

May 2021



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## WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)

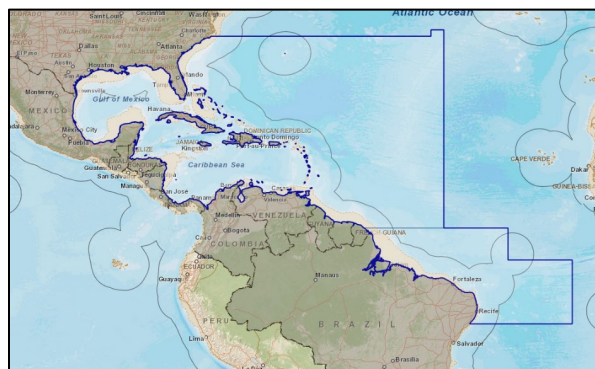
Extended session of the Second meeting of the WECAFC-CRFM-OSPESCA Fisheries Data and Statistics Working Group (FDS-WG)

Virtual Meeting, 25-28 May 2021

Interim Data Collection Reference Framework V0.6

# Interim Data Collection Reference Framework

Version 0.6



## Version History

<b>Number</b>	<b>Description</b>	<b>Author</b>	<b>Date (dd/mm/yyyy)</b>
0.1	Creation and tasks development / enrichment	June Masters Nancie Cummings Marc Taconet Yann Laurent	21/04/2017
0.2	Final version for distribution to WG-FDS1 with external revision	David Ramm Nancie Cummings Yann Laurent	23/04/2018
0.3	Incorporate External Review Feedback from v0.2 Ready for distribution to virtual SAG	Nancie Cummings Marc Taconet Yann Laurent Yvette DieiOuadi Jennifer Gee June Masters	13/05/2019
0.4	Incorporate SAG review Ready for presentation to WECAFC 17	Nancie Cummings Marc Taconet Yann Laurent Yvette DieiOuadi	01/07/2019
0.5	Final version for distribution to WG-FDS2	Marc Taconet Nancie Cummings James Geehan Yann Laurent Aureliano Gentile Jennifer Gee	12/10/2020
0.5.1	Post-FDS_WG2, implementing comments from the October 2020 meeting of the WG Restructured Appendices	Nancie Cummings Marc Taconet	28/03/2021
0.6	Final version for distribution to WG-FDS2 extended session	Nancie Cummings Marc Taconet Yann Laurent James Geehan	16/04/2021

## TABLE OF CONTENTS

1	Purpose and background	1
1.1	About WECAFC	1
1.2	About the Data Collection Reference Framework (DCRF) and its development process	3
1.2.1	Background	3
1.2.2	The DCRF manual	5
1.2.3	Features of the DCRF	6
2	Definitions	8
3	Structure of data collection	8
3.1	The different needs for data in the WECAFC region	8
3.2	WECAFC Data Sharing and Access Policies	13
3.3	Components of the Data Collection Framework	13
3.3.1	Task I: Regional Statistics	13
3.3.1.1	Task I.1: Fishing Capacity and total nominal catches	14
3.3.1.2	Task I.2: Nominal catches by species and sub-areas (Statlant)	17
3.3.2	Task II: Catch and effort	19
3.3.2.1	Task II.1: Catch	19
3.3.2.2	Task II.2: Effort by fleet segment / geartype	21
3.3.3	Task III: Fleet	22
3.3.3.1	Task III.1: Fleet engaged by fishery	22
3.3.3.2	Task III.2: Vessel registry	25
3.3.4	Task IV: Biological information	27
3.3.4.1	Task IV.1: Size data	27
3.3.4.2	Task IV.2: Catch at Size data	30
3.3.5	Task V: Endangered, Threatened, Protected (ETP) species catches	32
3.3.6	Task VI: Socio economics	33
3.3.6.1	Task VI.1: Employment	33
3.3.6.2	Task VI.2: Participation in fishing activities	34
3.3.6.3	Task VI.3: Value of catches	36
4	Appendix	39

4.1	Appendix 1 - List of WECAFC country/territory codes (M49)	39
4.2	Appendix 2 - Spatial units for fishing zones (WECAFC subareas/divisions)	42
4.2.1	Introduction	42
4.3	Appendix 3 - WECAFC – List of species, fisheries and stocks	45
4.3.1	Appendix 3.1 - WECAFC Reference list of aquatic species	45
4.3.2	Appendix 3.2 - List of national fisheries in the WECAFC competence area	92
4.3.3	Appendix 3.3 - List of stocks - national and shared - in the WECAFC competence area	100
4.4	Appendix 4 - Fleet segment - vessel type / length class	112
4.4.1	Introduction	112
4.4.2	Appendix 4.1 Fleet segment - vessel types by length classes	113
4.5	Appendix 5 - Fishing Practice	114
4.5.1	Appendix 5.1 - Fishing Gear	114
4.5.2	Appendix 5.2 - Fishing Mode	116
4.5.3	Appendix 5.3 - Fishing Effort	117
4.5.4	Appendix 5.4 - Effort measurement by fleet segment	119
4.6	Appendix 6 - Biological references – work in progress	120
4.6.1	Appendix 6.1 - Fish length measurement standards	120
4.6.2	Appendix 6.2 - Scales of maturity stages	121
4.6.3	Appendix 6.3 - Growth models adopted by WECAFC for primary species	126
4.6.4	Appendix 6.4 - Conversion factors adopted by WECAFC for primary species	126
4.7	Appendix 7 - Socio-economics (Age groups, Currency, ...)	130
4.7.1	Appendix 7.1 - Age groups	130
4.7.2	Appendix 7.2 - Currency	131
4.8	Appendix 8: Questionnaires and data submission schedule	132
4.9	Appendix 9 - Glossary	133

### List of tables

Table 1: DCRF Task summary highlighting purpose, data requirements, and reference to WECAFC Resolutions and Recommendations.....	10
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### List of figures

Figure 1: WECAFC Competence Area .....	1
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## Acronyms and Abbreviations

ABNJ	Areas Beyond National Jurisdiction
ASFIS	Aquatic and Science Fisheries Information System
BS	Biological Sampling
CARICOM	Caribbean Community
CCCFP	Caribbean Community Common Fisheries Policy
CITES	Convention on International Trade in Endangered <i>Species</i>
CF	Conversion Factor
CPUE	Catch Per Unit of Effort
CRFM	Caribbean Regional Fisheries Mechanism
CWP	Coordinating Working Party on fishery statistics
DANIDA	Danish Development Cooperation
DCRF	Data Collection Reference Framework
EAF	Ecosystem Approach to Fisheries
EEZ	Economic Exclusive Zone
ETP	Endangered, Threatened and Protected (species)
EU	European Union
FAD	Fishing Aggregating Device
FDS-WG	Fisheries Data and Statistics Working Group
FIRMS	Fisheries and Resources Monitoring System
FMP	Fishery Management Plan
GFCM	General Fisheries Commission for the Mediterranean
GRT	Gross Registered Tonnage
GT	Gross Tonnage
hp	horse power
ICCAT	International Commission for the Conservation of the Atlantic Tunas
ICM	Interim Coordination Mechanism
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
ILO	International Labor Organization
IMO	International Maritime Organization
IOTC	Indian Ocean Tuna Commission
IRCS	International Radio Call Sign
ISO	International Organization for Standardization
ISSCFG	International Standard Statistical Classification of Fishing Gears
ISSCFV	International Standard Statistical Classification of Fishery Vessels
IUU	Illegal, Unregulated and Unreported fishing
kW	kiloWatt
LOA	Length OverAll
OBS	Observer
OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centroamericano
PS	Port Sampling

PSMA	Port State Measures Agreement
RFB	Regional Fishery Body
RFMO	Regional Fishery Management Organization
SEAFDEC	Southeast Asian Fisheries Development Center
SPAW	Specially Protected Areas and Wildlife
SU	Scientific sUrvey
t-RFMO	tuna Regional Fishery Management Organization
UN	United Nations
WECAFC	Western Central Atlantic Fishery Commission
WGFDS	Working Group on Fisheries Data and Statistics
WPAMSR	Working Party on Assessment of Marine Fishery Resources

# 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. Regional Fishery Bodies do not have the authority to issue binding advice for its members.

The WECAFC area covers nearly 15 million km<sup>2</sup> of marine area extending from Cape Hatteras in North Carolina, United States of America (35°N) to south of Cape Recife, Brazil (10°S). This area covers the south-east coast of the United States, the Gulf of Mexico, the Caribbean Sea and the north-east coast of South America. Approximately 51% of the mandate area is in areas beyond national jurisdiction (ABNJ) and around 81% corresponds to waters with depths greater than 400 m. Except for Northern Brazil which is included in FAO Area 41, the rest of the management area corresponds to FAO Area 31 (Fig. 1).

