

MARE/2020/08 Annex 3:

Development of the Regional Database for the Mediterranean and Black Seas

0. BACKGROUND INFORMATION

Regional Databases

A Regional Database (RDB) is a regionally coordinated database platform containing fisheries data, with the aim to enable reliable scientific advice. A RDB is a legal obligation under the Data Collection Framework¹: together with the corresponding Regional Coordination Group (RCG), the Commission, Member States and end-users are entrusted to cooperate on the creation of RDBs. The RDB should cover the fisheries of the defined region(s) and should focus on addressing the fishery management needs related to the European Union Common Fisheries Policy. It is an important tool to enable regional overviews of fishing activities, to optimise data collection and facilitate task/cost-sharing and sampling at the regional level. In this sense, the benefit of the RDB is that it increases harmonisation and transparency, and it enhances data quality. Ultimately, RDBs are expected to increase the use of DCF data.

RDBs are there to support the work of the RCGs, facilitating a better performance towards efficient management, fast response times of data processing and increase of data robustness delivered to end-users. In addition, the RDBs facilitate the work of the EU Member States by reducing the burden of multiple data submissions (for data calls) under different formats. They allow end users to calculate statistical estimates of data tailored to their needs, and help to streamline and ease the reporting of Member States on the EU data collection.

Challenges

RDBs have existed for a period of time for the Baltic Sea, the North Sea & Eastern Arctic and the North-East Atlantic, hosted by ICES. This is not yet the case in the Mediterranean and Black Seas, where DCF data of different aggregation levels are still placed in different databases, spread mainly between the JRC and the GFCM. Currently, aggregated data for stock assessment are stored at EU JRC facilities, while detailed data have been made available to the RCG Med & BS in the recent years for selected sub areas (GSAs) and target stocks through specific data calls. This data, analysed for several purposes related to the sampling evaluation, have been stored on the RCG Med & BS share point.

The establishment and implementation of a RDB in the Mediterranean and Black Seas should involve different stakeholders: the Commission, the Member States of the RCG Med & BS, the main end users of the region (STECF, GFCM, possibly ICCAT), the host of the RDB and the developer. The Member States concerned should be involved in the RDB development plan. An existing Member States' dedicated Steering Committee on the RDB² is currently working on the RDB content, the data policy and the main functionalities.

¹ Regulation (EU) 2017/1004 of 17 May 2017.

² website <https://datacollection.jrc.ec.europa.eu/regional-coordination>

1. WORK PACKAGE 1: AS-IS ANALYSIS TO DESCRIBE CURRENT SET UP AND BUSINESS NEEDS

This Work Package should aim at providing a mapping and analysis of the current situation, ongoing studies, tools and developments that are relevant for the RDB in the Mediterranean and Black Seas.

This will include the stakeholders that should be involved: RCG Med & BS, including the Steering Committee on the RDB, JRC, STECF, the future host etc. ICES should be consulted on the development of the Regional Database and Estimation System (RDBES), to allow for synergies. The chairs of the RCG North Atlantic, North Sea & Eastern Arctic and Baltic should be consulted on the Regional Database Fishframe, which is currently operational. A list of expectations of the various stakeholders (requirement specifications), the potential users (actors) and the list of actions defining the interactions between a user and the system to achieve a goal (use cases) should be described during the course of this project.

Different information sources should be considered: the inventory and analysis of the main existing tools in support of DCF carried out in MARE 2014/19 and 2016/22 Med&BS, the existence of licenced and open-source/free tools that can be used out-of-the-box with little configuration and no development, information coming from consultation of the relevant end-users/stakeholders³ etc.

Deliverable 1: A list of stakeholders and sources used should be compiled. The expectations of the various stakeholders (requirement specifications) and the potential users (actors) should be described. The list of actions defining the interactions between a user and the system to achieve a goal (use cases) can be dealt in Work Package 3.

2. WORK PACKAGE 2: TO-BE ANALYSIS: WHAT WE NEED IN THE FUTURE

To analyse the data collection and reporting obligations under the DCF (and possibly other legislation in fisheries), and to discuss with involved Member States and the RCG Med & BS, including the Steering Committee on the RDB, on the data fields/coverage and aggregation level to be used. To discuss with end users on their needs for data. This phase should take into consideration current developments, like the RDBES.

For the setting up of a RDB, a number of conditions and operational requirements would need to be met. These requirements may require different level of progress, depending on the host:

- The scope: the RDB is a tool to facilitate the fulfilment by EU MS of data collection submission and reporting obligations at the EU and international levels. The RDB should become the source of EU data for all data requirements under the DCF for the specified marine region. The RCG Med & BS indicated that the RDB should contain detailed biological data of demersal and small pelagic species and aggregated transversal data (i.e. landings and effort)⁴. The tools and processes that will make part of the RDB should ensure the 'value' and quality of data: data has to be validated, quality-checked, compliant, inter-exchangeable and defined. Relevant work by a number of EU-funded

³ Projects' final report and annexes are publicly available on the link to the [DCF website](https://datacollection.jrc.ec.europa.eu/regional-coordination).
<https://datacollection.jrc.ec.europa.eu/regional-coordination>

⁴ Meeting of the Steering Committee for Mediterranean & Black Sea Regional DataBase (Med & BS – RDB), 28-30 January 2019, Rome.

studies (like the regional grants) and existing development initiatives (like RDBES in ICES) needs to be incorporated in the new RDB.

