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WESTERN CENTRAL ATLANTIC FISHERY COMMISSION

DATA COLLECTION REFERENCE FRAMEWORK

Version 1.0



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Clockwise from top left: Small-scale fisheries landing site on a Caribbean island; Small-scale canoe returning from a fishing trip in Suriname
Biological data sampling at a landing site in Les Saintes, France; Data collection at a landing site in Saint Lucia.

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PREPARATION OF THE DOCUMENT (Version history)

The table below is a summary of the different reviews that led to the finalization of the present document (Version 1.0).

Number	Description	Authors	Date
0.1 to 0.8	<p>Eight sub-versions were necessary between April 2017 and May 2022 for initiating and maturing DCRF throughout two sessions of the Fisheries Data and Statistics Working Group (session 1 and session 2).</p> <p>v0.4 was endorsed as an interim Data Collection framework by WECAFC Commission 17 (July 2019); v0.8 was endorsed as a fully-fledged version by WECAFC Commission 18 (July 2022)</p> <p>The history of these sub-versions can be tracked in the documents accessed through the above links. Paragraph 1.2.2 provides a summary of the DCRF development history</p>	<p>Marc Taconet (FAO) Nancie Cummings (NOAA) James Geehan (FAO) Yann Laurent (FAO) Aureliano Gentile (FAO) Yvette DiciOuadi (FAO) Jennifer Gee (FAO) David Ramm (FAO) June Masters (CRFM) Tania Gonzalez Norori (OSPESCA)</p>	<p>V0.1 initiated 21/04/2017</p> <p>V0.4 produced on 01/07/2019</p> <p>V0.8 produced on 05/04/2022</p>
1.0	<p>This is the v0.8 sub-version endorsed by WECAFC Commission 18, set as version 1.0 of the full-fledged DCRF, with following modifications:</p> <ul style="list-style-type: none"> - removed 'Interim' - set as v1.0 - Version history: collapsed and summarized into one row the detailed history of sub-versions - Updated paragraphs 1.1 (About WECAFC) and 1.2 (About DCRF and its development process) with the outcome of Commission 18. 	same as above	September 2022

*This document is dedicated to our colleague **Dr Fabio Hazin**, in memory of his contributions to the work of the Fisheries Data and Statistics Working Group and his unwavering dedication to advancing science on fisheries matters in the WECAFC region.*

CONTENTS

Preparation of the document	iv
Acknowledgements	vii
Abbreviations and acronyms	viii
1 Purpose and background.....	1
1.1 About the Western Central Atlantic Fishery Commission (WECAFC).....	1
1.2 About the Data Collection Reference Framework (DCRF) and its development process	4
1.2.1 Background	4
1.2.2 The Data Collection Reference Framework (DCRF) manual and its development history..	6
2 Definitions	9
3 Structure of data collection	9
3.1 The different needs for data in the WECAFC region.....	9
3.2 WECAFC data sharing and access policies	14
3.3 Components of the Data Collection Framework.....	14
3.3.1 Task I: Regional statistics	14
3.3.2 Task II: Catch and effort	18
3.3.3 Task III: Fleet engagement, and vessels	22
3.3.4 Task IV: Biological information	26
3.3.5 Task V: Endangered, threatened, protected (ETP) species catches	31
3.3.6 Task VI: Socioeconomics	32
4 References	37
5 Glossary.....	40
Appendix 1 – List of WECAFC country/territory codes (M49) (UN, 2022).....	47
Appendix 2 – WECAFC fishing subareas/divisions for statistical purpose.....	49
Appendix 3 – WECAFC reference list of aquatic species	53
Appendix 3.1 – Group 1 species – main reference species.....	56
Appendix 3.2 – Group 2 species – other reference species of interest for WECAFC that could be elevated to the Group 1	58
Appendix 3.3 – Group 3 Species – other species of interest for WECAFC members that are falling under the mandate of other RFMOs including for reporting purposes (ICCAT)	78
Appendix 4 – Fishing vessel typology.....	85

Appendix 4.1 – Fleet segment - vessel types by length classes	86
Appendix 5 – Fishing practice	88
Appendix 5.1 - Fishing gear.....	88
Appendix 5.2 – Fishing mode.....	90
Appendix 5.3 – Fishing effort.....	91
Appendix 5.4 – Effort measurement by fleet segment.....	92
Appendix 6 – Biological references – under development	93
Appendix 6.1 – Fish length measurement standards.....	94
Appendix 6.2 – Scales of maturity stages	95
Appendix 6.3 – Growth models adopted by WECAFC for primary species	103
Appendix 6.4 – Conversion factors adopted by WECAFC for primary species.....	104
Appendix 7 – Socioeconomics (age groups, currency, etc.).....	107
Appendix 7.1 – Age groups	107
Appendix 7.2 – Currency	108
Appendix 8 – Questionnaires and data submission schedule.....	109

Table

Table 1: DCRF Task summary highlighting purpose, data requirements, and reference to WECAFC Resolutions and Recommendations. (words in italics indicate optional fields).....	11
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Figure

Figure 1: WECAFC competence area.....	1
Figure 2: CWP diagrammatic representation of catch concepts (from CWP Handbook)	41

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ABBREVIATIONS AND ACRONYMS

ABNJ	area beyond national jurisdiction
ASFIS	Aquatic Sciences and Fisheries Information System
BS	biological sampling
CARICOM	Caribbean Community
CCCFP	Caribbean Community Common Fisheries Policy
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CF	conversion factor
CPUE	catch per unit of effort
CRFM	Caribbean Regional Fisheries Mechanism
CWP	Coordinating Working Party on Fishery Statistics
DANIDA	Danish International Development Agency
DCRF	Data Collection Reference Framework
EAF	ecosystem approach to fisheries
EEZ	economic exclusive zone
ETP	endangered, threatened and protected (species)
FAD	fish aggregation 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 register tonnage
GT	gross tonnage
hp	horse power
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICM	Interim Coordination Mechanism
IFREMER	Institut français de recherche pour l'exploitation de la mer
ILO	International Labour 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 Fishing Vessels
IUU	illegal, unregulated and unreported (fishing)
kW	kiloWatt
LOA	length overall
OBS	observer
OSPESCA	Organization for the Fishing and Aquaculture Sector of the Central American Isthmus
PS	port sampling
PSMA	Port State Measures Agreement
RDB	regional database

