MEDITS COORDINATION GROUP
Mazara del Vallo (Sicily, Italy)
3rd-4th May 2023

MARE/2020/08 - SI2.839444 RDBFIS

DEVELOPMENT OF THE REGIONAL DATABASE FOR THE MEDITERRANEAN & BLACK SEAS

This project has financed under the European Maritime and Fisheries Fund (EMFF)

CINEA/EMFAF/2021/3.1.2/03/SC04/SI2.881222 RDBFIS-II

HOSTING, MAINTENANCE AND FURTHER DEVELOPMENT OF THE REGIONAL DATABASE FOR THE MEDITERRANEAN AND THE BLACK SEA

Med&BS RDBFIS: Overview

The Regional Grant MARE/2020/08 **Med&BS RDBFIS** was launched by DG MARE on 1st January 2021 underlined materialized discussions of over 10 years at regional level;

The action aimed at addressing the legal requirement of the DCF Regulation (EU) 2017/1004 on setting up regional databases purposing to facilitate Member States' response to data calls and reduce the burden of multiple data submissions (for data calls) under different formats;

The project was completed on February 2023 (having received a 2 month extension from the EC), the final report was submitted to DGMARE for evaluation;

Med&BS RDBFIS: Overview

The ultimate objective of the project is to **develop a regional database (RDB) for the Mediterranean and the Black Seas** (Med&BS) with the aim to enable reliable scientific advice and 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;
- the reporting obligations of the EU Member States by reducing the burden of multiple data submissions under different formats at the EU and international levels;
- the 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.

On the creation of RDBFIS, the consortium worked closely with all involved parties

RDBFIS: a web-based integrated fisheries information system for the Med&BS

main features and advantages:

- Centralize RDB for DCF data;

- A power full tool for Med&BS RCG, Med&BS MS, end users;

- A security subsystem ensures data access and protection;

- Support common quality data checks, processing, reporting;

- Surveys are included;

- Spatial information has been integrated

  https://medbs-rdbfis.hcmr.gr:8443/

Med&BS RDBFIS: Overview

Components

- RDB (incl. RDBES shema)
- GUI through the end user interact with the database(s) and the application modules
- Quality checks & Reporting (insert detailed or aggregated data – syntax text & error report, consistency checks, quality report)
- Processing (detailed biological & landings data -> datacalls)
- Filter data, advanced query tool, export
- Mapping

Med&BS RDBFIS: Overview

Data sets

- FDI
- Med&BS RCG (detailed biological data), landings
- Med&BS
- GFCM/DCRF
- Species lists
- Coding system
- Spatial data
- Environmental data
- MEDITS data

Med&BS RDBFIS: Overview

Stored data

- Through datacall: Med&BS, FDI, GFCM/DCRF, RCG
- EU fleet register
- EU CIRCABC (port location by Master Data Register)
- WoRMS (World Register of Marine Species)
- ITIS (Integrated Taxonomic Information System)
- MEDITS data (GRC), MEDITS TM Species
- EMODNET (bathymetry)
- Spatial data from several sources of information
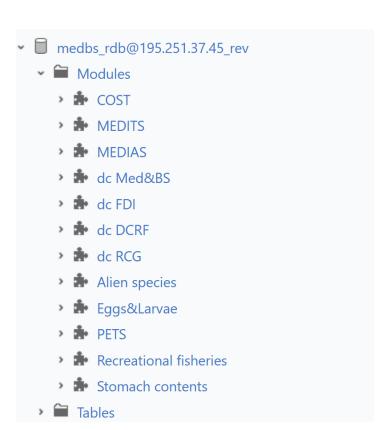- Codification system (incl. RDBES)

Grant Agreement No: MARE/2020/08 - SI2.839444

Development of the regional database for the Mediterranean and Black Seas

RDB modules

- medbs_rdb@195.251.37.45_rev
  - Modules
    - COST
    - MEDITS
    - MEDIAS
    - dc Med&BS
    - dc FDI
    - dc DCRF
    - dc RCG
    - Alien species
    - Eggs&Larvae
    - PETS
    - Recreational fisheries
    - Stomach contents
  - Tables

Open source in information technologies were fully adopted (2020-2023 EC strategy ''Think Open'')[1]

[1]

RDBMS: **PostgreSQL**
Spatial and geographic objects: **PostGIS, Geoserver, Map objects**
Graphical interface for the front end of the platform: **Angular Web Application Framework**
Back end of the platform: **Spring Framework**
Authentication & Authorization: **Spring Security OAuth2 & JSON Web Token**
Web Application Server: **Apache Tomcat**
Persistence: **Hibernate Object Relational Mapping library**
Programming: **R and Python programming languages**
Libraries/Packages: **R libraries for statistical computing and graphics**

