



Food and Agriculture  
Organization of the  
United Nations

# WECAFC Regional Data Access and Sharing Policies

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## Version history

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## Acronym and Abbreviations

CCCFP	Caribbean Community Common Fisheries Policy
CRFM	Caribbean Regional Fisheries Mechanism
CWP	Coordinating Working Party on fishery statistics
DCRF	Data Collection Reference Framework
EU	European Union
FAD	Fish Aggregating Devices
FDS WG	Fisheries Data and Statistics Working Group
FIRMS	Fisheries and Resources Monitoring System
GFCM	General Fisheries Commission for the Mediterranean
ICCAT	International Commission for the Conservation of the Atlantic Tunas
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unregulated and Unreported fishing
OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centroamericano
RDASP	Regional Data Access and Sharing Policies
RDB	Regional DataBase
RFB	Regional Fishery Body
RFMO	Regional Fishery Management Organization
SOFIA	State of World Fisheries and Aquaculture
t-RFMO	tuna Regional Fishery Management Organization
WECAFC	Western Central Atlantic Fishery Commission
WGFDS	Working Group on Fisheries Data and Statistics

## Disclaimer

Please note that this document is a working document. Some parts marked in bracket [] will be further developed after the first meeting of the Fisheries Data and Statistics Working Group

# 1 Purpose and Background

## 1.1 About WECAFC

The Western Central Atlantic Fishery Commission (WECAFC) was established in 1973 by Resolution 4/61 of the FAO Council under Article VI (1) of the FAO Constitution. Its statutes were amended by the FAO Council at its Seventy-fourth Session in December 1978 and by the Hundred and Thirty-first Session of the FAO Council in November 2006. WECAFC is a Regional Fishery Body (RFB), which has the mandate to issue fishery management advice, which may be implemented by its members on a voluntary basis. In contrast with Regional Fishery Management Organizations (RFMOs) RFB's do not have the authority to issue binding advice for its members.

Currently the Commission has 34 members, including the European Union. The latest session (16th) convened in 2016 in Guadeloupe, France with 28 members participating. Observers from four Regional Fishery Bodies (RFBs) and four intergovernmental organizations also participated. The Commission adopted five regional fisheries management recommendations respectively on: 1) the regional plan for the management and conservation of Queen conch, 2) spiny lobster management and conservation, 3) the sub-regional fisheries management plan for flyingfish, 4) the management of deep sea fisheries in the high seas, and 5) the management of shrimp and groundfish resources. The Commission also adopted two resolutions on: 1) sea cucumber fisheries management and aquaculture, and 2) Marine Protected Areas as fisheries management tool in the Caribbean.

The 16<sup>th</sup> Commission agreed to establish a working group for fisheries data and statistics (FDS WG) matters, based on the ongoing work of the WECAFC-FIRMS partnership and supported the development of a regional database in collaboration with the Members and partners in the region.

## 1.2 Towards becoming a RFMO

The Commission during its 16<sup>th</sup> session agreed to launch a process to establish a Regional Fisheries Management Organization (RFMO) in the WECAFC area of competence, being the Western Central Atlantic (area 31) and the Northern part of the South West Atlantic (area 41) and to collaborate in fisheries management and conservation in the Areas Beyond National Jurisdiction (ABNJ) of straddling stocks, deep sea fish stocks and highly migratory species that are not under the mandate of ICCAT (International Commission for the Conservation of the Atlantic Tunas). The Commission discussed intersessional activities of Working Groups and regional collaboration in addressing Illegal, Unregulated and Unreported (IUU) fishing, and approved the Programme of Work (2016–17).

### 1.3 Need for fisheries data and statistics in the WECAFC region – DCRF – Need for Regional Data Sharing and Access Policies (RDSAP)

WECAFC member countries recognized in the 1970s and 1980s that without the necessary data and information, it would be impossible for the countries in the region to manage their shared fisheries. Following major investments by the countries, with support from the Danish Government (DANIDA) capacity building projects and the FAO/Norway EEZ programme (1982 -1985), the availability of data and information on the status of the stocks and the fisheries improved significantly. However in the 1990s and first decade of this millennium less emphasis was given to fisheries statistics and the need for sharing fisheries data and statistics between states, particularly for use in regional assessments. As a consequence, WECAFC regional scientific working groups on fisheries statistics, stock assessments and fisheries policies and planning, were discontinued after the 2014 Scientific Meeting. This resulted in increasing the existing gaps in very basic information, and made it difficult for fisheries managers and decision makers to make well-informed choices based on data, information and scientific evidence. Compared to the 1990s, fishery managers were faced with much less data for decisions on management and conservation purposes. Accurate stock assessments became increasingly difficult, and the rapid increase in Fish Aggregating Devices (FADs) fisheries has exacerbated the situation. As a result, fishery management is challenging and decisions are postponed. Consequently, the stocks of many shared and highly migratory species, such as billfishes, continue to be heavily exploited and increasingly targeted for harvest even though they are already depleted well below biomasses that could achieve maximum sustainable yields.