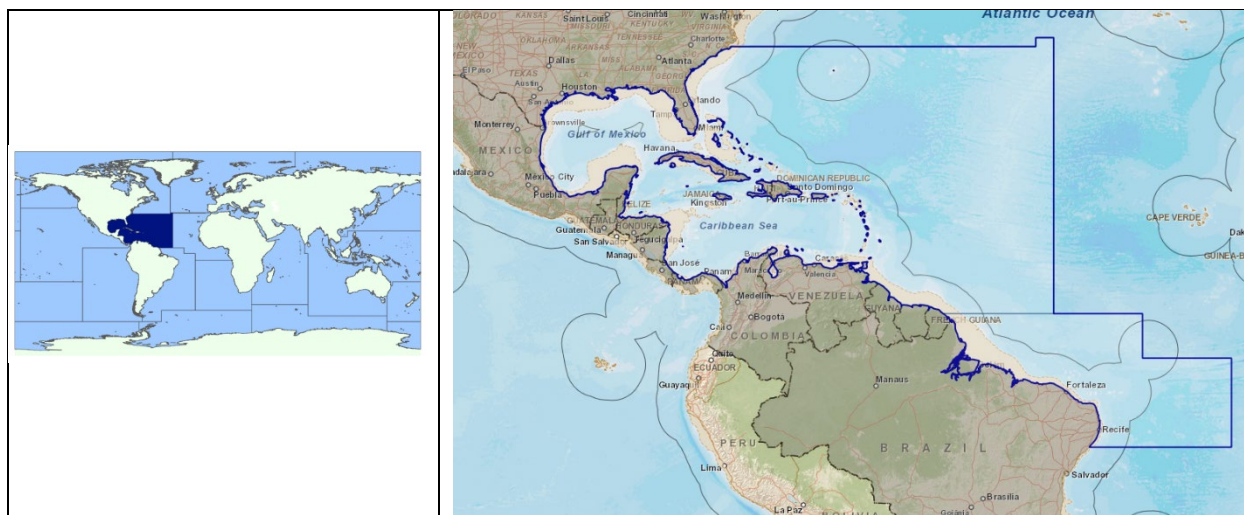


Figure 1: WECAFC Competence Area

Currently the Commission has 34 members, including the European Union.

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. At the 16th Commission Members Adopted Resolutions that 1) Members contribute to the RDB through the FDS-WG and provide national data and statistics according to the guidelines of the interim DCRF and 2) build on

best practice guidelines for logbooks, and contribute to developing and updating national inventories of fisheries and resources.

The Commission during its 16<sup>th</sup> session<sup>1</sup> 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).

The most recent Commission session (17<sup>th</sup>) convened in 2019 in Miami, Florida (USA) with 28 members participating. Observers from four Regional Fishery Bodies (RFBs) and four intergovernmental organizations also participated. The Commission adopted eleven regional fisheries management recommendations respectively on: 1) conservation and management of sharks and rays in the WECAFC Area, 2) on the management of Caribbean spiny lobster in the WECAFC Area, 3) on the regional data access and sharing policies, 4) on management of shrimp and groundfish resources of the North Brazil-Guianas Shelf in the WECAF Area, 5) on improved compliance with trade measures for Queen conch, 6) on Queen conch conversion factor, 7) on the monitoring and control of transshipment at sea, 8) on the application in the region of the technical guidelines on methodologies and indicators for the estimation of the magnitude and impact of Illegal, Unreported and Unregulated (IUU) fishing, 9) on the marking of fishing gear, 10) Amendment to WECAFC/17/2019/21 on the sustainability of fisheries using moored fish aggregating devices in the WECAFC area, 11) on the WECAFC interim Data Collection Reference Framework (iDCRF), 12) on the List of Main Species for data collection in the WECAFC area, 13) on the sustainable management of spawning aggregations and aggregating species.

More specifically on data and statistics, Members adopted Recommendations that: 1) Members endorses the structure and concept of developing a list of main species, according to guidance provided through the Interim DCRF on harmonization of collection of data and statistics, including socio-economic data, based on several selection supporting criteria by the FDS WG-1, 2) endorses the Interim Data Collection Reference Framework (DCRF), as a foundation for fisheries data and statistics collection and collation to feed the needs of developing, monitoring, assessing and reviewing regional fisheries policies, taking into account the need for adaptive review, 3) Members promote the provision of national data and statistics to the WECAFC-CRFM-OSPESCA Regional DataBase (RDB) according to the Interim DCRF, and 4) Members encourage strengthened collaboration between the FDS-WG and thematic working groups to refine and keep updated the DCRF and associated data sharing policies, taking into account the input from all members.

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<sup>1</sup> <http://www.fao.org/3/a-bo086e.pdf>



## 1.2 About the Data Collection Reference Framework (DCRF) and its development process

The WECAFC Data Collection Reference Framework (DCRF) is the first instrument to establish the foundation for comprehensive fisheries data and statistics collection and collation in the WECAFC area. The DCRF will feed the needs of developing, monitoring, assessing and reviewing regional fisheries policies such as FMPs as needed by any regional or sub-regional RFB. The ultimate aim of the DCRF is to provide a path for achieving improved data collection in the entire region for informing regional and sub-regional management plans. The DCRF should be reviewed by relevant bodies in the WECAFC area (e.g., CRFM, OSPESCA, etc.,) to accommodate needed improvements and requirements from the Commission, including new recommendations.

### 1.2.1 Background

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. This resulted in increasing the already significant existing gaps in very basic information, making 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 using up to date fishery statistics became increasingly difficult, and the rapid increase in Fish Aggregating Devices (FADs) fisheries in the 1980's and 1990s has exacerbated the situation. As a result, fishery management in the WECAFC region has become even more challenging and decisions have been 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.<sup>2</sup> As recent as 2015 it was estimated that 54% of the species or species groups were considered overfished or over-to-fully fished in the WECAFC region<sup>3</sup>. 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 the establishment of the WECAFC-FIRMS partnership in 2014 which among other results led to the establishment of WECAFC Data and Statistics Working Group in 2016. Moreover, data

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<sup>2</sup> <http://www.fao.org/3/a-i6204c.pdf>

<sup>3</sup> <http://www.fao.org/fi/static-media/MeetingDocuments/WECAFC/WECAFC17/3Reve.pdf>

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 the 15<sup>th</sup> session of the WECAFC Commission 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, Fisheries and Resources Monitoring System (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 achievement outputs respectively were: 1: FIRMS regional inventories published<sup>4</sup> and capacity built for national inventories in a few pilot countries, 2: Plans developed<sup>5</sup> for strengthening national and sub-regional capacity in data collection and data sharing in support to WECAFC fishery management plans, and 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>6</sup>.

WECAFC-FIRMS phase II (implemented in 2017/2018) was a continuation of the WECAFC-FIRMS Phase I project and primarily was in support of the mandate of the Working Group on Fisheries Data and Statistics (FDS-WG), agreed by the Members during WECAFC 16<sup>th</sup> Commission Session which convened in Guadeloupe in June 2016. The Phase II project support focused on agreements regarding minimum data requirements for fisheries under management plans, and on the governance and operationalization of the WECAFC Regional Database, including development of a regional data collection reference framework (DCRF) and documentation of best practices for logbooks and data sharing policies and guidelines.

WECAFC-FIRMS phase III is a continuation of the WECAFC-FIRMS phase II project and is primarily supporting the activities of the WECAFC Fisheries Data and Statistics Working Group. Three main priorities have been identified: 1) the organization of the WG's second meeting, 2) the operationalization of the WECAFC regional database by developing national capacity to upload data in the system, and 3) the reinforcement of national capacities in fisheries data and statistics.

The general objective of WECAFC is to promote the effective conservation, management and development of the living marine resources of its area of competence, in accordance with the FAO Code of Conduct for

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<sup>4</sup>[http://firms.fao.org/figis/website/FIRMSSearch.do?dslist\[0\]=fishery&refxml=false&startrow=1&bsize=15&lixsl=webapps/figis/firms/format/searchfsfirmslist.xml&kw\[0\]=institution&kv\[0\]=WECAFC&logop=and](http://firms.fao.org/figis/website/FIRMSSearch.do?dslist[0]=fishery&refxml=false&startrow=1&bsize=15&lixsl=webapps/figis/firms/format/searchfsfirmslist.xml&kw[0]=institution&kv[0]=WECAFC&logop=and)

<sup>5</sup> FAO, 2018. Report of technical workshop on global harmonization of Tuna fisheries statistics, March 2018

<sup>6</sup> WECAFC-FIRMS data workshop. <http://www.fao.org/3/a-i5789e.pdf>

Responsible Fisheries (CCRF)<sup>2</sup>, and to address common problems of fisheries management and development faced by members of the Commission. Accordingly, the collection and quality of data and information is a crucial requirement for effective management, thus consideration of the quantity, quality and comprehensiveness are required.

