



Food and Agriculture
Organization of the
United Nations



Regional Database (RDB) requirements

Review of RDB requirements for WECAFC and
presentation of some existing tools/frameworks

Yann Laurent

RDB outline

- * WECAFC RDB objectives
- * WECFAC RDB data and information / standards / classifications
- * WECAFC RDB fisheries functional requirements
- * WECAFC RDB technical requirements
- * Some existing tools / frameworks

RDB objectives

- * RDB role: support the management and the monitoring of regional management plans for fisheries resources of high importance
- * RDB collects or collates data from different national and possibly regional sources, harmonize this information for aggregation and comparison for fisheries monitoring and policy making support

WECAFC RDB challenges

- * Need to agree on common needs: regional agreement among WECAFC member states on the RDB fisheries functional requirements: what is the RDB?
- * Need to agree on common definitions: make sure that all WECAFC members states speak the same fishery language
- * Need to agree on common contribution: ensure that WECAFC members states will feed the RDB on a regular basis

WECFAC RDB data and information

- * To address the above challenges, we need first to define the type of data and information we want in this RDB.
- * Data and information for what purpose? RDB should be built in support to the **regional fishery management plans (FMP)**. **Species of high economics** values are targeted here (3 species for the prototype: conch/lobster/flying fish).

WECFAC RDB data and information

- * RDB should collect/collate data and information at regional level to support the:
- * Creation / development of new FMP
 - * Catches / effort / CPUE per species per fishing area and per fishing unit=> trend in fisheries exploitation per stock and fishing unit
 - * Stock status
 - * Export / import per species/fishing products
 - *
- * Monitoring of existing FMP
 - * Above indicators but with a finer definition = per FMP
 - * Socio economics impact

What type of RDB for WECAFC

- * Need for an scalable solution
- * FIRMS offers a standard template for qualitative information regarding stocks and resources: standard definitions and classifications, harmonized structure of information: **ideal for a first approach to data collation and harmonization on stock and resources**
- * Building up from FIRMS methodology **to extend RDB to a more advanced tool** (continue feeding FIRMS reporting needs) with exchanges – harmonization and storage solutions, search and dissemination

WECFAC RDB standards and classifications

- * Addressing the challenge of speaking a common language to feed the RDB by all Member States:
 - * We need to have standard concepts and definition (what is a species, what is a gear type, what is management measure);
 - * We need to define standard classifications.
- * Tools could also be created to assist the countries to report using these standard concepts, definitions and classifications (not in this project scope)

WECAFC RDB Fisheries functional requirements

- * The RDB should be built on the following components to address the above challenges to meet the objectives:
 - * **Master Data Management component:** manage all standard classifications (code lists)
 - * **Exchange components:** capacity of the RDB to collate data from different sources
 - * **(Optional) Harmonization:** in case data collated by RDB are not yet harmonized by the national reporting institution
 - * **Computing/processing:** generate indicators from collated data
 - * **Reporting:** make the generated indicators accessible to final users with export/search features

WECAFC RDB technical requirements

- * Here are some common technical considerations to build a sustainable RDB:
 - * Prefer a web based architecture to facilitate data exchange
 - * Open source tool to foster the development of a technical community around the system
 - * Resuse existing components developed by large communities
 - * Use commonly used language (.NET, JAVA, PHP, Javascript), standard framework (spring, hibernate, Zend PHP, JQuery, bootstrap) and Database Management System (MySQL, PostgreSQL) for cost saving

WECAFC RDB technical requirements

- * Hosting strategy must be developed carefully:
 - * WECAFC **local hosting Vs Cloud solution**
 - * **Local hosting:** dedicated IT staff, dedicated white room as server farm (secured and safe power supply, AC, restricted access) and dedicated high broadband. But data are stored locally under the institution control
 - * **Cloud solution:** There is no need for dedicated staff, no need for dedicated infrastructure. But the data is not hosted locally which could be a problem for confidential data given IT policies
- ➔ We usually recommend cloud hosting solution as most cost efficient option

Some existing tools / frameworks

- * There is no off-the-shelves solution to build a RDB.
- * Frameworks, tools and initiatives exist that could be used or be an inspiration to build the RDB

Some existing Infrastructure / software bricks

- * **iMarine** as e-infrastructure: provide data services (based on hosting and software solutions) to be put together to answer the needs of a RDB – Tuna Atlas and other Pilots (e.g. to BOBLME) already delivered; Pilot Stock assessment VRE under development for ICCAT Bluefin tuna assessment; Initiatives planned to develop a RDB in the BlueBridge project
- * **Cotrix / COMET / Grade-FLOD / RefPub** : a library of FAO tools for Master Data (standard, classification, license) Management and Mapping
- * **DG MARE Integrated Fisheries Data Management Programme** (ex FLUX)
- * **Software framework under construction by FAO** for deploying solutions at national level for integrated management of fisheries operations data (Vessel registries, licensing, e-logbooks, VMS, landings, observer data, ...); one pilot planned in Trinidad and Tobago, partly building on the FiMIS Bahamas

Existing Complete tools

- * FisMIS developed for Bahamas: a tailored web based solution for national fisheries management, including license, registries, detailed data and indicators processing for sample base survey and log book data. No mobile data collection / no Size distribution collection.
- * StatBase: tools to collate and harmonize data. Mainly targeting reporting of existing data (a complement to FisMIS)
- * ArtFish : a simple and robust tool for national statistical system initially developed to manage artisanal fisheries for low resource countries with a new version coming with industrial and tablet. No web based data upload or reporting.
- * VRMF: a framework for vessel management

Institutional Framework

- * International ones
 - * **FAO code of conduct**: provides principles and standards applicable to the conservation management and development of all fisheries
 - * **Fishcode STF**: provide a framework for the improvement of knowledge and understanding of fishery status and trends
- * Regional ones
 - * **Pan African Strategy** (list of minimum core indicators)
 - * **DG MARE DCF** (list of data call for scientific data)

Methodologies

- * FAO Sample-Based fishery survey (Tech Paper 425)
- * Training course on fisheries statistics (FIPS/C1091 – get your copy in the room !)

Standard settings

- * CWP for FAO standard
- * Data access and sharing policies (iMarine)
- * JRC for DG MARE DCF
- * eRS3 for DG MARE

More on

- * iMarine: <https://i-marine.d4science.org/web/guest>
- * FisMIS for Bahamas: test server
<http://epsm.pirogprod.info:9080/ui/#/login>

Thank You!
¡Muchas Gracias !
Merci!