Furthermore, the commitment of CARICOM States to improving evidence based decision-making through regional cooperation has been clearly articulated in several regional policy documents including the “Strategic Action Programme for the Caribbean Large Marine Ecosystem”, the CARICOM Strategic Plan, 2015 -2019, the Caribbean Community Common Fisheries Policy (CCCFP) and the CRFM Strategic Plan, 2013-2021. Concrete action in this direction led to establish the WECAFC-FIRMS partnership in 2014 which among other results led to the establishment of WECAFC Data and Statistics Working Group. Moreover, data and information on some key commercial fisheries target species (Spiny lobster, Queen conch, Flying fish) are being shared between the members of CRFM, OSPESCA and WECAFC, through joint working groups on these specific fisheries.

At WECAFC 15 which was convened in Trinidad in March 2014, the minimum steps needed to improve the capability of the Commission in becoming a functional management organization were identified as

1. Increase and improve information content on fisheries data and statistics
2. Increase accuracy of data and statistics via utilizing agreed practices in data collection
3. Develop and implement agreed practices for data sharing
4. Identify feasible stock assessment models for the region

As a decisive step into this Focus Area, the WECAFC 15 agreed to enter into a collaboration with the FAO, Fishery Resource Monitoring Program (FIRMS), thus formally engaging the WECAFC-FIRMS Partnership recognizing the need to make these regional improvements in the basic fisheries data. This Partnership was successfully implemented in 2015 and 2016 during the WECAFC-FIRMS Regional Database project (phase I). The three main outputs which were successfully achieved respectively were: output 1: : FIRMS regional inventories published and capacity built for national fisheries inventories on focused species (Queen conch, Spiny lobster, Flyingfish) in a few pilot countries, output 2: National and sub-regional capacity strengthened in data collection and data sharing in support to WECAFC fishery management plans, and output 3: Foundations of a Regional Database proposed and tested with pilot data contributions. A regional data workshop was convened in January of 2016 and the report of the workshop is available on-line<sup>1</sup>.

WECAFC-FIRMS phase II is a continuation of the WECAFC-FIRMS project and is primarily supporting the mandate of the Fisheries Data and Statistics Working Group (FDS WG), agreed by the Members during WECAFC 16<sup>th</sup> Commission Session which convened in Guadeloupe in June 2016. The support is focusing on agreements regarding minimum data requirements for fisheries under management plans, and on the governance and operationalization of the WECAFC Regional Database.

The WECAFC Data Collection Reference Framework (DCRF) is a key document drafted under WECAFC-FIRMS Phase II and lays the foundation of fisheries data and statistics collection and collation to feed the needs of developing, monitoring, assessing and reviewing regional fisheries policies such as FMPs as required by any RFMO.

This DCRF defines minimum data requirements of minimum statistics to support evidence based policy making. As minimum data requirements, these statistics are very aggregated data and usually already publicly available. When it comes to data in support to stock assessment, data can be more detailed with reference to vessel name, fishing group (with GPS coordinates). These data are needed for Species Working Groups for stock assessment modelling but are very sensitive and should be available only to authorized experts.

Thus, defining minimum data requirements requires to also define how these minimum data can be accessed by the group of users in the need for these data, and how these data can be shared between national institutions and WECAFC, but not only, shared between WECAFC and other RFMOs (ICCAT) and international organizations.

This document defines the main principles in accessing and sharing data in the WECAFC area and defines the modalities of its technical implementation in the WECAFC regional database.

**Data Access and Sharing Policy:** As governing instruments, data access and sharing policies are meant to set principles and boundaries which shall govern the in-and-out flow of data by the WECAFC community, data security and confidentiality aspects, collaborative work through data sharing, and publishing.