RFB	regional fishery body
RFMO	regional fishery management organization
SEAFDEC	Southeast Asian Fisheries Development Center
SPA	specially protected areas and wildlife
SS	scientific survey
t-RFMO	tuna regional fishery management organization
UN	United Nations
WECAFC	Western Central Atlantic Fishery Commission
WPAMSR	Working Party on Assessment of Marine Fishery Resources

1 Purpose and background

1.1 About the Western Central Atlantic Fishery Commission (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 km² (~ 5.8 million square miles) 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 of America, the Gulf of Mexico, the Caribbean Sea and the north-east coast of South America. Approximately 51 percent of the mandate area is in areas beyond national jurisdiction (ABNJ) and around 81 percent 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 (Figure 1).

Figure 1: WECAFC competence area



Source: FAO WECAFC Fisheries Data and Statistics Working Group (FDS-WG), 2022. WECAFC Data Viewer. Cited 13 January 2023. www.fao.org/wecafc/data/data-viewer/en

Note: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

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

The 16th Commission agreed to establish a Working Group for Fisheries Data and Statistics (FDS-WG), based on the ongoing work of the WECAFC – Fisheries and Resources Monitoring System (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 the following resolutions: 1) members contribute to the regional database (RDB) through the FDS-WG and provide national data and statistics according to the guidelines of the interim Data Collection Reference Framework (DCRF) and 2) members build on best practice guidelines for logbooks, and contribute to developing and updating national inventories of fisheries and resources.

The Commission during its 16th session (FAO, 2016a) 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 17th session of the Commission convened in 2019 in Miami, United States of America, with 28 members participating. Observers from four RFBs and four intergovernmental organizations also participated. The Commission adopted thirteen 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 polices; 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 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 Reference List of Aquatic 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 the following recommendations: 1) members endorse the structure and concept of developing a reference list of aquatic species, according to guidance provided through the interim DCRF on harmonization of collection of data and statistics, including socioeconomic data, based on several selection supporting criteria by the FDS-WG1; 2) members endorse the interim 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–Caribbean Regional Fisheries Mechanism (CRFM)–Organization for the Fishing and Aquaculture Sector of the Central American Isthmus (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 polices, taking into account the input from all members.

The most recent Commission (18th session) convened in 2022 in Managua, Nicaragua, with 23 members participating as well as nine partner organizations. Observers from four RFBs and four intergovernmental organizations also participated. Amongst other items of the agenda, the Commission endorsed five recommendations and related conservation and management measures on: 1) Regional Fish Spawning Aggregation Fishery Management Plan: Focus on Nassau Grouper and Mutton Snapper (FSAMP); 2) Regional Plan of Action for the Conservation and Management of Sharks, Rays and Chimaeras in the WECAFC area; 3) Regional Strategy on the Management of Bycatch and Discards in Latin American and Caribbean (WECAFC) bottom trawl (shrimp and groundfish) fisheries; 4) Interim Caribbean Regional Management Plan for the Moored Fish Aggregating Device (MFAD); and 5) the Data Collection Reference Framework (DCRF) and its appendices, an important tool aimed at providing decision-makers with sufficient and reliable information on data and statistics to develop effective fisheries policies. This DCRF includes an agreed list of priority species (Appendix 3), and statistical subareas and divisions for WECAFC (Appendix 2).

While endorsing DCRF, the 18th session of the Commission recognized that the DCRF serves a minimum of two purposes, including i) a capacity building tool, which can be used by members as a reference standard to set up national data collection and information systems for all aquatic marine species, and ii) an instrument to support the scientific mandate and priorities of WECAFC-CRFM-OSPESCA.

The 18th session of the Commission also:

1(d) recommended the following general principles for the delineation of WECAFC sub-areas and divisions:

- that the WECAFC subareas and divisions are identified, as far as possible, consistently with the major ecosystems in the region as the starting point for defining their delineations, and as the overarching principle;
- that in defining the subareas and divisions, established maritime boundaries and 200 nautical mile economic exclusive zone (EEZ) limits are utilized (where they are established and are not disputed) and other default limits as the prevailing principle, in combination with, where required or preferred, simple longitudinal, latitudinal or oblique straight lines in the cases where: (a.) there are no established maritime boundaries, to avoid issues of undefined/disputed maritime spaces; and (b.) there are locally recognized and important ecosystem boundaries, together with other considerations, such as WECAFC member countries' data collection capacities, that would limit adequate reporting.

1(f) recommended the use by all WECAFC Members in their national data collection on the evolved categorization of the WECAFC reference list of aquatic species developed by the FDS-WG as DCRF Appendix 3, which consists of three groups and several subgroups with defined bases for selection;

1(g) strongly encouraged WECAFC Members to proceed with the use of DCRF for monitoring and reporting, with prioritization for provision of data for Tasks III (Fleet), II (Catch by species and effort), and IV (Biological data), with high priority on Group 1 species.

and adopted the following:

2(a) the Western Central Atlantic Fisheries Information System (“WECAFIS”) has the mandate to disseminate data and statistics covered by DCRF with due consideration of DCRF data access and sharing rules, as well as FIRMS information on status and trends of fisheries and stocks under the WECAFC competence area.

2(b) The WECAFIS be published in the data section of the new WECAFC website.

2(c) Members publish DCRF data in WECAFIS for Task I, and for Task II.1 and Task II.2, Task III.1 and Task IV.1 with high priority for Groups 1 species to reinforce management of shared stock.