### 1.2.2 The DCRF manual

This manual outlines the primary principles of the DCRF through providing the main indications for data collections by WECAFC members in a standardized way such to inform relevant WECAFC bodies with minimum information needed for stock assessment and monitoring.

The DCRF manual has been drafted under the WECAFC-FIRMS Phase II project with the goal of collection and collation of information to feed the needs of developing, monitoring, assessing and reviewing regional fisheries policies such as FMPs as required by any regional/sub-regional fishery body. In that regard, inspiration was sought from RFBs and RFMOs DCFs (e.g., the General Fisheries Commission for the Mediterranean (GFCM) through the 2016 GFCM Data Collection Reference Framework<sup>7</sup> and further from International Commission for the Conservation of the Atlantic Tunas (ICCAT)<sup>8</sup>. Improvements on this first version were further accomplished from inputs of multiple species Working groups (Joint Spiny Lobster, March 2018 Dominican Republic; Northern Brazil Shelf Shrimp and Groundfish, Barbados October 2018).

The manual is organized as follows: Working Definitions, Structure of data collection, and Supplemental Appendices providing WECAFC standard classifications.

The first formal version (v0.4, 2018.1) was reviewed by the Ninth Session of the Scientific Advisory Group (SAG) in November 2018 and eventually presented for endorsement at WECAFC 17 in July 2019, which endorsed it as an Interim document (i-DCRF). This manual is to be further enriched through several accompanying documents of which two initial documents include: Data Access and Sharing Policies, and Regional Guidelines for Logbooks.

Following WECAFC 17, the Interim DCRF was further enriched from Member comments/input received on the version presented at SAG through January 2019. Further modifications were then brought before FDS-WG2 Preparatory sessions that convened virtually in October 2020. The modifications brought after these Preparatory sessions incorporated comments received during these Preparatory sessions in order to ready a more-advanced version for review by FDS-WG2 in October 2020.

The FDS-WG2 recognized that the DCRF represents a data and statistics standards framework, harmonized with other reporting frameworks (e.g. FAO, ICCAT, WECAFC Members frameworks) while encompassing supplementary flexible provisions for the region, and strives aiming at collecting robust, harmonized and comparable fisheries data addressing end-users needs.

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<sup>7</sup> <http://www.fao.org/gfcm/data/dcrf/en/>

<sup>8</sup> <https://www.iccat.int/en/submitSTAT.htm>

The FDS-WG2 also recognizes that the DCRF should ensure compatibility with existing data collection frameworks already implemented by WECAFC members and should be aligned with the mandate of WECAFC to avoid any duplication in data collection processes in the region and foster optimization of resources already allocated to data collection mechanisms (e.g. avoid duplication of data collection tasks/work/resources covered by other organizations such as ICCAT).

The FDS-WG2 acknowledges that the DCRF v0.6 serves a minimum of two purposes currently:

- A. Capacity building tool, which can be used by countries as a reference standard framework to set-up national data collection and information systems for all aquatic marine species.
- B. An instrument to support science based conservation and management of marine biological resources under the mandate of WECAFC, the mandate and priorities of WECAFC-CRFM-OSPESCA Interim Coordination Mechanism (ICM), by implementing a modular task oriented structure articulated currently around four supporting bases for reference list of species, through an incremental approach to implementation for some countries.

### 1.2.3 Features of the DCRF

This current version 0.6 implements changes as per the recommendations made during the October session of FDS-WG2 to adopt the rationale of facilitating operationalization of the DCRF for the proposed modified structure including Objectives, Scope, and clearly defined Rules for implementing the general Data access and sharing policy. The FDS-WG2 agreed to improve the Task description by i) articulating the Tasks on well-defined WECAFC objectives; ii) refining a scope clearly aligned with WECAFC objectives, mandate and taking into account capabilities of the Member countries; and by iii) providing informative and acceptable/workable Data access and sharing rules.

Version 0.6 implements the following structure:

- an '*Objectives*' header identifying how the collected data relates with WECAFC assessment and/or management strategies
- a '*Scope*' header defining boundaries of the data collected, e.g. sets the list of concerned species for the Task
- '*Rules*' are defined for access and sharing and are proposed under "Data access and sharing rules"

**DCRF Features**

- Indications of main themes of data collection ('tasks') and the objectives these respond to
- Description of data variables by tasks
- Scope for Tasks' data
- Concepts of data aggregation and frequency of reporting
- Data access and sharing rules
- Identification of concept of species lists for which data collection is encouraged according to varying categorization (in this version, 4 bases)
- Identification of relevant operational units (e.g., fleet segment/vessel mapping schema, mode of fishing, gear, spatial unit of fishing)
- Biological references (e.g., conversion factors, growth schedules, maturity schedules, etc..).
- Questionnaires
- Glossary of terms

## 2 Definitions

A **glossary** is available in appendix 9 with all the concepts and controlled terms definitions presented in alphabetical order. Here follows a few important working definitions.

**Fish:** The term “fish” refers to all species of living marine resources, whether processed or not (Port State Measures Agreement - PSMA<sup>9</sup>).

**Species:** The term ‘species’ is also used herein in the broad sense and refers to both individual species (e.g.: *Epinephelus striatus*, Nassau grouper) and in cases where identification of individual species is problematic to species groups (e.g.: *Epinephelus* spp., Groupers), acknowledging the preference of using individual species.

**Species group:** The term ‘species group’ refers to a collection of species which have been grouped together, often because these species are difficult to differentiate without detailed examination (very similar species) or because data for the separate species are not available (e.g. in fishery statistics or commercial categories) (SEAFDEC handbook on data collection<sup>10</sup>).

## 3 Structure of data collection

### 3.1 The different needs for data in the WECAFC region

Needs for data at the level of the WECAFC are of varying natures in alignment with specific needs and aims of managers and stakeholders in the context of the Ecosystem Approach to Fisheries (EAF). Stock assessment derives from a need to monitor, evaluate and assess status, especially for the shared and/or straddling and transboundary stocks such as flying fish, dolphin fish, wahoo and resources considered overfished and/or threatened (e.g., some of the shark and ray species). It is also essential to provide evidence based statistics to support monitoring and management of shared fishery resources (implementation and monitoring of regional fishery management plans, planning for regional registry of vessels as two of many examples). Finally, in addition to the above environmental dimensions, a set of minimum statistics are required to take into account the social and economic dimensions in policy making and management decisions.

The DCRF recognizes the importance of area based information on national fleets, catch, effort and biological data for main and/or other reference species, including discards and incidental catches. Additionally, it is recognized that socio-economic, notably employment and price data, are required to characterize fishing operations, enterprise, employment trends and national capacities. WECAFC members should strive to collect and submit information of the highest quality and submit such statistics in a timely

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<sup>9</sup> <http://www.fao.org/fishery/psm/agreement/en>

<sup>10</sup> <http://www.seafdec.org/download/handbook-on-collecting-fishery-statistics/#>

manner. To respond to these different needs, the WECAFC data collection framework is divided in six (6) tasks as described below.

**DCRF Tasks**

Task I – Regional figures of national fisheries

Task II – Catch and effort (landing data, catch data per species)

Task III – Fleet statistics, and Vessels

Task IV – Biological information

Task V – Incidental catches

Task VI – Socioeconomics

**Note for reviewers:** the description of the Tasks and the following Table 1 have been revised to better describe the objectives of data collection and how these respond to WECAFC policies and management strategies

Aquaculture is not considered here and shall be subject to another data collection framework document. Recreational fishing can be considered here as an additional fleet segment. It should be revised and endorsed by the Commission.

Table 1 describes in more details the data requirements of the DCRF, together with its main purposes and the relation to current data requirements described in existing WECAFC Resolutions and Recommendations.

Table 1: DCRF Task summary highlighting purpose, data requirements, and reference to WECAFC Resolutions and Recommendations.