- A governance model to clearly define roles, this should be through a Steering Committee, with the Member States involved, the Commission and the host. It oversees the overall functioning and use of the RDB and it will be entitled to take decisions on the management and possible development of the RDB for the specified marine region.
- Data security, access and availability for the EU and for end users need to be ensured. Third parties' access to the database needs to be clearly circumscribed, in line with the EU's (and international) data availability policies. ICES data policy provides inspiration, as it clearly defines the conditions for data submission, data access and usage rights. Another inspiration are the data sharing agreements under the two regional grants⁵, where highly disaggregated data was shared and used to design regional sampling plans.
- The data submitted to the RDB by the Member States need to respect data rules and principles (DCF Regulation, article 17.2, and GDPR 2016/679).
- Responsibility and liability remain with the Member States: as per DCF Regulation (Article 14), it is the responsibility of the Member State to ensure the quality and completeness of collected data and its subsequent transmission to end users.
- Data use should be in line with Article 20 paragraph 1 of the DCF Regulation, where the obligations of the end users are clearly outlined.

The aim should be to define the starting point and to describe the longer-term perspective. The latter does not have to be defined as a specific output, but can be a range of options or can be of incremental nature.

Deliverable 2: Range of options for the RDB in the Mediterranean and Black Seas on the different conditions and requirements.

3. WORK PACKAGE 3: GAP ANALYSIS BETWEEN WP 1-2, LEADING TO SPECIFICATIONS

To take into account the different dimensions from the previous work Packages: technology, people, processes, data, institutions, existing databases and to define the specifications for the RDB. This should include:

- Features of the database:
 - data and sampling types/ domains,
 - aggregation levels,
 - codes/ reference lists,
- Functionalities/ tools:
 - upload procedures: exchange formats, upload tools, validation tools linked to upload, tools allowing access

⁵ MARE/2016/22 regional grants 'fishPi2' and 'STREAM', on the [DCF website](https://datacollection.jrc.ec.europa.eu/regional-coordination).
<https://datacollection.jrc.ec.europa.eu/regional-coordination>

- data validation tools: this should go hand in hand with regionally coordinated work, to allow common quality checks on input data, raising and combining of all data sets at regional level in a transparent and coordinated way
- data processing tools and delivering to specific data calls
- automatic reporting tools (linked to the DCF processes)
- user interface to define what the user sees and how one interacts with all the information (to upload data, to validate data, to report data, to search, compare, compile, aggregate, plot, visualise data etc).
- Methodologies to be followed for the different phases of this project
- Data governance issues, access rights, user roles and security aspects. The contractor should produce a data policy document dealing with data confidentiality, data ownership and access rights issues, taking inspiration from existing proposals or already agreed documents.
- Security aspects: audit trail, vulnerabilities, compliance and legal, infrastructure
- Testing
- Business continuity
- Support and maintenance

Deliverable 3: specifications for the RDB and final requirements. The list of actions defining the interactions between a user and the system to achieve a goal (use cases) should also be defined.

4. WORK PACKAGES 4-5-6: DEVELOPMENT – TESTING – PRODUCTION PHASE

The aim of these Work Packages is to develop, test, and put into production the database, based on the specifications defined in the previous Work Package, and to do this in an iterative and incremental manner.

All processes should be followed by the proper documentation.

Development

A mixture of active development together with hosting is encouraged. As a first step, the contractor should start by defining the Minimum Viable Product (MVP), describing the basic minimum features that would make the RDB operational. Then, the contractor should elaborate on the entire scope of the product. Change Management procedures should also be included in this process,

Testing

To bring together the Commission, data providers (Member States/ RCG), RDB developers, host and end users), to check the feasibility of the outputs in the implementation of the RDB.

Part of the testing will come from workshops to test and adjust, if needed, the different features of the test version of the RDB. For this to happen, the relevant Member States will be requested to populate the RDB in an incremental fashion and provide feedback on the data model.

In parallel to the testing efforts, the contractor will produce a user and administrator manual, to be written incrementally following development.

Production phase

To put each incremental version of the RDB on production with corresponding documentation, including SLA (Service Level Agreement).

This phase should also include training of stakeholders, including Member States experts and administration.

Deliverables:

- Minimum Viable Product, tested and rolled out in production, together with its user manual
- An undefined number of intermediate versions incrementing scope, individually tested and rolled out in production, together with its user manual
- The entire scope of product, tested and rolled out in production, together with its user manual

BACKGROUND DOCUMENTS

REGULATION (EU) 2017/1004 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy

<https://datacollection.jrc.ec.europa.eu/index.html>

RCG Med & Black Sea Reports and relevant recommendations

<https://datacollection.jrc.ec.europa.eu/index.html>

Liaison Meeting Reports <https://datacollection.jrc.ec.europa.eu/index.html>

MARE 2016/22 STREAM - D3.2: identify possible solution for data storage system, processing and analysis of the data at regional level

<https://datacollection.jrc.ec.europa.eu/index.html>

Salz et al. 2014: Feasibility study on scientific data storage and transmission under the future Data Collection Framework https://ec.europa.eu/fisheries/documentation/studies/scientific-data-storage_en

Outcomes of the 1st RDB meeting in 2012 <http://www.ices.dk/Pages/default.aspx>

RDBES and RDB (Fishframe) relevant documentation <http://www.ices.dk/Pages/default.aspx>