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<sup>1</sup> <http://www.fao.org/3/a-i5789e.pdf>

## 2 High Level Strategies

The proposed WECAFC data management and related Regional Data Sharing and Access Policies respond to international and regional data strategies including, in a context of multiple reporting requirements, the need for streamline data reporting, as well as collaboration and harmonization among RFBs and other national and regional institutions involved in improving the state of marine resources (WECAFC-CRFM-OSPESCA MoU) and that of the marine environment (SAP). Fostering public awareness while providing access to the underlying scientific evidence, and involving stakeholders in the collection and ownership of data processes feature high in those strategies, described below.

### 2.1 Best practices for streamlining between national/regional/global levels

FAO has recalled in its last State of World Fisheries and Aquaculture (SOFIA 2016<sup>2</sup>) the needs for improved data availability and quality for improved stock assessment, highlighting the importance of clear data access and sharing policies at regional level to streamline data availability between national, regional and international levels : *“Data availability and quality issues often constrain the accuracy of assessment results. (...)*

*It is important that high-quality catch, effort and other data be made available in a timely manner and shared among stakeholders, e.g. scientists, decision-makers and fishers. Assembly of such data into integrated databases prior to assessments can greatly facilitate analysis. (...) Similarly, catch and effort data could be assembled, although a lack of agreed datasharing and confidentiality policies remains a hindrance. Enhanced information technology and data management capacities can also help.”*

The forthcoming SOFIA 2018 will acknowledge improvements achieved in streamlining data reporting between national, regional and international levels and will outline components of best practices for further improvements: *“ An example of improvement regards streamlining of arrangements for improving consistency, reducing discrepancies among published global and regional datasets and reducing the reporting burden for countries. Such arrangements include the STATLANT standardized questionnaires (since the 1970s) and formal agreements between FAO and other CWP member organizations such as Eurostat (since the 1980s), tuna RFMOs (since the late 1990s) and the Southeast Asian Fisheries Development Center (SEAFDEC) (since 2007). Further work is now being conducted to expand such agreements to other institutions such as the Organisation for Economic Co-operation and Development (OECD) and additional RFBs (e.g. Regional Fisheries Committee for the Gulf of Guinea [COREP], Fishery Committee for the West Central Gulf of Guinea [FCWC], Regional Commission for Fisheries [RECOFI], Western Central Atlantic Fishery Commission [WECAFC]). In addition, best practices on streamlining statistical data workflow are being developed. Formal data sharing agreements among*

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<sup>2</sup> <http://www.fao.org/3/a-i5555e.pdf>

*agencies should eventually address the six main lines of activity in FAO’s vision of a streamlined reporting mechanism for fishery statistics:*

- *alignment of calendars;*
- *sharing of information on national focal points;*
- *consistency in concepts, standards and definitions;*
- *mainstreamed data provision serving several reporting requirements for Member Countries;*
- *improved accessibility through harmonized published formats;*
- *active collaboration for analysis of gaps and discrepancies;*
- *transparency through systematic processing and documentation of sources.*

*While these data sharing agreements may represent additional challenges for the institutions, they will add immense value in terms of improved data quality.”*

## 2.2 Stakeholders involvement

## 2.3 Strategies specific to the regional context:

In the Caribbean, strategies are being developed through:

- WECAFC-CRFM-OSPESCA MoU [to be described]
- CLME Strategic Action Plan and contribution to the CLME+ DSS and SOME – (currently under CLME+ project) [to be described]

## 3 Vision and guiding principles (High level Policies)

### 3.1 Regional Data Access and Sharing Policies at two levels

The need to define two levels in these policies was identified during the regional coordination meeting, held in March 2017 with representative from the sub-regional, regional and international organizations interacting in the region: “ *It was agreed that a distinction is to be made between low level access to the DCRF and higher level data sharing policies: Policies should define general protocols and agreements as to why, how and under which general conditions data are shared and exchanged. The DCRF should detail and operationalize these general policies by strictly defining standards, data access and data exchange formats.*”

This definition is extended in this document. Regional Data Access and Sharing Policies are built to achieve a vision on data exchange at regional level (country to country, country to regional organization, country to international organization). This vision and its guiding principles (Including the aforementioned general protocols and agreements) constitute the high level data sharing policies. A strategy is built to achieve this vision through the main principles for a given period of time. This strategy is regularly updated to address issues that could have raised during its implementation. Some of the activities will be quite generic (data harmonization) some will be the technical implementation, i.e. the lower level of RDASP previously defined.