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

The WECAFC 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 fishery management plans (FMPs) as needed by any regional or subregional 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 subregional management plans. The DCRF should be periodically 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

In the 1970s and 1980s, WECAFC members 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 International Development Agency Danish Government (DANIDA) capacity building projects and the FAO/Norway exclusive economic zone (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 to 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 1980s and 1990s has exacerbated the situation. Challenges in informing data and statistics have been further hampered in regards to the growth of recreational fisheries and lack of information for these fisheries. 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 (FAO, 2016b). As of 2022, it was estimated that 60 percent of the species or species-groups were considered fully fished while 21 percent were considered overfished in the WECAFC region (FAO, 2017). Furthermore, the commitment of Caribbean Community (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 and information on some key commercial fisheries target species (spiny lobster, queen conch, flying fish, some snappers/groupers and shrimp stocks of the north Brazil and Guianas shelf) are being shared between the members of CRFM, OSPESCA and WECAFC, through joint working groups on these specific fisheries.

At the 15th 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 15th session of WECAFC 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 (FAO, 2022a) and capacity built for national inventories in a few pilot countries; 2) plans developed (FAO, 2019) for strengthening national and subregional 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 (FAO, 2016c).

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 the 16th session of WECAFC 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 the development of a regional data collection reference framework (DCRF) and the 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 Working Group’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 primary 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 Responsible Fisheries (CCRF) (FAO, 1995) 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 Data Collection Reference Framework (DCRF) manual and its development history

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/subregional fishery body. In that regard, inspiration was sought from RFBs and regional fishery management organizations (RFMOs) data collection frameworks (e.g. the General Fisheries Commission for the Mediterranean (GFCM) through the 2016 GFCM Data Collection Reference Framework (FAO, 2022b) and further from the International Commission for the Conservation of the Atlantic Tunas (ICCAT, 2022a). 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 a series of Chapters as follows: working definitions, structure of data collection, glossary 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 the Seventeenth Session of WECAFC 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 the data access and sharing policies and regional guidelines for logbooks.

Following the Seventeenth Session of WECAFC, the interim DCRF was further enriched from members' comments/inputs received on the version presented at SAG through January 2019. Further modifications were then brought before FDS-WG2 preparatory sessions that convened virtually between July and September 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.

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 first session of FDS-WG2 (May 2021) acknowledged that the DCRF v0.7 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, in support of national policies and reporting needs including for the provision of data to WECAFC.
- 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 around five supporting bases (clustered in three Species Groups) for the WECAFC Reference list of aquatic species, through an incremental approach to implementation for some countries.

Version 0.6 presented at FDS-WG2 extended session (May 2021) implemented 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 tasks on well-defined WECAFC **objectives**; ii) refining a **scope** clearly aligned with WECAFC objectives, mandate and taking into account capabilities of the Members; and by iii) providing informative and acceptable/workable Data access and sharing **rules**. Accordingly, Version 0.6 implemented in each tasks section 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 for upload to the regional database, 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”.

Version v0.7 presented at FDS-WG2 Conclusion session (10 March 2022) implemented further modifications as per the recommendations of the FDS-WG2 Extended session (May 2021). These included:

For the main document:

- better alignment between Table 1 and the objectives at tasks level;
- simplified presentation by focusing on the WECAFC regional level, in particular most of the recommendations for the national level were removed in order to reduce confusion;
- a focused priority for provision of data to the Regional Database on Group 1 (i.e. basis 1) species;
- a precision reflected by change of title for Task III from “Fleet, and Vessels” into “Fleet engagement, and Vessels” supplemented by an added paragraph in the Task III.1 description;
- addition of the 12 meters length as the minimum vessel length for the vessel registries Appendix;
- “notes to reviewers” of past use were removed;
- inclusion of other suggested editing by reviewers (in particular the European Union, Barbados, OSPESCA), including replacement of “Country” by “WECAFC member”.

For the appendices:

- Appendix 2:
 - o title modified for clarity and accuracy from “Spatial units for fishing zones (WECAFC subareas/divisions)” to “WECAFC fishing subareas/divisions for statistical purpose”;

- content developed from the decisions taken by the two earlier sessions of FDS-WG2 (October 2020 and May 2021) including options proposed, principles retained, and description of current state of adoption of the subareas/divisions, with names proposed for these.
- Appendix 3 - WECAFC Reference List of Aquatic Species
 - this appendix is now composed of three sub-appendices, clearly distinguishing in their titles the Group 1 – Main Reference Species (Appendix 3.1), the Group 2 – Other Reference Species (Appendix 3.2), and Group 3 – Other Species (Appendix 3.3);
 - the Bases and subgroups remain in the listing's however are played down at Titles levels in order to simplify the naming conventions. This in order to facilitate use of this reference in the DCRF text, with the flexibility to either refer to Groups, or to Bases, and if necessary to subgroups when both concepts need be combined.
- Appendix 4:
 - title modified for clarity and accuracy from “Fleet segment – vessel types by length classes” to “Fishing vessels typology”, while Appendix 4.1 conserves the title of “Fleet segment – vessel types by length classes”
- Appendix 5.2:
 - table of codes updated with the latest draft proposals by the CWP fishing effort working group.
- finally, inclusion of other suggested editing from members reviews of Version v0.6.

The last interim Version v0.8 implemented the modifications requested by the Conclusion session (10 March 2022) of the FDS-WG2.

For the main document:

- the FAO disclaimer for maps of subareas and divisions will appear as a FAO publication standard in the preliminary pages of the final DCRF document.

For the appendices:

- Appendix 2: added the FAO disclaimer for maps of subareas and division;
- Appendix 3: minor editorial changes upon comments received on the proposed recommendations to the Eighteenth session of the Commission, for review by the SAG;
- Appendix 4.1: added an additional length class [18–19.9m] to the Fleet segment table.

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 of species groupings);
- 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 before the Appendices with all the concepts and controlled terms definitions presented in alphabetical order. Here follow 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 [FAO, 2022c]).

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) (Southeast Asian Fisheries Development Center [SEAFDEC] handbook on data collection [SEAFDEC, 2005]).

3 Structure of data collection

3.1 The different needs for data in the WCAFC region

The needs for data at the level of WCAFC 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). Scientific assessments are essential for the evaluation of fish stocks status, the provision of robust science based advice for their sustainable management and the mitigation of potential impacts of fishing activities on the marine ecosystems, 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 fisheries management considerations including their environmental dimension, 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 detailed 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 socioeconomic, 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 manner.