DCRF Tasks					
ID	Task	Sub-task	Data	Purpose and Description	WECAFC Resolution / Recommendation
I	Regional Statistics	Provide a regional summary overview of the fishery sector’s Fishing capacity <sup>11</sup> by country in terms of inputs (quantity of operating fishing fleet), and outputs (biomass removed from the ecosystem by fishing operations). This is fundamental to monitor the status of stocks as well as the impact of fishing on fish populations, and to support the management of fishing capacity for sustainable fisheries.			
		I.1 Fishing capacity  (This Task can be generated for WECAFC with global statistics provided to FAO)	Number of active Fishing Vessels / Total Capacity (GT) / Engine Power (Kw) Total Nominal Catch  by year  by Flag state by <i>Fleet segment</i> , by Subarea.	Provide a general summary overview of the fishery sector of each country in the wider Caribbean region, with an indication of total fleet capacity and total nominal catches, reported [if possible by Fleet segment and] for subareas relevant to WECAFC.	Interim endorsement at WECAFC 17/2019/22
		I.2. Landings  (Statlant A – a breakdown by subareas of FAO Catch questionnaire NS1)	Nominal Catch  by year  by Flag state by Subarea by Species	The regional overview of Nominal Catches by country, species and subareas for all aquatic species provides the overall reference for fisheries total removals in each subarea, and allows to monitor catch trends by species among subareas, a key aspect of Ecosystems and Climate Change/natural disasters impacts assessment.	
II	Catch and effort	Provide key fisheries monitoring data on Catch and Effort in support of/for management and stock assessment at either national or regional levels (with estimates of target and by-catch species / nominal, retained, or discarded catches / dead or live)			
		II.1. Catch	Nominal Catch / retained Catch / discarded Catch  by year  by Flag State, by Fleet segment, by Fishing mode by Subarea, by Species (all aquatic species)	Catches, provided on a yearly basis by fishing unit <sup>12</sup> , are for most fisheries defined in weight units as the total weight of catches (in live weight equivalent), and in number of individuals regarding discards, or for certain tuna fisheries.	Interim endorsement at WECAFC 17/2019/22

<sup>11</sup> The FAO technical guidelines developed to support the implementation of the IPOA for the Management of Fishing Capacity define fishing capacity as “the amount of fish or fishing effort that can be produced over a period of time by a vessel or a fleet if fully utilized. That is, if effort and catch were not constrained by restrictive management measures”.

<sup>12</sup> a fishing unit is here materialized as the combination of Flag State x Fleet segment x Fishing mode x Subarea x Species



DCRF Tasks					
ID	Task	Sub-task	Data	Purpose and Description	WECAFC Resolution / Recommendation
		II.2. Effort by fleet segment	Days Fishing Nominal Effort Fishing Vessel Count  by year  by Flag State, by Fleet segment, by Fishing mode, by Subarea.	The Fishing effort deployed on a yearly basis by national flagged Vessels, reported by Fleet segment, [gear type, and] Fishing mode, and subarea, with catches (and landings) for the corresponding Fishing units <sup>23</sup> reported in Task II.1	Interim endorsement at WECAFC 17/2019/22
III	Fleet, and Vessels	Data on Vessels is critical for Monitoring, Control and Surveillance, and provide the sources for the planned regional vessel registry as envisaged in support of/for regional fishery management plans. Data on Fleets engaged by fishery provide additional fisheries monitoring data in support to assessment and management of fishing capacity.			
		III.1. Fleet by primary gear and target species (or fishery)	Number of active vessels potentially or actually engaged in a fishery, i.e.  by Subarea, by Fleet segment, by target Species.	Provide first level fisheries monitoring data on Nominal Effort engaged by fishery, in support of/for management at either national or regional levels. Nominal effort by fishery is expressed in terms of capacity (Number vessels, GT, KW) by Subarea, fleet segment and target species.	Interim endorsement at WECAFC 17/2019/22
		III.2. Vessel registry	Vessel descriptors	Regional vessel registry fed by the national vessel records or registries	Interim endorsement at WECAFC 17/2019/22
IV	Task IV: Biological information	Biological data are key to population dynamic studies, regional or national stock assessment in support to fisheries management, stock status determination e.g. in the context of indicator SDG14.4.1			
		IV.1: Size data	Total Retained Catch (weight) Total discarded catch Total weight of samples Length class /sex/maturity Number of individuals at length Total weight of Individuals	Size frequencies of the samples (nominal and raised) measured for each species (retained and discarded), and reproductive state of individuals for selected species, classified by major fleet, gear sample units, time strata, area strata, and sex for select species	Interim endorsement at WECAFC 17/2019/22
		IV.2: Catch at Size data	Length Class/Sex/ Stage of Maturity Total Weight of Individuals Total Catch	Reported catch at size (raised to Task II Catch data) classified by primary fleet, gear, species, time unit, area, and by sex (for select species)	Interim endorsement at WECAFC 17/2019/22
V	Endangered, Threatened, Protected (ETP) species catches	To conserve natural resources through sustainable fisheries, bycatch of marine endangered species such as seabirds, sea turtles, elasmobranchs and marine mammals must be quantified with the goal to assess fisheries impacts on the ecosystem and to control mortality to levels below those that threaten the conservation status of endangered species.			
		V.1 Catches ETP	Landings (in numbers or weight as appropriate) Number of discards alive (in numbers or weight as appropriate)	The bycatch concerning endangered, threatened or protected (ETP) species are reported, whether landed,	Interim endorsement at WECAFC 17/2019/22

DCRF Tasks					
ID	Task	Sub-task	Data	Purpose and Description	WECAFC Resolution / Recommendation
			Number of discards dead (in numbers or weight as appropriate)	discarded dead or discarded alive.	
VI	Socio economics	Provide primary data for monitoring the economic and social status of the fishing sector in support to appropriate policies and strategies, especially in relation to promoting fishing as a source of livelihoods thanks to the long-term sustainability of resources and fleets.			
		VI.1: Employment	Number of fishers by Country by Sub-area by time-use, by gender, by age group (for primary sector only)	Employment in the fishery sector is a useful indicator of the importance of the fishery sector in the region, with specific attention to be paid to gender, youth, decent/child labour, and more generally to the dynamics of populations engaged in fishing activities.	Interim endorsement at WECAFC 17/2019/22
		VI.2: Engagement in Fisheries	Count of fishers Count of fishers x days fishing	The engagement in fisheries, measured by the number of fishers actively taking part to fishing activities and the intensity of such involvement, is key for assessing the productivity of manpower, the assessment of individual income levels, and overall the social impact of management decisions on specific fisheries.	Interim endorsement at WECAFC 17/2019/22
		VI.3: Value of catches	Total nominal catch Unit price by species Total Value  by year by Country	The monetary value of total capture fisheries production at first sale after landing, in local currency then converted into US\$.	Interim endorsement at WECAFC 17/2019/22

## 3.2 WECAFC Data Sharing and Access Policies

All data transmission are subject to WECAFC data sharing and access policy as per general principles and implementation options defined in the document “WECAFC fisheries data sharing policies and guidelines”<sup>13</sup>.

Submitted data should in principle be made publicly available, however the data access and sharing rules address details regarding the steps of the validation process as well as relevant levels of aggregation for published data, and confidentiality rules. Tasks specific to Data access and sharing rules are here drafted, with the understanding that in their final version these will be approved by the Commission as the result of a consultative process involving the FDS-WG, the WECAFC-WGs, and the SAG.

## 3.3 Components of the Data Collection Framework

This section introduces the structure and how data will be collected/called for.

### DCRF Task Components

- Main objective(s) supported by the Task
- Description of Task
- Scope
- Countries involved
- Data to be Reported
- Frequency and Deadline of Reporting
- Data Access and Sharing rules

### Note for reviewers:

The Tasks below have been revised taking into account that FDS-WG2 October meeting agreed to modify the structure, adding Objectives, Scope, and Rules (in data access and sharing). Reviewers are requested to carefully review these aspects, and comment on the proposed species bases included in the Scope paragraphs

### 3.3.1 Task I: Regional Statistics

<sup>13</sup> <http://www.fao.org/fi/static-media/MeetingDocuments/WECAFC/FDSWG/2018/5e.pdf>

**Note for reviewers:**

Task I regional statistics have been revised according to directions proposed at the FDS-WG2 October meeting

**Objective**

Task I aims to provide WECAFC with a summary overview of the fishery sector's Fishing capacity<sup>14</sup> in terms of inputs (quantity of operating fishing fleet) and outputs (biomass removed from the ecosystem by fishing operations), by country and in the wider Caribbean region. This is fundamental so as to monitor the status of stocks as well as the impact of fishing on marine resource populations, and to support the management of fishing capacity for sustainable fisheries.

## 3.3.1.1 Task I.1: Fishing Capacity and total nominal catches

**Objective**

To provide a general overview of the fishery sector in each country, with an indication of total fleet capacity and total nominal catches for sub-areas relevant to WECAFC.