### 3.2 RDASP Vision

The Regional Data and Access Sharing Policies vision is the following: facilitating regional fisheries data and information exchange to support evidence based fisheries policy making at national and regional levels, while ensuring non-disclosure of sensitive fisheries data and information.

These policies are instrumental to the Mission of WECAFC to support regional fisheries management plans for the three priority species (Queen conch, Caribbean Spiny Lobster and Flyingfish<sup>3</sup>), to support stock assessment activities and to fight against Illegal, Unregulated and Unreported (IUU) fishing. This Mission more recently is extended to encompass Climate Change challenges, i.e. informing WECAFC Members of Climate Changes impacts and risks on the Fisheries Sector to increase its resilience.

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<sup>3</sup> Respectively: *Strombus gigas*, *Panulirus argus*, and *Hirundichthys Spp* [add link to the FMP documents]

### 3.3 RDASP Principles

We recall here key definitions:

- **Content:** The totality of information and data in any digital format contained in the WECAFC Regional database.
- **Data:** Facts that result from measurements or observations (FAO Glossary<sup>4</sup>). Data include statistics, indexes, data sets and other excerpts from databases, which are usually updated and published on a regular basis.
- **Information products:** include documents and publications, including statistical analyses and outlooks; multimedia products; and graphics, tables, images.

Data exchange is twofold:

- data access: one data source is exposed for any type of query (pull) from an external data consumer (can be a man or a machine)
- data sharing: two data sources communicate together and share data (man to man, man to machine/machine to man, machine to machine)

The first principle is directly inspired from the concept of privacy viewed as a basic human right in the Universal Declaration of Human Rights<sup>5</sup> (Article 12) adopted in Paris, France the 10<sup>th</sup> of December 1948: *“No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of the law against such interference or attacks.”*

**This first principle states that data and information have different status depending on its nature and sensitiveness:** confidential or private data Vs public data

Confidential data/information is thus defined as any data / information that contains any reference to individual, family, home that could be used to interfere and to attack upon an individual honor and reputation. This definition is extended to legal entities.

**The second principle** is also inspired from the article 12 of the Universal Declaration of Human Rights and **ensures protection of confidential data.**

It doesn't mean that all confidential data should never be shared. When submitting data and information to WECAFC, the data provider can accept to have his data shared to a group of identified data consumer that have signed a non-disclosure agreement. Sharing depends on the sensitiveness (level of confidentiality) of the data and the use of these data: stock assessment models require very detailed information (fishing data with GPS coordinates of fishing ground) with very sensitive information while fisheries management can be supported with less precise data (Larger fishing zones like Gulf of Paria in Trinidad).

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<sup>4</sup> FAO Glossary referred to the FAO Fisheries Technical Paper 382 (<http://www.fao.org/3/a-x2465e.pdf>)

<sup>5</sup> <http://www.un.org/en/universal-declaration-human-rights/>

As a consequence, **the third principle is to ensure that needed data is shared and accessed by the audience in WECAFC** that needs this data to support evidence based policy-making. Each level of confidentiality has a **corresponding level of security and authorizations**.

These three principles outline three groups of data:

- **Private data** (sensitive) **with restricted access**: only to WECAFC secretariat – in coordination with CRFM and OSPESCA, WECAFC Countries Members representatives, Scientific Advisory Group, and Working Group members (For instance, log book data for species working group member) = **confidentiality level 1**;
- **Semipublic** (less sensitive) **data with less restricted access**: Above authorized users and working group attendees and resource persons (For instance, result of country stock assessment model computation) = **confidentiality level 2**;
- **Public data with public access** (For instance, regional statistics, regional list of authorized vessels) = **confidentiality level 3**.

It is to be noted that some data considered highly sensitive in one context (fishing trip for a given vessel to be used in stock assessment modelling) with a strict confidentiality constraint can be considered public in a different and specific context: fight against IUU fishing can require to publish contravener information (name of vessel, name of captain, fishing trip information) to share the knowledge of the risk associated to this particular vessel and the potential need to have additional controls.

**The fourth principle defines that all users accessing / sharing restricted data must be formally identified**, either fisheries officers officially nominated by their national fisheries institutions as WECAFC data focal point or national data manager for the RDB, or national regional or international experts endorsed by the WECAFC secretariat with the agreement from the Member Countries. This agreement is first reviewed by the WECAFC Fisheries Data and Statistics Working Group. The actual process is yet to be defined.