While the resolution and scope of statistics to be submitted to WECAFC regional database is set in consideration of the WECAFC mandate and objectives, Members are encouraged to extend resolution details and species scope when applying DCRF for their national data collection and information system, in accordance with their national policies and reporting needs.

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 (landings data, catch data per species)
Task III	– fleet engagement, and vessels
Task IV	– biological information
Task V	– incidental catches
Task VI	– socioeconomics

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. Collection of relevant statistics for this fleet segment should be considered within the DCRF task structure 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
(Words in italics indicate optional fields)

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 ^a 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 marine resource 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.	
		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	Catches, provided on a yearly basis by fishing unit, ^b 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
		II.2. Effort by fleet segment	Days fishing nominal effort fishing vessel count by year by flag state	The fishing effort deployed by national flagged vessels, reported on a yearly basis by fleet segment, [gear type, and] fishing mode, and subarea, with catches (and landings) for the	Interim endorsement at WECAFC 17/2019/22

DCRF tasks					
ID	Task	Sub-task	Data	Purpose and description	WECAFC Resolution/ Recommendation
			by fleet segment by fishing mode by subarea	corresponding fishing units ^b reported in Task II.1	
III	Fleet engagement 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 engaged by fishery (i.e. by primary gear and target species)	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 by species (retained and discarded), and reproductive state of individuals for selected species, classified by fleet segment, gear sample units, time unit, area, 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 fleet segment, 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 Bycatch ETP	Landings (in numbers or weight as appropriate) Number of discards including fate upon	The bycatch concerning endangered, threatened or protected (ETP) species are reported, whether landed, discarded dead or discarded alive.	Interim endorsement at WECAFC 17/2019/22

DCRF tasks					
ID	Task	Sub-task	Data	Purpose and description	WECAFC Resolution/ Recommendation
			release (dead/alive) (in numbers or weight as appropriate) Number of discards dead (in numbers or weight as appropriate)		
VI	Socioeconomics	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 (primary production sector).	Interim endorsement at WECAFC 17/2019/22
		VI.2: Participation in fishing activities	Count of fishers Count of fishers x days fishing	The participation in fishing activities, 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 of the catch (ex-vessel price), and the average value of species' prices/kg, in local currency then converted into USD.	Interim endorsement at WECAFC 17/2019/22

Notes:

^a The FAO technical guidelines developed to support the implementation of the International Plan of Action 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”.

^b A fishing unit is here materialized as the combination of flag state x fleet segment x fishing mode x subarea x species.

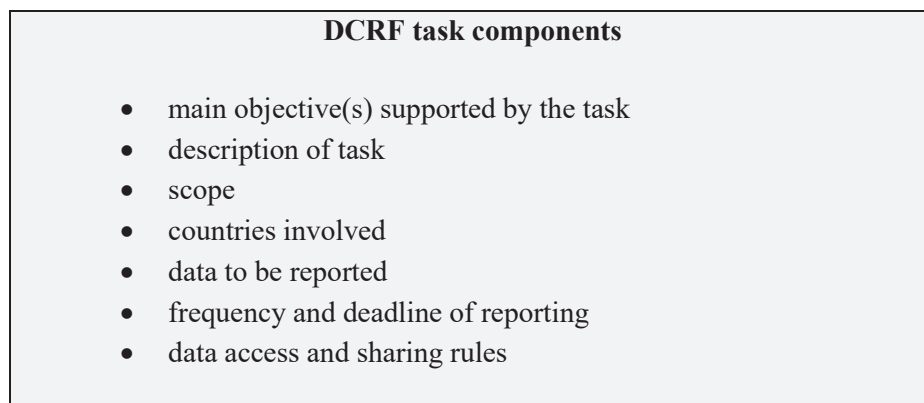
3.2 WECAFC data sharing and access policies

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” (FAO, 2018).

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 this needs to be further piloted and adjusted as the Regional database becomes operational, and 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.



3.3.1 Task I: Regional statistics

Objective

Task I aims to provide WECAFC with a regional summary overview of the fishery sector’s fishing capacity¹ by country 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 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.

¹ The FAO technical guidelines developed to support the implementation of the International Plan of Action 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”.

3.3.1.1 Task I.1: Fishing capacity and total nominal catches

Objective

To provide a general summary overview of the fishery sector of 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 engaged 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 regional database, and in case species are not 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) (see par.6.2 of GFCM DCRF accessible from www.fao.org/gfcm/data/dcrf/platform/en/).

Scope

Total catches and total numbers of vessels should be reported in the WECAFC Regional Database for:

- All species of the overall WECAFC reference list of aquatic species for which nominal catches are available at fleet segment and subarea levels.
- 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).

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

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 WECAFC Member)^a</i>
Fleet segment	See Appendix 4 for fleet segment definition
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
Total nominal catch	Weight of total landed fish (no breakdown by species) 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) ^b , of all active fishing vessels by fleet segment in the reference year (or quarter)

Notes:

^a Optional means that this information can be reported if and when relevant to the member country.^b 1 hp = 0.7457 kilowatt (kW).**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/preliminary data submission accessible to concerned WECAFC Member and FAO data manager for validation;*
- *the integration and validation as final data reporting 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 (Statlant²)

Objective

The regional overview of total catches by country, species and sub-areas for all species in the WECAFC reference list of 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.

Description

Total catch by species 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

Total catches by species should be reported in the WECAFC Regional Database for:

- All species of the reference list of aquatic species for Group 1 and Group 2 species: data is expected at species taxonomic level for Group 1 species (basis 1; Appendix 3.1); for Group 2 species (basis 2,3,4; Appendices 3.2), data is expected at taxonomic level to the extent possible, but otherwise at higher taxonomic levels of the ASFIS list.
- 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).

WECAFC members involved

All WECAFC members.

² Statlant www.fao.org/cwp-on-fishery-statistics/handbook/introduction/datacollectionsystems/en/

Data to be reported (fields in italics are optional)

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)^a</i>
Area	See Appendix 2 for regional subareas' definition
Species	See Appendix 3 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)^b, 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)

Notes:

^a Optional means that this information can be reported if and when relevant to the member country.

