many countries are using the same discard input for the FDI as for InterCatch. Other countries are estimating the discard in a different way. This discard estimation will have to be done in ICES TAF with the RDBES data. After the estimation in TAF the estimated discard weight has to be fetched and stored in the RDBES, so it can be exported together with the other needed data into the FDI tables.
23. CONFIDENTIAL: [1 character] Accepted values: 'A' (all), 'N' (none), 'W' (weight), 'V' (value); missing values not allowed. When the value 'W' is used, values in fields TOTWGHTLANDG and DISCARDS are considered confidential.	a new field 'CONFIDENTIAL' have to be added. The individual countries have different rules. Further discussions are needed by a larger group to reach an agreement.

* *The fields in red are those requiring a difficult solution*