This applies also the national data manager submitting public data to WECAFC. Even though submitted data are public, these data are national official data and must be reported by a national fisheries officer officially mandated to do so. By default, the WECAFC data national focal point is the country delegate in the WECAFC Fisheries Data and Statistics Working Group. His alternate is the director of the focal point's institution or any officer nominated by the director.

**The fifth principle stresses that data and information should be accessed and shared in consistent ways**: concepts, standards and definitions should remain consistent across the years. Data are exchanged with its associated metadata describing these concepts, standards and definitions, and documenting and highlighting any changes in any of these three domains. This principle implies sub-principles ensuring this consistency:

- Concepts, standards and definition documented and available (restricted access or public one): For WECAFC, these concepts, standards and definitions are defined in the Data Reference Collection Framework (DCRF) document.
- Harmonization of shared data according to the same concepts, standards and definition

- Modalities of public data dissemination should be described in the terms of use, especially for citation.
- Modalities of data sharing should be defined (frequency, timeliness etc...)

**The sixth principle acknowledges the principle of subsidiarity** for data access and sharing policies. National data can't be accessed and shared at regional level if national data access and sharing policies prevent it (i.e. national policies are more restrictive than the WECAFC ones). WECAFC is the custodian of shared data with the Commission. It should comply with national policies.

**The Seventh principle** imposes that **any technical implementation** for any data management for the WECAFC has to implement the above principles.

## 4 Regional data access and sharing policies technical implementation (lower level policies)

### 4.1 Introduction: RDASP, DCRF and RDB

Data Collection Reference Framework defines the framework for minimum data requirement for fisheries management and stock assessment (concept, standards and definition).

Regional data access and sharing policies defines how the DCRF data (and other types of data) should be accessed and shared (define the copyright and need for citation).

The regional database provides the technical environment to manage and publish data defined in the DCRF, and make these data available for access and sharing to the different users (man or machine) according to the RDASP.

The RDB has been developed with the technical support of the BlueBRIDGE project with hosting in the iMarine<sup>6</sup> infrastructure. This infrastructure is cloud based. It offers a set of standard data policies and can implement additional ones per product.

In the WECAFC context, the Regional Database is accessible through Virtual Research Environment (VRE), with the understanding that distinct VREs can be set-up according to the needs for the implementation of the RDB.

### 4.2 The RDB host - iMarine data policies (access, sharing, security)

The iMarine e-infrastructure is accessible only to registered users. Data uploaded in the system can be shared within the infrastructure but also made available outside the infrastructure.

- **Shared and public data in iMarine e-infrastructure**

This infrastructure has its own terms of use<sup>7</sup> regarding data hosted in the infrastructure. A Data Access and Sharing Policy<sup>8</sup> and best practices<sup>9</sup> were also drafted.

These policies can be summarized as follow:

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<sup>6</sup> <http://www.i-marine.eu>

<sup>7</sup> <https://i-marine.d4science.org/terms-of-use>

<sup>8</sup> In folder <https://goo.gl/T4BrCY>

<sup>9</sup> In folder <https://goo.gl/T4BrCY>

*“As regards the copyright and licensing of the content available through the iMarine e-infrastructure, all content on the Infrastructure is subject to copyright. Reuse and licensing terms are defined at a metadata record level, contained in the copyright notices and business metadata accompanying each item of content or dataset (see “license” or “constraints” field).*

*Except where otherwise indicated, content is licensed for display and reuse via the Infrastructure under the CC (CC) license. All derivative products intended for publication and dissemination through iMarine shall be licensed under a CC license. In addition to providing the licensing metadata required by the CC license, users must ensure accurate attribution and provide a recommended citation.”*

<b>Copyright and other Restrictions (Y/N)</b>	Y
<b>Are commercial uses of this resource allowed? (Y/N)</b>	Depending on the licensing of each content item
<b>Are modifications of your work of this resource by other people allowed? (Y/N/Yes, if others share alike)</b>	Depending on the licensing of each content item
<b>Cost (Y/N)</b>	N
<b>Description</b>	

(Summary and table taken from the EGI report on Report data sharing policies and legal framework in fishery and marine sciences <sup>10</sup>)

- **Data security in iMarine e-infrastructure**

Yet an additional document is required to ensure that WECAFC can ensure to its Members that access to uploaded and shared data will always remain available. A Service Level Agreement (SLA) is required between FAO (WECAFC being a RFB article 6 of FAO constitution) and the iMarine service provider to ensure long term accessibility (7/24) and long term preservation of the data, including clauses for migration to another platform (i.e. if the choice is made by WECAFC Members to move to another platform, the SLA must ensure that all data are still available in a format that allows a smooth migration of data to the next platform).