**Description**

Total fleet capacity and nominal catches for subareas relevant to WECAFC and reference year.

**Note for reviewers:**

The Data reported in this task are in principle the sum of other indicators available in Task II.1 (for nominal catches) and Task III.1 (for Fleet by subarea), and therefore Totals must be aligned. This principle is true at national database level. At regional level, this principle depends on decisions regarding species included in the scope for reporting to the RDB, and in case species are not be specifically included in the regional reporting, how these would be summarized as e.g. nei category.

Note from GFCM: fleet segments could be merged (i.e. aggregating vessel length classes) if they have similar exploitation patterns (targeting the same species), and exploiting the same portion of the population (i.e. juveniles or adults)

**Scope**

Recommended at country level and for upload to the Regional database for all species of the WECAFC Reference list of species for which Nominal catches are available at Fleet segment and subarea levels.

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<sup>14</sup> The FAO technical guidelines developed to support the implementation of the IPOA for the Management of Fishing Capacity define fishing capacity as “the amount of fish or fishing effort that can be produced over a period of time by a vessel or a fleet if fully utilized. That is, if effort and catch were not constrained by restrictive management measures”.

Total catches and numbers of vessels should be reported for all vessels flagged under member countries in the WECAFC areas (including distant water fishing fleet vessels also registered under member countries in the WECAFC area).

### Countries involved

All WECAFC countries

### Data to be reported

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter</i>	<i>Optional, and for specific sub-sets (if available in the member country)<sup>(2)</sup></i>
<i>Fleet Segment</i>	<i>See appendix 4 for fleet segment definition</i>
Area	“Area 31” is compulsory, subareas are optional and can be aggregated at Area 31 level. In any case, national figures must be provided for the fishing activities taking place in the WECAFC area See appendix 2 for regional subareas’ definition
Nominal Catch	Weight of total landed fish for the given species in live weight equivalent (in tonnes), by fleet segment and for the reference year (or quarter)
Active Fishing Vessel Count	Total number of active fishing vessels during the reference year (or quarter) by fleet segment (see Appendix 4 for fleet segment definitions)
Total Capacity (GT)	Total capacity, in gross tonnage (GT), of all active fishing vessels by fleet segment in the reference year (or quarter) (see appendix 4 for fleet segment)
Total Engine Power (kW)	Total main engine power, in kilowatt (kW) <sup>(1)</sup> , of all active fishing vessels by fleet segment in the reference year (or quarter)

<sup>(1)</sup> 1 hp = 0.7457 kilowatt (kW).

<sup>(2)</sup> Optional means that this information can be reported if and when relevant to the member country.

### Frequency and deadline of transmission

Once a year prior to the end of the first semester of the following year.

**Data access and sharing rules** (see section 3.2)

- *first submission accessible to concerned Member country and FAO data manager for validation.*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing*
- *eventually publicly available*

### 3.3.1.2 Task I.2: Nominal catches by species and sub-areas (Statlant)

**Objective**

The regional overview of total catches by country, species and sub-areas for all species of the WECAFC Reference list of species provides the overall reference for fisheries total removals in each subarea, and allows to monitor catch trends by species among subareas, a key aspect of Ecosystems and Climate Change impacts assessment.

**Description**

Total catch should be considered as the weight of the total yearly catches, including retained catch (landings) and the discarded quantities (discards). This sub-task is a breakdown by subarea of the questionnaire NS1 submitted by countries to FAO.

**Scope**

Recommended at country database level and for upload to the Regional database for all species of the WECAFC Reference list of species.

Total catches should be reported for all vessels flagged under member countries in the WECAFC areas (including distant water fishing fleet vessels also registered under member countries in the WECAFC area).

**Countries involved**

All WECAFC countries

**Data to be reported**

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter</i>	<i>Optional, and for specific sub-sets (if available in the member country)(2)</i>
Area	See appendix 2 for regional subareas' definition
Species	See appendix 3.1 for the main commercial species (scientific name)
<i>Retained Catch</i>	<i>Optional: Weight of retained species (including landed catches or catches retained for other uses<sup>15</sup>), for the given species in live weight equivalent (in tonnes) for the reference year or quarter</i>
<i>Discarded Catch</i>	<i>Optional: Weight or numbers of discarded species, for the given commercial species in live weight equivalent (in tonnes) for the reference year or quarter</i>
Nominal Catch per species	Weight of total landed fish for the given species in live weight equivalent (in tonnes)

**Frequency and deadline of transmission**

Once a year prior to the end of the first semester of the following year.

**Data access and sharing rules (see section 3.2)**

- *first submission accessible to concerned Member country and FAO data manager for validation.*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing*
- *eventually publicly available*

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<sup>15</sup> The term 'retained catch' refers to the component of the catch which is retained on board the fishing vessel (including catches landed plus catches retained for other uses, such as consumption by the crew, utilization as bait, quantities for home consumption) and reported as the total live weight of fish and other organisms retained, and in some fisheries the number of individuals retained.



### 3.3.2 Task II: Catch and effort

#### **Objective**

Provide key fisheries monitoring data on Catch and Effort in support of/for management and stock assessment at either national or regional levels (e.g., landing data, catch data per species, fleet segment/geartype, effort).

#### 3.3.2.1 Task II.1: Catch

#### **Description**

Nominal catches (target and by-catch species), retained and discarded (dead and live) catch estimates, provided on a yearly basis by Fleet segment-[Geartype]-Fishing mode and subarea, with the corresponding fishing effort provided in Task II.2.

A statistical Fishing unit is materialized in this Task by the Fleet segment, associated [geartype and] Fishing mode, deployed in a fishing area, and catching a specific species.

Catches are defined in number of individuals as all the fish removed during the fishing activities whether targeted or taken as bycatch: thus, the term “catches” encompasses retained fractions (supposedly all landed) and the discarded quantity (see definitions, section 2).

Catches are defined in weight units as the total weight of catches per species, area, fleet segment [and geartype], for the given year.

Weight is defined as the live equivalent (see appendix 3 for regional conversion factors - when available, national conversion factors should be shared with WECAFC).

It is acknowledged that discards are not collected in many countries in the WECAFC area. This is a target to be achieved. Reporting of discards is done on a “data availability” basis. Sampling resources should be put in place to collect these data as they are key for stock assessment and monitoring (see Section IV on biological data).

#### **Scope**

Recommended at the country level for group1 species of basis level 1, 2 or 3 of the main reference list. If additional data are available for other species (e.g. level 4), these may be reported as well. Finally while group2 species do not fall under the WECAFC mandate, it is recommended that countries also handle these species in accordance with ICCAT data requirements and in ways harmonized and consistent with group1 species.

Catch and effort should be reported for all vessels flagged under member countries in the WECAFC areas (including distant water fishing fleet vessels also registered under member countries in the WECAFC area).

Recommended at Regional Database level for all group1 species of basis level 1, 2, 3 of the main reference list.

#### **Countries involved**

All WECAFC countries.

**Data to be reported**

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter / Month</i>	<i>Optional, and for specific sub-sets as indicated at national level, or by specific WGs</i>
Fleet Segment	See appendix 4 for fleet segment definition
<i>Gear type</i>	<i>Optional, but recommended in particular for vessel categories of Fleet segment making use of multiple gears. See Appendix 5.1 for geartype codes from ISSCFG</i>
Fishing mode	See appendix 5.2 for fishing mode definition
Area	See appendix 2 for regional subareas' definition
Species	See appendix 3.1 for the main commercial species (scientific name)
Retained Catch	Weight of retained species (including landed catches or catches retained for other uses <sup>16</sup> ), for the given species in live weight equivalent (in tonnes) for the reference year or quarter
Discarded Catch	Weight of discarded species, for the given commercial species in live weight equivalent (in tonnes) for the reference year or quarter
Nominal Catch	Weight of total landed fish for the given species in live weight equivalent (in tonnes)

FDS-WG2 noted that in future developments, this indicator could be provided by Fishery as identified in the WECAFC-FIRMS inventory of fisheries.

**Frequency and deadline of transmission**

Once a year prior to the end of the first semester of the following year.

**Data access and sharing rules** (see section 3.2)

- *first submission accessible to the concerned Member country and FAO data manager for validation.*

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<sup>16</sup> The term 'retained catch' refers to the component of the catch which is retained on board the fishing vessel (including catches landed plus catches retained for other uses, such as consumption by the crew, utilization as bait, quantities for home consumption) and reported as the total live weight of fish and other organisms retained and in some fisheries the number of individuals retained.