^b 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.

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

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, and 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

Provision of catch and effort should be reported in the WECAFC Regional Database for:

- Group 1 species (basis 1, Appendix 3.1) of the reference list of aquatic species;
- data for Group 2 species (basis 2, 3, 4- see Appendix 3.2) may be reported as well;
- 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).

Note: Group 3 species (basis 5) do not fall under the WECAFC mandate. It is recommended that WECAFC members handle these species in accordance with ICCAT data requirements and in ways harmonized and consistent with Group 1 species.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

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 if/as indicated by specific WGs</i>
Fleet segment	See Appendix 4 for fleet segment definition
<i>Geartype</i>	<i>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 for the main commercial species (scientific name)
Retained catch	Weight of retained species (including landed catches or catches retained for other uses) ^a , 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)

Note:

^a 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.

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/preliminary data submission accessible to the concerned WECAFC Member 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 [species] working group who have duly submitted their data, for validation of the data call by the WG as a whole as final reported data;*
- *eventually publicly available (and possibly at aggregated level).*

3.3.2.2 Task II.2: Effort by fleet segment / gear type

Description

The fishing effort deployed by national flagged vessels, reported on a yearly basis by fishery, with catches (and landings) for the corresponding fleet segment-[gear type]-fishing mode and subarea reported in Task II.1. A fishery is materialized in this Task by the combination of fleet segment, [gear type, and] fishing mode, target species, and subarea.

Scope

Effort data should be reported in the WECAFC Regional Database for all flagged fishing vessels actively fishing within the reference period in the WECAFC competence area, and conducting fishing operations catching Group 1 species (basis 1; Appendix 3.1) of the reference list of aquatic species. Data for Group 2 species (basis 2, 3, 4; Appendices 3.2) of the reference list of aquatic species may be reported also.

Note: For vessels conducting fishing operations concerning Group 3 species (basis 5) 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.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

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. See Appendix 5.1 for gear type codes from ISSCFG</i>
<i>Target species</i>	<i>Optional – See Appendix 3 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).

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 engagement, and vessels

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 International Plan of Action 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 (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 gear type. However such vessel may engage in fishing activity with another gear type, therefore the gear type can be optionally used to describe engagement in a fishery.

The concept of Nominal effort (i.e. number of vessel) engaged in fisheries implies that vessels may be double counted in particular when they are multigear vessels, as they may engage in various fisheries.

The concept is however important for the management of specific fisheries as it informs on the potential or actual number of vessels which may participate in such 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 and actual/realized engagement should be reported in the WECAFC Regional Database for all species of Group 1 (basis 1) of the reference list of aquatic species as defined in Appendix 3.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

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>Geartype</i>	<i>Optional - Predominant / primary gear See Appendix 5.1 for geartype codes from ISSCFG</i>
<i>Target species</i>	<i>Optional - See Appendix 3 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/preliminary data 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 as final reported data;*
- *eventually publicly available (and possibly at aggregated level).*

3.3.3.2 Task III.2: Vessel registry

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, September 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

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 12 meters, commercial or recreational, with focus during phase 1 implementation on those engaged in Fisheries under FMP.

Note: it is recommended that the source national vessel registry and licensing system include all vessels above 12 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.

WECAFC members involved

All WECAFC members

Data³ to be reported (fields in italics are optional)

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 (Launer, 2006)
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 activity related data: these fields extend the above Global Vessel Record (FAO, 2022d) standard with the minimal information necessary for the DCRF tasks, namely the activity and fleet segment classification.

³ Second meeting of the WECAFC Working Group on Illegal, Unreported and Unregulated Fishing (Barbados, September 2017).

Year	O	Reference year for reporting
Actually active	O	Indicator Y or N ; information from registry/license, or from census
Fleet segment		Fleet segment in which the fishing vessel is classified for the reporting year See Appendix 4 for fleet segment classification

Note: in addition to the above fields, it is recommended that the vessel register / licensing system at national level contains some or all of the following fields, so to enable the classification of the fishing vessel in one fleet segment for regional database submission.

Authorization to fish (license indicator)	O	Any authorization to fish, e.g. license, permit or any other official denomination; indicator Y/N
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 geartype 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 geartype 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 geartype codes from ISSCFG
<i>Target species</i>	<i>O</i>	<i>Optional: the main target species as authorized in the license or known from the owner/operator</i>

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/preliminary data 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 (nominal and raised) measured by species (retained and discarded), classified by fleet segment, gear sample units, time unit, area, and sex (where possible and relevant) for select species from the reference list of aquatic species (Appendix 3); and for selected species, the sex and 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

Size frequencies should be reported in the WECAFC Regional Database for Group1 species (basis 1, Appendix 3.1) from the Reference list of aquatic species, and as per specification of WECAFC-CRFM-OSPESCA working groups for other selected species (Group 2, basis 2,3,4; Appendix 3.2), and subareas.

WECAFC members involved

All WECAFC members when data are available.

Data to be reported (fields in italics are optional)

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: by quarter or month if available</i>
Fleet segment	See Appendix 4 for fleet segment definition
Geartype	See Appendix 5.1 for geartype codes from ISSCFG. The technical characteristics of the sampling 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 geartype 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/preliminary data submission accessible to WECAFC Members and dedicated WG scientific data manager for validation.*
 - *WG scientific data manager integrates submitted data in a wider dataset viewable by all WECAFC Members of a species WG having submitted, for validation by the WG as a whole as final reported data.*
 - *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

Catch at size data should be reported in the WECAFC Regional Database as per specification of WECAFC-CRFM-OSPESCA working groups for selected species from the Reference list of aquatic species (e.g. Group 1 species, basis 1; Appendix 3.1) and subareas.