The iMarine platform also ensures the security at hardware and software level of the uploaded data from external attacks (proper firewall, hardware and software maintenance with regular or ad-hoc security patches applied, secured user registration process, etc.).

<sup>10</sup> <https://documents.egi.eu/public/ShowDocument?docid=2699>

## 4.3 The WECAFC RDB and FIRMS data policies

### 4.3.1 Policies governing the sharing of data and statistics

The Regional Database (RDB) provides a tool to collate and aggregate data/statistics from WECAFC Members according to the Data Reference Collection Framework.

The process of data collation in the RDB is the following:

- Step 1: the data calls are defined according to the WECAFC Data Collection Reference Framework on a yearly basis by the Commission. The Regional Data Manager creates the corresponding template in the regional database and shares these templates with the National Data Manager
  - Step 2: the National Data Manager uses the template to report national data; he/she is in charge of harmonizing national data according to regional standards concepts, definitions and classifications. Once harmonized and standardized, national data are submitted to the Commission;
  - Step 3: the Regional Data Manager controls submitted data and validates them for inclusion in the regional datasets.
  - Step 4: Validated data are published in the WECAFC Regional Database according to the RDASP.
- 
- **WECAFC RDB management of data access and sharing policies**

The RDB can implement through the iMarine e-infrastructure the 3 levels of confidentiality as defined in the main principles:

- General public can access all confidentiality level 3 data
- Some registered users can access confidentiality level 2 and level 3 data
- Only few registered users can access confidentiality level 1, level 2 and level 3 data

As Administrator of the Regional Database and related VREs, the Regional Data Manager is in charge of:

- Creating the national data manager and his/her alternate for each WECAFC Member;
- Creating other users as recommended and endorsed by the Fisheries Data and Statistics Working Group and/or the Commission;
- Defining the rights per user and role.

- **WECAFC RDB Data dissemination**

This DCRF defines the level of data accessibility. All data are publicly available through the data viewer (confidentiality level 3).