- *integration of this submission by the FAO data manager in a wider dataset viewable by all Members of a specific [species] Working Group who have duly submitted their data, for validation of the data call by the WG as a whole*
- *eventually publicly available (and possibly at aggregated level)*

### 3.3.2.2 Task II.2: Effort by fleet segment / geartype

#### Description

The Fishing effort deployed by national flagged Vessels, reported on a yearly basis by fishery, with catches (and landings) of the corresponding Fleet segment-[Geartype]-Fishing mode and subarea reported in Task II.1.

A fishery is materialized in this Task by the combination of Fleet segment, Fishing mode [and gear type], target species, and subarea.

#### Scope

Recommended at the country level for all flagged fishing vessels actively fishing within the reference period in the WECAFC competence area, and conducting fishing operations catching group1 species of basis level 1, 2 and 3 of the main reference list. Where applicable at national level, it is also recommended that countries manage in similar ways fishing effort data for Vessels conducting fishing operations concerning other species (i.e. level 4). For Vessels conducting fishing operations concerning group2 species which do not fall under the WECAFC mandate, it is recommended that countries manage fishing effort data in accordance with ICCAT data requirements and in ways harmonized and consistent with WECAFC data requirements.

Recommended at Regional Database level for all flagged fishing vessels actively fishing within the reference period in the WECAFC competence area, and conducting fishing operations catching group1 species of basis level 1, 2 and 3 of the main reference list.

#### Countries involved

All WECAFC countries

#### Data to be reported

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter / Month</i>	<i>Optional (same as for Task II.1)</i>
Fleet Segment	See appendix 4 for fleet segment definition
<i>Gear type</i>	<i>Optional, but recommended in particular for vessel categories of Fleet segment making use of multiple gears.</i>

	<i>See Appendix 5.1 for gear type codes from ISSCFG</i>
<i>Target species</i>	<i>Optional See Appendix 3.1 for the main commercial species (scientific name)</i>
Fishing Mode	See Appendix 5.2 for fishing mode definition
Area	See Appendix 2 for regional subareas' definition
Days Fishing	Number of days spent fishing for the fleet segment/Fishing mode in the subarea for the reporting period
Nominal Effort	Value of Nominal effort for the fleet segment/Fishing mode in the subarea for the reporting period

FDS-WG2 noted that in future developments, this indicator could be provided by Fishery as identified in the WECAFC-FIRMS inventory of fisheries ([www.fao/firms/en](http://www.fao/firms/en)).

### **Frequency and deadline of transmission**

Once a year before the end of the first semester of the following year.

### **Data access and sharing rules** (same as section 3.3.2.1)

## **3.3.3 Task III: Fleet**

### **Objective**

Data on Vessels is critical for Monitoring, Control and Surveillance, and provide the sources for the planned regional vessel registry as envisaged in support of/for regional fishery management plans. Data on Vessels provides the framework for the regional vessel registry as per the regional fishery management plans, and is critical for Monitoring, Control and Surveillance. Data on Fleets engaged by fishery provide additional fisheries monitoring data in support to assessment and management of fishing capacity.

The FAO technical guidelines developed to support the implementation of the IPAO for the Management of Fishing Capacity define fishing capacity as “the amount of fish or fishing effort that can be produced over a period of time by a vessel or a fleet if fully utilized. That is, if effort and catch were not constrained by restrictive management measures..

### **3.3.3.1 Task III.1: Fleet engaged by fishery**

### **Objective**

Provide first level fisheries monitoring data on Nominal Effort engaged by fishery, in support of/for management at either national or regional levels.

**Description**

The engagement in a fishery can be “potential” when deducted from a vessel registry and licensing information, or “actual/realized” when deducted from actual monitoring of operations.

Potential engagement (i.e. Fishing capacity): the Fleet potentially engaged in a fishery by a Flag State is defined as the number of vessels of a given Fleet segment registered as “active” in the vessel registry with authorization/license to access a fishing area with certain fishing gear (optionally) and to fish certain target species (optionally). Alternative measures are Total GT and Kw.

Actual/realized engagement: the Fleet actually engaged in a fishery by a Flag State is defined as the number of vessels of a given Fleet segment active and actually operating in a fishing area with certain target species. Alternative measures are Total GT and Kw. Measuring actual/realized engagement requires identifying vessels according to their registration number in data collection at fishing operations level. .

According to the DCRF, a vessel in a Vessel Registry is mapped to a Fleet segment which includes the notion of predominant geartype. However such vessel may engage in fishing activity with another Geartype, therefore the Geartype can be optionally used to describe engagement in a fishery. .

Note: in absence of vessel registry and licensing system, the potential engagement can be estimated through frame surveys designed to map the surveyed vessels to a Fleet segment, together with the combination of gears used and target species.

**Scope**

Potential engagement: recommended at the country level for all species of basis level 1, 2 or 3 of the list of main species for all flagged fishing vessels registered and/or actively fishing within the reference period in the WECAFC competence area.

Actual/realized engagement: recommended at the country level for all species of basis level 1 of the list of main species for all flagged fishing vessels registered and/or actively fishing within the reference period in the WECAFC competence area

Potential and Actual/realized engagement recommended at Regional Database level for all species of basis level 1 of the list of main species

**Countries involved**

All WECAFC countries

**Data to be reported**

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
Area	See Appendix 2 for regional subareas' definition
Fleet Segment	See Appendix 4 for Fleet segment classification
<i>Gear type</i>	<i>Optional - Predominant / primary gear See Appendix 5.1 for gear type codes from ISSCFG</i>
<i>Target species</i>	<i>Optional - See Appendix 3.1 for the main commercial species (scientific name)</i>
Engagement type	“P” for potential; “A” for actual/realized
Number	Number of active vessels for the considered Fleet segment in the subarea during the reference year
Total Capacity (GT)	
Total Engine Power (Kw)	

FDS-WG2 noted that in future developments, this indicator could be provided by Fishery as identified in the WECAFC-FIRMS inventory of fisheries.

**Frequency and deadline of transmission**

Once a year before the end of the first semester of the following year.

**Data access and sharing rules (see section 3.2)**

- *first submission accessible to the Member country and FAO data manager for validation.*
- *integration of this submission by the FAO data manager in a wider dataset viewable by all Members of a specific Working Group who have duly submitted data, for validation of the data call by the WG as a whole*
- *eventually publicly available (and possibly at aggregated level)*

### 3.3.3.2 Task III.2: Vessel registry

**Note for reviewers:** are invited to advise on the length limits for inclusion in the vessel register, and for type of vessels, such as for-hire vessels (e.g, charter boats and headboats carrying > 6 passengers). It is recalled that the length of 12 meters was proposed at WECAFC Commission 17, and harmonization should be sought with sub-regional register such as OSPESCA

Provision has been made in the regional fishery management plan to create a regional vessel registry fed by the national vessel records or registries.

#### Description

The minimum set of information required for the description of fishing vessels is as recommended by the WECAFC IUU Working Group in its second meeting (Barbados, Sept 2017).

The second (and supplemental) subset of data is time dependent and concerns information on fishing licenses granted to registered vessel.

The information on the primary, secondary and third fishing gear(s) allow to map the vessel to a Fleet segment for a given year – considering the eventuality of a predominant gear, and to generate Task III.1 data. In absence of a licensing scheme, this information can be collected during vessels' frame surveys.

#### Scope

It is recommended that the national vessel register and licensing system include all vessels above **X** meters, and below this length should include to extent possible all vessels involved in commercial fishing activities, vessels engaged in recreational fishing, and all vessels engaged in fisheries under fishery management plans.

The regional register contains the minimum set of information recommended by the WECAFC Working Group on IUU. In its first phase, it should include all vessels above **X** meters, commercial or recreational, with focus during phase 1 implementation on those engaged in Fisheries under FMP.