- Data for Group 2 species (e.g. basis 2, 3, 4; Appendix 3.2) may be reported as well.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

Field	Definition
Country	The M49 UN code for the country (see Appendix 1)
Year	Reference year for reporting
<i>Quarter/Month</i>	<i>Optional: by quarter or month if available</i>
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	The value of the length class of the measured individuals. Length classes should be reported in centimeters (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 millimeters (e.g. 1, 2, 3, 4 mm, etc.) Convention for length type and interval identity to be further specified.
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 ² 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.

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 is expected from the Species Working during the 2022-2023 intersession period. Appendix 6.2 proposes an initial 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

By-catch should be reported in the WECAFC Regional database for all ETP species in the reference list of aquatic species.

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 and inputs are requested during the 2022–2023 intersession.

WECAFC members involved

All WECAFC members when data are available.

Data to be reported (fields in italics are optional)

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: by quarter or month if available</i>
Fleet segment	See Appendix 4 for fleet segment definition
Geartype	See Appendix 5.1 for geartype codes from ISSCFG
Fishing mode	See Appendix 5.2 for fishing mode definition
Area	See Appendix 2 for regional subareas' definition
Species	An Appendix 3.4 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/preliminary data submission accessible to WECAFC member 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 as final reported data;*
- *eventually publicly available.*

3.3.6 Task VI: Socioeconomics**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 labour, 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 labour); 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.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

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/preliminary data submission accessible to WECAFC member 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 as final reported data;*
- *eventually publicly available.*

3.3.6.2 Task VI.2: Participation in fishing activities**Objective**

The participation in fishing activities, measured by the number of fishers actively taking part in 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. This Task is particularly important for hand collection fishing operations from shore.

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.

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

Field	Definition
Country	The M49 UN code for the country (see Appendix 1)
Year	Reference year for reporting
<i>Quarter/Month</i>	<i>Optional: by quarter or month if available</i>
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, but important for fishing activities without vessel - 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/preliminary data submission accessible to WECAFC member 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 as final reported data;*
- *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 socioeconomic 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 socioeconomic performance.

Description

The monetary value of total 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 USD 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

Value of catches should be reported in the WECAFC Regional database for all species of the WECAFC reference list of aquatic species (Appendix 3).

WECAFC members involved

All WECAFC members.

Data to be reported (fields in italics are optional)

Field	Definition
Country	The M49 UN code for the country (see Appendix 1)
Year	Reference year for reporting
Species	See Appendix 3 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/preliminary data 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 as final reported data;*
- *eventually publicly available.*

4 References

- FAO. 1978. *Report of the Second session of the Western Central Atlantic Fishery Commission, Panama, 2226 May 1978*. FAO Fisheries Report No. 209. www.fao.org/3/am819e/am819e.pdf
- FAO. 1985. *Definition and classification of fishery vessel types*. FAO Fisheries Technical Paper No. 267. Rome. www.fao.org/3/bq842e/bq842e.pdf
- FAO. 1995. *Code of Conduct for Responsible Fisheries*. Rome. www.fao.org/3/v9878e/V9878E.pdf
- FAO. 2016a. *Report of the Sixteenth Session of the Western Central Atlantic Fishery Commission (WECAFC), Guadeloupe, 20–24 June 2016*. Rome. www.fao.org/3/bo086e/bo086e.pdf
- FAO. 2016b. *Status of billfish resources and billfish fisheries in the Western Central Atlantic*, by Nelson Ehrhardt and Mark Fitchett. FAO Fisheries and Aquaculture Circular No. 1127. Bridgetown. www.fao.org/3/i6204e/i6204e.pdf
- FAO. 2016c. *Report of the WECAFC–FIRMS Data workshop, Christ Church, Barbados, 19–21 January 2016*. FAO Fisheries and Aquaculture Report No. 1160. Rome, Italy. www.fao.org/3/i5789e/i5789e.pdf
- FAO. 2016d. *FAO's considerations regarding UNSFA's issue of reporting distinctly catches inside and outside the EEZ*. Committee on Fisheries, Thirty-second session, Rome, 1115 July 2016. www.fao.org/3/a-mq951e.pdf
- FAO. 2017. *Review of the State of Fisheries in FAO Area 311*. Western Central Atlantic Fishery Commission. Eight Session of the Scientific Advisory Group (SAG), Merida, Mexico, 3-4 November 2017. www.fao.org/3/cc0656en/cc0656en.pdf
- FAO. 2018. *WECAFC regional data access and sharing policies*. First Meeting of the WECAFC Regional Fisheries Data and Statistics Working Group, Barbados, Christchurch, 1416 May 2018. www.fao.org/fi/static-media/MeetingDocuments/WECAFC/FDSWG/2018/5e.pdf
- FAO. 2019. *Report of the technical workshop on global harmonization of Tuna fisheries statistics, Rome, 19–22 March 2018*. FAO Fisheries and Aquaculture Report No. 1239. Rome. www.fao.org/3/ca3132en/ca3132en.pdf
- FAO. 2022a. Fisheries and Resources Monitoring System (FIRMS). In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 3 November 2022. <http://firms.fao.org>
- FAO. 2022b. General Fisheries Commission for the Mediterranean – GFCM. Data Collection Reference Framework. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 10 November 2022. www.fao.org/gfcm/data/dcrf/en
- FAO. 2022c. Agreement on Port State Measures (PSMA). In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 9 November 2022. www.fao.org/port-state-measures/en
- FAO. 2022d. Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 November 2022. www.fao.org/global-record/en

FAO. 2022e. Coordinating Working Party on Fishery Statistics (CWP) – Catch and landings. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 December 2022. www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/catch-and-landings/en

FAO. 2022f. Coordinating Working Party on Fishery Statistics (CWP) – Fishing effort. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 December 2022. www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishing-effort/en

FAO. 2022g. Coordinating Working Party on Fishery Statistics (CWP) – Fishery fleet. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 December 2022. www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishery-fleet/en

FAO. 2022h. Coordinating Working Party on Fishery Statistics (CWP) – Fishing gear classification. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 December 2022. www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishing-gear-classification/en

FAO. 2022i. *Coordinating Working Party on Fishery Statistics (CWP) – International Standard Statistical Classification of Fishery Vessels by GRT Categories (ISSCFV - GRT category)*. Rome. www.fao.org/3/bt982e/bt982e.pdf