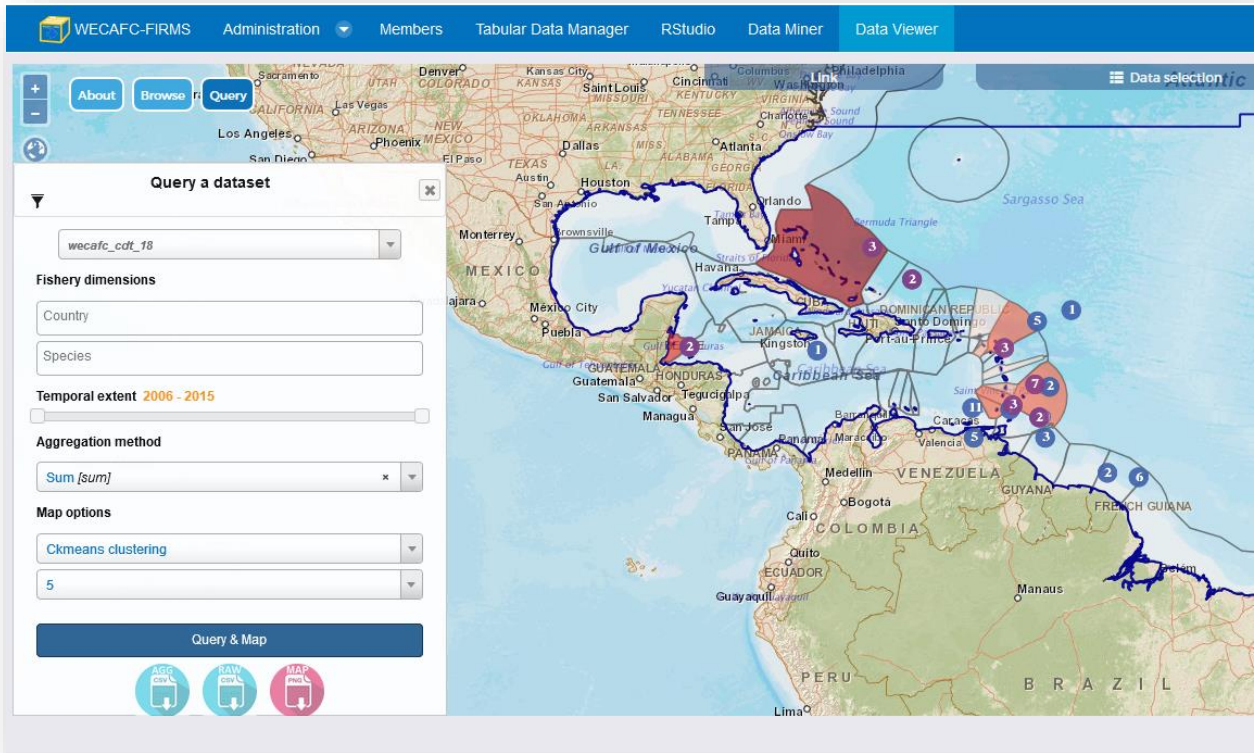


Figure 1 : WECAFC RDB data viewer in the iMarine infrastructure

WECAFC being a FAO Regional Fishery Body under article VI, data and statistics fall under the general FAO terms of use<sup>11</sup> summarized as follow:

<b>Copyright and other Restrictions (Y/N)</b>	Y
<b>Are commercial uses of this resource allowed? (Y/N)</b>	N
<b>Are modifications of your work of this resource by other people allowed? (Y/N/Yes, if others share alike)</b>	Y, with appropriate citation: <i>This is an adaptation of an original work by FAO. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by FAO.</i>
<b>Cost (Y/N)</b>	N

<sup>11</sup> <http://www.fao.org/contact-us/terms/en/>

<b>Description</b>	<p>Content on the FAO website is protected by copyright. To ensure wide dissemination of its information, FAO is committed to making its content freely available and encourages the use, reproduction and dissemination of the text, multimedia and data presented. Content may be adapted, translated, copied, printed and downloaded for private study, research and teaching purposes, and for use in commercial and non-commercial products or services, provided that appropriate acknowledgement of FAO as the source s given and that FAO's endorsement of users' views, products or services is not stated or implied in any way. FAO encourages unrestricted use of news releases provided on the FAO website, and no formal permission is required to reproduce these materials.</p> <p>RECOMMENDED CITATION:          [© FAO] [Year of publication] [Title of content] [Page number (for publications)]          [Location on FAO website] [Date accessed and/or downloaded]</p>
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(Table taken from the EGI report on Report data sharing policies and legal framework in fishery and marine sciences <sup>12</sup>)

WECAFC is the custodian of national data: source must be acknowledged in a proper citation available for each dataset published in the RDB. It should be more detailed as the recommended citation formation by FAO in its terms of use.

A draft proposal for a WECAFC RDB citation is the following:

<p>© [Copyright holder]. [Title] ([Year]). WECAFC Regional Database. In: Fisheries and Resources Monitoring System (FIRMS). [Publisher]. Updated [Update date]. [Date accessed and/or downloaded [Access date]]. [URL]. Database sources: [Database sources]. Sources citations: [Citations to the database sources]</p> <p>© FAO. Bahamas catch data, 2018. WECAFC Regional Database. FAO. In: Fisheries and Resources Monitoring System (FIRMS). FAO. Updated 8 May 2018. Accessed 13 May 2018. <a href="http://example.com">http://example.com</a></p> <p>Database sources: Department of Marine Resources, Bahamas.</p> <p>Sources citations: [Citations to the database sources] (<i>in the format indicated by the data owners</i>)</p>
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- **Reporting data to WECAFC RDB**

Data made public through this map viewer follow a strict publication process as described in the section introduction: only authorized users can submit data to the WECAFC regional database as stated in the fourth principle (National data manager).

The national data manager reports according to the templates defined in the RDB according to the DCRF.

<sup>12</sup> <https://documents.egi.eu/public/ShowDocument?docid=2699>

He/she has the responsibility to ensure that reported data are harmonized and standardized as defined in the DCRF.

If/where national policies prevent the reporting of the required data, the sixth principle of WECAFC RDASP is applied. When/where raised, this issue must be discussed at the next session of the Fisheries Data and Statistics Working Group to identify actions to be taken. At minima, metadata of published regional data must indicate the missing countries in the reported data and the reason behind.

Only the regional data manager (nominated by the WECAFC Secretary) can review these submitted data before publication.

The DCRF also defines frequency of data sharing: by default, national statistics are reported to WECAFC on a yearly basis upon a WECAFC's Data call. Other frequency of data call mechanisms can be established (after validation by the WECAFC Commission) on the basis of specific needs of WECAFC-CRFM-OSPESCA working groups, or management plans.