#### Countries involved

All WECAFC countries

#### Data<sup>17</sup>

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<sup>17</sup> Second meeting of the WECAFC Working Group on IUU (Barbados, Sept 2017)

Vessel information	Mandatory / Optional	Definition
Unique identifier		WECAFC vessel unique identifier
Name	M	Current Vessel Name
Registration Number	M	National Vessel Registration Number
Home Port (Registration Port)	M	Vessel Home Port Name
Owner(s)	M	Name of the current vessel owners
Flag	M	Current Vessel Flag (country of vessel registration – ISO3)
Operational status	M	Is the status of the vessel: active, decommissioned, sunk etc...
IMO (*)	O	International Maritime Organization Number
IRCS (*)	M	International Radio Call Sign
LOA (m) (*)	M	Length OverAll is the maximum length of a vessel's hull measured parallel to the waterline <sup>18</sup>
Draft (m)	O	Is the vertical distance from the bottom of the keel to the waterline.
Beam (m)	O	is the width of the hull
GT (t) (*)	O	Gross Tonnage
GRT (t) (*)	O	Gross Registered Tonnage
Main engine Power (kW)	M	Power of the vessel main engine (in-board or outboard)
Hull type	O	Type of the watertight body of the vessel (steel, aluminum, fiber glass, wood,
Vessel Type	M	Type of fishing vessel according to the ISSCFV, taking into account the WECAFC consideration of predominant gear.
Year of construction	M	Year of the original vessel construction
Location of construction	O	Location of the vessel shipyard
Image	M	Image of the vessel (with registration number)
Previous flag(s)	O	Previous country(ies) of vessel registration (ISO3)
Previous name	O	Previous vessel name
Beneficial owner	O	Name of the vessel beneficial owner
Year of entry into fishing activity	O	The year in which the vessel commenced its fishing activity

## Time dependent / fishing license related data

Year	O	Reference Year for Reporting
Actually active	O	Indicator Y or N ; information from Registry/License, or from census
Authorization to fish (license indicator)	O	Any authorization to fish, e.g. license, permit or any other official denomination; indicator Y/N

<sup>18</sup> Launer, Donald (2006). *Dictionary of Nautical Acronyms and Abbreviations*. Sheridan House, Inc. p. 64. [ISBN 978-1-57409-239-4](https://books.google.com/books?id=9_7ycOuv6a4C&pg=PA64&dq=LOA+length+overall+LOD+donald#v=onepage&q&f=false)

See [https://books.google.com/books?id=9\\_7ycOuv6a4C&pg=PA64&dq=LOA+length+overall+LOD+donald#v=onepage&q&f=false](https://books.google.com/books?id=9_7ycOuv6a4C&pg=PA64&dq=LOA+length+overall+LOD+donald#v=onepage&q&f=false)



Main fishing gear used	O	The main gear, according to the fishing license of the vessel or the owner/operator, using the Appendix 5.1 for gear type codes from ISSCFG
Secondary fishing gear	O	The secondary gear, according to the fishing license of the vessel or the owner/operator, using the Appendix 5.1 for gear type codes from ISSCFG
Third fishing gear	O	The tertiary gear, according to the fishing license of the vessel or the owner/operator, using the Appendix 5.1 for gear type codes from ISSCFG
Target species	O	Optional: the main target species as authorized in the license or known from the owner/operator

### Frequency and deadline of transmission

Once a year before the end of the first semester of the following year.

### Data access and sharing rules (see section 3.2)

- *First submission accessible to the Member country and FAO data manager for validation.*
- *Integration of this submission in a wider dataset maintained by the FAO data manager.*
- *New updates published on a continuous basis*

## 3.3.4 Task IV: Biological information

### Objective

Biological data are key to population dynamic studies, regional or national stock assessment in support to fisheries management, stock status determination e.g. in the context of indicator SDG14.4.1.

More specifically: monitor the structure of exploited populations based on length frequencies, and other biological data such as sex or maturity stages on select species.

#### 3.3.4.1 Task IV.1: Size data

### Description

Size frequencies of the samples (retained and discarded) measured by species, classified by major fleet, gear sample units, time strata, area strata, and sex (where possible and relevant) for select species from the Main List of Species.

And where appropriate for selected species, sex with the stage of maturity.

It is acknowledged that biological data on discards are not collected in many countries in the WECAFC area. This is a target to be achieved. Reporting of discards is done on a “data availability” basis. Effort should be put in place to collect these biological data for some portion of the numbers discarded as they are key for stock assessment and monitoring.

Note: this Task describes the overall list of fields with reference to statistical standards. The species Working Groups will be requested to further tailor the description of the Task for their specific needs.

## Scope

Recommendation 1a: at the country level for group1 species of basis levels 1 from the main reference list, and any additional species which undergo occasional stock status determination (e.g. national reference list of stocks for indicator SDG14.4.1).

Recommendation 1b: is encouraged at the country level for group1 species at basis levels 2, 3 from the main reference list, and any additional species which undergo occasional stock status determination (e.g. national reference list of stocks for indicator SDG14.4.1).

Recommendation 2: at WECAFC Regional Database level, as per specification of WECAFC-CRFM-OSPESCA working groups for selected species (group1 basis 1, basis 2, 3) and subareas

## Countries involved

All WECAFC countries when data are available.

## Data to be reported

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter/Month</i>	Optional: by quarter or month if available
Fleet Segment	See appendix 4 for fleet segment definition
Geartype (with details)	See Appendix 5.1 for geartype codes from ISSCFG. The technical characteristics of the sampled gears (e.g. mesh size, number of hooks, etc...) should be provided in Metadata associated with the reported data.
Fishing mode	See appendix 5.2 for fishing mode definition
Area	See appendix 2 for regional subareas' definition
Source of data	Source of data: Port sampling from scientists (PS) or Scientific Research Survey (SU), Observer (OBS), Self-reported (fishers)
Species	Required for group 1 basis 1 species; optional for other species. See appendix 3.1 for the main commercial species (Scientific name)
Total Retained Catch (weight)	Weight of retained species, for the given commercial species in live weight equivalent (in tonnes)
Total discarded catch	Amount of catch discarded and not brought to

	landings site, for the given commercial species in live weight equivalent (in tonnes). Use NA if discards were not recorded, and 0 if discards were actually zero and no catch was discarded.
Total weight of samples	Weight of sampled species
Length class	The value of the length class of the measured individuals. See appendix 6.1
Length class unit	Length class units are recorded as TL, SL, or FL. See appendix 6.1
Sex	Sex with the stage of maturity where appropriate for selected species (male = M, female = F, total = T, unknown = U) -- total catch observations = T, but allows separation by sex if available
Maturity stage	Stage of maturity where appropriate See Appendix 6.2
Maturity scale	(e.g. stage 1 on a scale 1 – 5 or 1 on a scale 0-1 as specified in Appendix 6.2)
Number of individuals by length class	Total number of fish in the sample for the given length class and (where appropriate for selected species) sex with the stage of maturity (see Appendix 6.2 for maturity schedules)
Total weight of individuals by size class	Total weights of individuals in length class and (where appropriate for selected species) sex with the stage of maturity, + indicate unit (e.g. grams or kilograms).

**Note:** A detailed regional classification of gear type by characteristics (gillnet net by mesh size, longline by group of number of hooks etc...) could be developed

#### Frequency and deadline of transmission

Once a year before the end of the first semester of the following year.

#### Data access and sharing rules (see section 3.2)

- *Approach:* Task IV.1 is first available to specific Species WGs at the highest resolution level. WGs validate the aggregated table, then the WG can possibly advise to publish it at aggregated level. Scope of the published data will always be clearly mentioned in the Metadata.
- *Rules:*

- *First submission accessible to Member country and dedicated WG scientific data manager for validation.*
- *WG scientific data manager integrates submitted data in a wider dataset viewable by all Member Countries of a Species WG having submitted, for validation by the WG as a whole.*
- *The eventual published format would be recommended by the WG.*

### 3.3.4.2 Task IV.2: Catch at Size data

#### Description

This task originates and is an aggregated level of Task IV.1, however acknowledging that varying constraints may prevent countries from submitting at Task IV.1 level, thus IV.2 provisions for countries reporting statistics as the extrapolated level. Reported catch at size (raised to Task II Catch data) classified by fleet segment, gear type, species, time unit, area and (where appropriate for selected species) sex with the stage of maturity.

#### Scope

Recommendation 1: at Country level, for group1 species of basis levels 1, 2, or 3 from the main reference list, and any additional species which undergo occasional stock status determination (e.g. national reference list of stocks for indicator SDG14.4.1) .