FAO. 2022j. *International Standard Statistical Classification of Fishery Vessels by Vessel Types (ISSCFV - Vessel Type)*. Rome. www.fao.org/3/bt983e/bt983e.pdf

FAO. 2022k. Coordinating Working Party on Fishery Statistics (CWP) – Nationality of catch and landings. In: *FAO Fisheries and Aquaculture Division*. Rome. Cited 14 December 2022. www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/nationality-of-catch-and-landings/en

FAO/ILO/IMO. 2012. *Safety Recommendations for Decked Fishing Vessels of Less than 12 metres in Length and Undecked Fishing Vessels*. Rome, FAO. 254 pp. <https://www.fao.org/3/i3108e/i3108e.pdf>

GEF. 2022. Large marine ecosystems. In: *Global Environment Facility (GEF)*. Washington, D.C. Cited 24 November 2022. www.thegef.org/what-we-do/topics/international-waters/marine/large-marine-ecosystems

Gudmundsson, A. 2009. Safety practices related to small fishing vessel stability. FAO Fisheries and Aquaculture Technical Paper No. 517. Rome, FAO. www.fao.org/3/i0625e/i0625e.pdf

ICCAT. 2022a. Access to ICCAT statistical databases. In: *The International Commission for the Conservation of Atlantic Tunas*. Rome. Cited 14 December 2022. www.iccat.int/en/accessingdb.html

ICCAT. 2022b. *ICCAT records of vessels*. www.iccat.int/Documents/Comply/vessels_eng.pdf

Launer, D. 2006. *Dictionary of Nautical Acronyms and Abbreviations*. Sheridan House, Inc. p. 64. https://books.google.it/books?id=9_7ycOuv6a4C&pg=PA64&dq=LOA+length+overall+LOD+donald&redir_esc=y#v=onepage&q=LOA%20length%20overall%20LOD%20donald&f=false

SEAFDEC. 2005. *Handbook on Collecting Fishery Statistics for Inland and Coastal Fisheries*, Southeast Asian Fisheries Development Center. 165 pp. www.seafdec.org/download/handbook-on-collecting-fishery-statistics/#

Taconet, M., Kroodsma, D., & Fernandes, J.A. 2019. *Global Atlas of AIS-based fishing activity - Challenges and opportunities*. Rome, FAO. www.fao.org/3/ca7012en/ca7012en.pdf

The Nature Conservancy. 2019. Marine ecoregions of the world (MEOW). In *Geospatial Conservation Atlas*. Cited 24 November 2022.

https://geospatial.tnc.org/datasets/ed2be4cf8b7a451f84fd093c2e7660e3_0

UN. 2022. Standard country or area codes for statistical use (M49). In: *UN Statistics Division*. New York. Cited 14 December 2022. <https://unstats.un.org/unsd/methodology/m49/>

WWF. 2007. Marine ecoregions of the world: A bioregionalization of coastal and shelf areas. In: *World Wide Fund for Nature (WWF)*. Washington, D.C. Cited 24 November 2022.

www.worldwildlife.org/publications/marine-ecoregions-of-the-world-a-bioregionalization-of-coastal-and-shelf-areas

5 Glossary

Note for reviewers:

Note 1: This glossary is under development and currently does not include all terms used in the guidelines. Definitions in **blue** are **draft definitions** added after FDS-WG2 Extended session (May 2021) and available in the version presented at FDS-WG2 Conclusion session (March 2022); these are not CWP definitions and have not been thoroughly reviewed nor tested by the FDS-WG;

Note 2: a number of CWP definitions related to Catch and Effort were revised by CWP-27 (June 2022); these revisions will be reviewed by FDS-WG for update of this Glossary in the next version of this document.

Active vessel: Vessels that have been engaged in any fishing operation (one day or more) during a calendar year. A vessel that has not been engaged in fishing operations during a year is considered “inactive”.

Biological data: The term “biological data” refers to the collection of data on biological characteristics of target species, bycatch and incidental catches associated with fishing (e.g. length, weight, age).

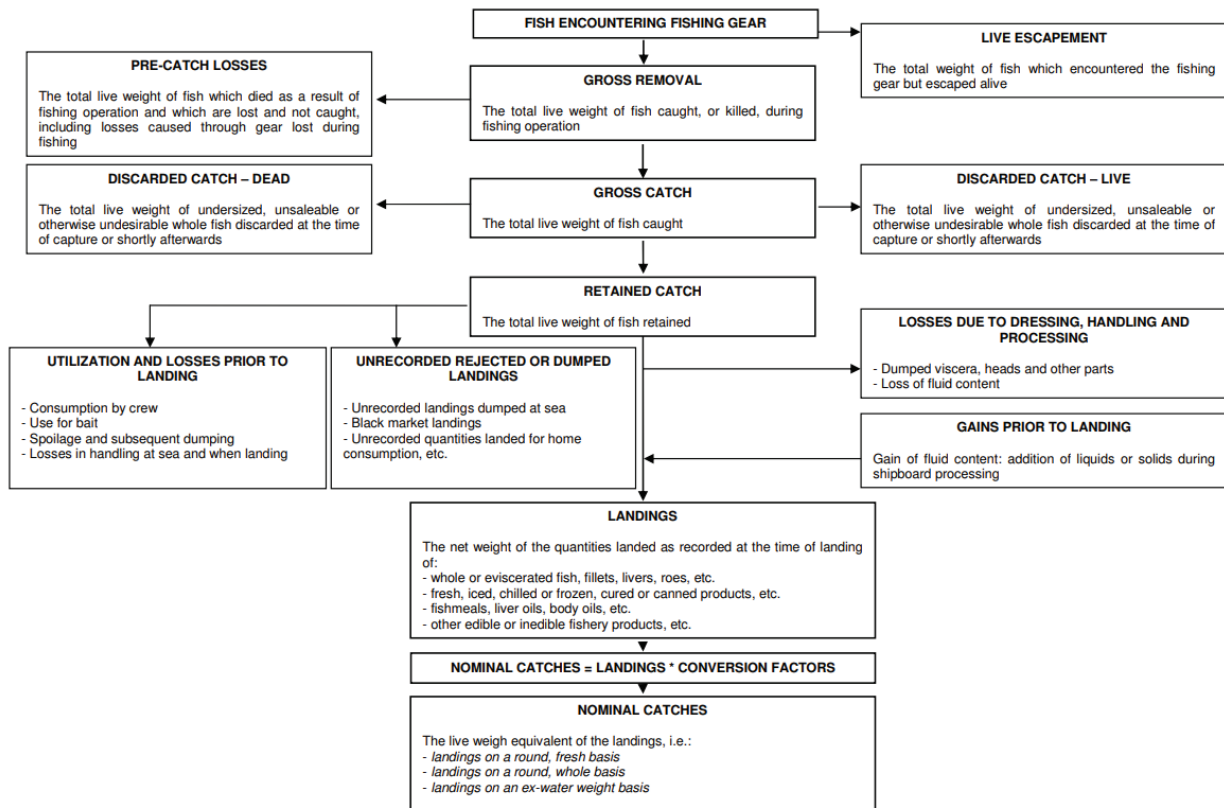
Bycatch (FAO): Part of a catch taken incidentally in addition to the target species towards which fishing effort is directed. Some or all of the bycatch may be returned to the sea as discards, usually dead or dying (i.e. injured).