- **Data sharing with other organizations**

In a next future, the RDB can serve as a data hub to report to ICCAT for tuna data and to FAO.

- **Reporting to ICCAT**

ICCAT is requesting confidential information. Data are disseminated by ICCAT according to its “Rules and procedures for the protection, access to, and dissemination of data compiled by ICCAT “<sup>13</sup>. These rules and procedures define confidential data (named non-public domain data) and non-confidential data (public domain data).

Both WECAFC and ICCAT definitions must be aligned to enable reporting of data from WECAFC RDB to ICCAT.

Concepts, standards and definition must be mapped to facilitate automatic reporting.

Metadata have to be shared with ICCAT

- **Reporting to FAO**

Statlant questionnaire for WECAFC? [to be further elaborated]

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<sup>13</sup> [https://www.iccat.int/Data/REP\\_EN\\_10-11\\_I\\_1\\_Annex\\_6\\_Confidentiality.pdf](https://www.iccat.int/Data/REP_EN_10-11_I_1_Annex_6_Confidentiality.pdf)

### 4.3.2 Policies governing the sharing of information on status and trends (FIRMS)

The FIRMS system is the place for managing and disseminating information on status and trends of WECAFC marine resources and fisheries, according to the FIRMS Information Management Policy <sup>14</sup>. WECAFC Marine Resource and Fisheries inventories constitute the backbone of the FIRMS knowledge base for disseminating status and trends, they provide the complete picture from which to assess current level of knowledge. Through and together with these inventories, FIRMS can also facilitate access to relevant data and statistics of the WECAFC RDB which support understanding and evidence of status and trends.

Marine Resources and Fisheries are inventoried for i) monitoring purpose and, ii) to capture status and trends of marine resources and fisheries. All data and information disseminated in FIRMS are public and must be validated by “data owners” prior its public release as defined in the FIRMS Information Management Policy <sup>15</sup>. According to the contribution, data owners can be WECAFC Commission, CRFM, OSPESCA, and Member Countries.

In particular, responsibilities are assigned as follows: 1) WECAFC is responsible for the content of the marine resources inventory while 2) Member Countries are responsible for the content of the fisheries inventory; 3) CRFM and OSPESCA can coordinate/facilitate the countries submission of Fishery information and 4) WECAFC – in coordination with CRFM and OSPESCA - has the corporate responsibility for the overall consistency of the inventories, overview of strategic and policy aspects. In terms of maintenance: 1) Marine Resource reports can be published upon published WECAFC Working Group Reports, and 2) Countries can update the content of their fishery inventory on a routine basis. The FIRMS Partnership and Steering Committee provides the overall data sharing governance framework. Data calls can be launched for regular updates.

## 4.4 Other types of data with WECAFC

Other RFMOs collect more data for their different species groups. These are more detailed data such as logbook data to respond to specific management or MCS requirements.

Any WECAFC recommendation to collate data must define its level of confidentiality and this document will have to be updated accordingly.

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<sup>14</sup> <http://www.fao.org/3/a-ax530e.pdf>

<sup>15</sup> <http://www.fao.org/3/a-ax530e.pdf>

## 5 Appendix

### 5.1 Appendix 1: glossary

**Content:** The totality of information and data in any digital format contained in the WECAFC Regional database.

**Data:** include statistics, indexes, data sets and other excerpts from databases, which are usually updated and published on a regular basis.

**Data Access and Sharing Policy:** As governing instruments, data access and sharing policies are meant to set principles and boundaries which shall govern the in-and-out flow of data by the WECAFC community, data security and confidentiality aspects, collaborative work through data sharing, and publishing.

**Information products :** include documents and publications, including statistical analyses and outlooks; multimedia products; and graphics, tables, images.

**Open Access:** can be defined as the immediate, irrevocable, unrestricted and free online access by any user worldwide to information products, along with unrestricted re-use of content, subject to proper attribution. FAO considers Open Access to be an important practical application of its commitment to the collection, synthesis, packaging and distribution of FAO knowledge to the world at large, and particularly the populations of those countries where such knowledge may not be readily accessible. (Source : FAO Policy on Open Access. Office of Corporate Communication (OCCI) <http://www.fao.org/3/i9231en/I9231EN.pdf>)

### 5.1 Appendix 1: WECAFC – iMarine SLA draft

To be drafted

### 5.2 Appendix 2: WECAFC RDB data viewer terms of use

To be drafted