The RDBFIS was developed in the Hellenic Centre for Marine Research (HCMR);

Med&BS RDBFIS: Overview

Meetings with stakeholders and end-users

A considerable effort was exerted to finalize the **discussions with the Med&BS MS** in order to collect the required information about the existing infrastructure used to support the DCF, the statistical system for the data analysis and the sampling scheme. The outcomes of the meetings **can be summarized as follows**:

- *The Med&BS MSs have established databases or similar systems to store and analyze DCF data and report to several data calls format;*

- *The MSs underlined the importance of the grant;*

- *It is 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 (e.g. the case of Cyprus to use SDEF format and RDBES hierarchies);*

- *RDBES structure, hierarchies or algorithms are not included in the Med&BS MSs established information systems, limited familiarity with RDBES;*

Meetings with stakeholders and end-users

Discussions related to the **compatibility issues between RDBFIS & RDBES** as well as the possibility to integrate part of the RDBES into RDBFIS took place with ICES experts, RCG, Med&BS MSs and Med&BS RDB SC.

Proactive discussions with **ICES experts on RDB** (Henrik Kjems-Nielsen, David Currie) were held aimed to understand the philosophy of RDBES, the governance and data policy. It was considered useful that a core team from RDBFIS followed the works of ICES WKRDBES-EST. **Concluding**, the RDBES tables contain too much information and we have to investigate and propose to Med&BS MS what is relevant. The RDBES estimation part is not implemented as much as ICES hoped so far and there is still lot to do. Even if the RDBES can be considered as a "mature" system, the algorithms have to be finalized, tested and approved by ICES.

Meetings with stakeholders and end-users

An open communication and collaboration channel was open between RDBFIS and the **Med&BS RDB SC**. During the implementation period of RDBFIS, four meetings were held in March 2021, July 2021, February 2022 and December 2022. Important issues were raised related to:

- governance,
- data policy,
- data access,
- RDBFIS hosting and maintenance,
- compatibility of RDBFIS & RDBES,
- type of data to be included in the RDB,
- data submission (primary and aggregated).

A round of discussions among **LP SC** and RDBFIS was completed; no final decisions were made but benefits were obtained for both sides.

Med&BS RDBFIS - II

Hosting, maintenance and further development of the Regional Database for the Mediterranean and Black Seas

Under FRAMEWORK CONTRACT – EASME/EMFF/2020/OP/0021
Duration: 24months
Project Start: April 1st 2023

Significant contribution by
Executive Agency for Fisheries and Aquaculture, Bulgaria (Simona Vasileva NICHEVA)
Ministry of Agriculture, Directorate of Fisheries, Croatia (Ivana VUKOV)
Fisheries Research Unit, Department of Fisheries and Aquaculture, Malta (Jurgen Mifsud)

As a follow up to the RDBFIS grant and taking into account that a solution for permanent hosting is currently lacking -COM proposes a temporary solution for hosting for the next two years.

Med&BS RDBFIS

Grant Agreement No: MARE/2020/08 - SI2.839444
Development of the regional database for the Mediterranean and Black Seas

Med&BS RDBFIS - II

Further development:

*A further improvement is concerning the consistency of data quality checks. Specifically, particular attention will be paid to enhancement of the quality checks considering the **RDBES formats**, focusing on the hierarchies applied in the Mediterranean for the biological samplings;*

*Concerning the **MEDITS survey data**, another improvement to be included in the RDBFIS is represented by the embedding of an upgraded **BioIndex** R package that provides relevant statistics on survey data, as biomass and density indices by year, length-frequency distributions, recruitment/spawner indices and maps;*

*The **integration of MEDIAS survey into RDBFIS** will be implemented with the assistance of MEDIAS chair and scientists;*

*Integration of **fleet economic data**;*

Med&BS RDBFIS - II

Further development:

i. **Data elaboration routines as well as data entry forms** _for stomach content, PETS, alien species, Eggs&Larvae and recreational fisheries is foreseen to be developed;_

ii. **Fleet analysis:** _Considering that: (i) several components of the application will have open access and (ii) the usefulness of disseminating information about Europe's commercial fishing fleet, a dynamic tool will be developed portraying the evolution of fleet dynamics in Europe;_

iii. **FDI spatial checks**_: R routines already implemented in JRC supporting the FDI EWG works, will be incorporated into RDBFIS. Discussions have started with the R routines developers and a meeting is scheduled to discuss technical integration issues in RDBFIS;_

iv. **Work Plan and Annual Reports**_: An effort will be made to enable Member States to send the Work Plan and Annual Reports online through a web based form. Syntax and consistency checks are foreseen to be implemented;_

We thank you for your attention

https://medbsrdb.eu/