Recommendation 2: at WECAFC Regional Database level as per specification of WECAFC-CRFM-OSPESCA working groups for selected species (basis 1, basis 2?) and subareas

#### Countries involved

All WECAFC countries

#### Data to be reported

Field	Definition
Country	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter/Month</i>	Optional: by quarter or month if available
Fleet Segment	See appendix 4 for fleet segment definition
Gear type (with details)	See Appendix 5.1 for gear type codes from ISSCFG The technical characteristics of the sampled gears (e.g. mesh size, number of hooks, etc...) should be provided in Metadata associated with the reported data.
Fishing mode	See appendix 5.2 for fishing mode definition

Area	See appendix 2 for regional subareas' definition
Species	See appendix 3.1 for the main commercial species (Scientific name)
Length Class	<p>The value of the length class of the measured individuals. Length classes should be reported in centimetres (cm), as a whole number, or in half centimeters (e.g., 0.5, 1.0, 1.5 cm, etc.) for fish (including elasmobranchs) and cephalopods. For crustaceans, length classes should be reported in millimetres (e.g., 1, 2, 3, 4 mm, etc.)</p> <p>Convention for length type and interval identity to be further specified.</p>
Length class unit	Length class units are recorded as TL, SL, or FL. See appendix 6.1
Sex	Sex where appropriate for selected species (male = M, female = F, total = T, unknown = U) -- total catch observations = T, but allows separation by sex if available
Stage of Maturity	Stage of maturity where appropriate for selected species (as specified per species in Appendix 6.2, see below)
Total Weight of Individuals by length class (expanded)	Total weight of individuals in length class <sup>2</sup> and (where appropriate for selected species) sex with the stage of maturity, + indicate units (e.g. grams or kilograms).
Total Catch (expanded)	Total number of individuals (raised to task II total catch) for length of the entire catch by fleet, gear type, Year/Quarter/Month, area

## Notes:

Same as for Task IV.1 concerning a detailed classification on gear type

**Note for reviewers:** There is a need to define a regional reference list of stage of maturity per species. Advice expected from the Species Working. Appendix 6.2 proposes a structure in this respect

**Frequency and deadline of transmission**

Once a year before the end of the first semester of the following year.

**Data access and sharing rules** (see section 3.2)

Same as for Task IV.1

## 3.3.5 Task V: Endangered, Threatened, Protected (ETP) species catches

**Objective**

To conserve natural resources through sustainable fisheries, bycatch of marine endangered species such as seabirds, sea turtles, elasmobranchs and marine mammals must be quantified with the goal to assess fisheries impacts on the ecosystem and to control mortality to levels below those that threaten the conservation status of endangered species..

**Description**

The bycatch concerning endangered, threatened or protected species (ETP) are reported, whether landed, discarded dead, or discarded alive.

**Scope**

Recommended for all ETP species in the main reference list, for both national data collection and the WECAFC regional database level.

**Note for reviewers:** the list of ETP species can be identified either among the existing bases, or through a specific basis or appendix to be developed

**Countries involved**

All WECAFC countries when data are available

**Data to be reported**

Field	Definition
Flag State	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
<i>Quarter/Month</i>	Optional: by quarter or month if available
Fleet Segment	See appendix 4 for fleet segment definition
Gear type	See Appendix 5.1 for gear type codes from ISSCFG
Fishing mode	See appendix 5.2 for fishing mode definition
Area	See appendix 2 for regional subareas' definition
Species	An appendix 3.3 is proposed for ETP species (Scientific name)

Landings (in numbers or weight as appropriate)	Number and estimated weight landed
Number of discards alive (in numbers or weight as appropriate)	Number of discards and estimated weight for alive fish
Number of discards dead (in numbers or weight as appropriate)	Number of discards and estimated weight for dead fish

### Frequency and deadline of transmission

Once a year before the end of the first semester of the following year.

### Data access and sharing rules (see section 3.2)

- *first submission accessible to Member country and FAO data manager for validation.*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing*
- *eventually publicly available*

## 3.3.6 Task VI: Socio economics

### Objective

Monitor the economic and social status of the fishing sector in support to appropriate policies and strategies, especially in relation to promoting fishing as a source of livelihoods thanks to the long-term sustainability of resources and fleets.

Economic and social data are generally collected through sampling surveys using questionnaires, but for some fleet segments and some variables, other data sources could be used (e.g. administrative records, auction sales, and census).

#### 3.3.6.1 Task VI.1: Employment

### Objective

Employment in the fishery sector is a useful indicator of the importance of the fishery sector in the region, with specific attention to be paid to gender, youth, decent/child labor, and more generally to the dynamics of populations engaged in fishing activities (primary production sector).

### Description

This indicator aims to present the total number of fishers by sex (male / female), age group, time-use (full time employment or part time employment), and area for the reference year.

Age groups are set according to the ILO guidelines “Decent work indicators: for producers and users of statistical and legal framework indicators”, with categories <15 (for child labor); 15-24 (for youth employment); 24-65; >65

Time-use categories (full-time fisher / part-time fisher) refer to CWP and are described in the definition section of this document. While Country Members should follow these definitions, they should provide along with the data the related metadata qualifying what is a full-time fisher and part-time one.

### Scope

This task addresses the primary fishery production sector

### Countries involved

All WECAFC countries

### Data to be reported

Field	Definition
Country	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
Area	See appendix 2 for regional subareas' definition
Sex	Male or Female
Age Group	0-15 / 15-24 / 24-65 / >65 (See Appendix 7.1)
Time-use category	Full-time fisher / part-time fisher
Count of fishers	Number of fishers for the specified sex / age group / time-use category / (excluding workers in secondary sector)

### Frequency and deadline of transmission

Once a year before the end of the first semester of the following year.

### Data access and sharing rules (see section 3.2)

- *First submission accessible to Member country and FAO data manager for validation.*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing eventually publicly available*

#### 3.3.6.2 Task VI.2: Participation in fishing activities

### Objective

Foundation for assessing the engagement of fishers by fishery (particularly important for hand collection from shore), the productivity of manpower and the assessment of individual income levels.



**Description**

The intensity of employment for fishers actively engaged in fishing activities, measured in numbers of persons and total number of days spent fishing.

**Scope**

This task addresses the primary fishery production sector, and concerns all fisheries with however a primary focus on fisheries under WECAFC Fishery Management Plan.

**Countries involved**

All WECAFC countries

**Data to be reported**

Field	Definition
Country	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
Quarter/Month	Optional: by quarter or month if available
Fleet Segment	See appendix 4 for fleet segment definition
<i>Gear type</i>	<i>Optional - See Appendix 5.1 for gear type codes from ISSCFG</i>
<i>Fishing mode</i>	<i>Optional - See appendix 5.2 for fishing mode definition</i>
Area	See appendix 2 for regional subareas' definition
Count of fishers	Number of fishers actively taking part to fishing activities
Count of fishers x days fishing	Number of fishers multiplied by number of fishing days (intensity of fishers involvement in fishing activities)

Note: FDS-WG2 noted that in future developments, this indicator could be provided by Fishery as identified in the WECAFC-FIRMS inventory of fisheries.

**Frequency and deadline of transmission**

Once a year before the end of the first semester of the following year.

**Data access and sharing rules** (see section 3.2)

- *First submission accessible to Member country and FAO data manager for validation.*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing*
- *eventually publicly available*

## 3.3.6.3 Task VI.3: Value of catches

Note: There is increasing global policy demand for assessing the value of capture fisheries, and CWP has added at its 26th session (May 2019) this variable as part of the minimum data requirement for socio-economic statistics at the global scale.

**Objective**

Assessment of the total income of the primary fishing sector and its contribution to national GDP e.g. for SDG indicator 14.7.1, trends analysis of average annual prices for commercial species; also a foundation for the assessment of the fleet socio-economic performance.

### Description

The price value of capture fisheries production at first sale after landing of the catch (ex-vessel price), and the average value of species' prices/kg, in local currencies available for conversion in US\$ using appropriate average annual exchange rates. The value should exclude taxes, transportation costs and marketing expenses, and the profit of fishers. The concept of the ex-vessel price in some countries can correspond to the landed value and of first-hand selling (or first sale) price.

### Scope

Recommended at the country level and for upload to the Regional database for all species of the WECAFC Reference list of aquatic species.

### Countries involved

All WECAFC countries

### Data to be reported

Field	Definition
Country	The M49 UN code for the country (see appendix 1)
Year	Reference year for reporting
Species	See appendix 3.1 for the main commercial species (scientific name)
Total nominal catch	Weight of total landed fish for the given species in live weight equivalent (in tonnes).
Unit price by species	The average value of species' prices (price/kg) during the reference year (in local currency) - (converted into US\$ in the regional database)
Value	Total monetary value of total landed fish for the given species (in local currency) - (converted into US\$ in the regional database) - (See Appendix 7.1)
Currency	The International Standard for currency codes ISO 4217 (e.g. USD for US dollar)

### Frequency and deadline of transmission

Once a year before the end of the first semester of the following year.

**Data access and sharing rules** (see section 3.2)

- *first submission accessible to Member country and FAO data manager for validation; includes conversion of local currencies into USD by FAO manager;*
- *the integration and validation is under the responsibility of the sole WECAFC data manager, who eventually decides the publishing;*
- *eventually publicly available.*

## **4 Appendix**