Catch fraction: A part of the total catch, such as the part of the catch landed above the minimum conservation reference size, the part landed below the minimum conservation reference size, the part discarded below the minimum conservation reference size, *de minimis* discards or discards.

Catch and landings: These guidelines follow the advice of the CWP on catch and landings (FAO, 2022e). The CWP advises that the overall aim for statistics on catch and landings is to report on fisheries contribution to the national economy, to the provision of food (subsistence) and on the total removal of fish and other organisms from the sea. Catch statistics are internationally reported as “*nominal*” catch (see definition below) which refers to the landings converted to a live weight basis. However, fisheries impact on the ecosystem extends beyond the landed fish and other organisms and further includes species impacted by the gear. Some of these organisms are brought on deck and later discarded. The various components of the catch are described in the CWP catch concept diagram (Figure 2). There are fisheries where the number of individuals caught is also required to be reported.

National and regional fisheries organizations annually publish catch statistics in different forms. These statistics are available from the websites of these organizations and/or other published bulletins. FAO publishes global fisheries statistics as in “FAO Statistical Yearbooks” and are available in more details from the FAO Fisheries and Aquaculture Statistics website (<http://www.fao.org/fishery/statistics/en>). When using published catch and landing statistics it is to be recognized that non-reporting and mis-reporting of landings is a major concern in some fisheries.

Figure 2: CWP diagrammatic representation of catch concepts (from CWP Handbook)



Source: FAO. 2022. *Coordinating Working Party on Fishery Statistics (CWP) – Catch Concepts: Diagrammatic Presentation*. www.fao.org/3/bt981t/bt981t.pdf

Days at sea: any continuous period of 24 hours (or part thereof) during which a vessel is present within an area and absent from port.

Decked vessel⁴ (FAO/ILO/IMO, 2012): A vessel having a fixed watertight deck covering the entire hull above the deepest operating waterline. Where open wells or cockpits are fitted in this deck the vessel is considered a decked vessel if flooding of the well or cockpit will not endanger the vessel. Decked ship is an alternative also used in some IMO documents: a ship with a continuous watertight weather deck that extends from stem to stern with positive freeboard throughout.

Discarded catch (CWP [FAO, 2022e]): The term “discarded catch” (or discards) refers to the component of the catch which is discarded overboard (refer to the catch concept diagram, Figure 2). The discarded catch is the total live weight of undersized, unsaleable or otherwise undesirable whole fish discarded at the time of the capture or shortly afterwards. Discarded fish and other organisms may be discarded dead or alive, and may include species taken as bycatch.

⁴ Approved by IMO, the overall responsible agency for vessel safety.

Fishing days: any calendar day at sea in which a fishing operation takes place, without prejudice to the international obligations of the Union and its Member States. One fishing trip can contribute to both the sum of the fishing days for passive gears and the sum of the fishing days for active gears on that trip.

Fishing effort (CWP [FAO, 2022f]): The term “fishing effort” refers to the amount of fishing gear of a specific type used on the fishing grounds over a specified unit of time e.g. number of hours trawled per day, number of hooks set per day, or number of hauls of a beach seine per day. The impact of an effort unit on the fish populations and the ecosystem in general differs with the vessel that deploys the gear and effort statistics need to be qualified by vessel type and size/motor power.

The CWP advised that fishing effort should be reported at three levels of resolution (i.e. precision):

- Category A refers to a detailed unit of measure, e.g. hours fished or number of sets, etc. These units of measure will vary with the gear used.
- Category B refers to “number of days fished”, i.e. the number of days on which fishing took place. For those fisheries in which searching is a substantial part of the fishing operation, days in which searching but no fishing took place should be included in “days fished” data.
- Category C refers to “number of days on ground” in addition to days fishing and searching also all other days while the vessel was on the ground should be indicated.

The fishing effort may be nominal, reflecting the simple total of effort units exerted on a stock in a given defined or specified time period. It may also be standardized effort (i.e. developed using an accepted model) or effective effort when corrected to take account of differences in fishing power and efficiency and ensure direct proportionality with fishing mortality and this relates usually to a specific fishery and gear. If more than one gear is considered, standardization of the raw effort statistics in relation to one of them is necessary. For biologists, a good measure of fishing effort should be proportional to fishing mortality. For economists it should be proportional to the cost of fishing.

Fishing ground: (group of) geographical units where fishing takes place. These units shall be agreed at marine region level on the basis of existing areas defined by regional fisheries management organizations or scientific bodies.

Fish product (draft): the term “fish product” refers to any part of a fish which is handled and processed for food, agricultural, industrial or other uses. Products include whole fish, fillets, trunks, heads, roe and oils. Processing may involve heading, heading and gutting, filleting and mincing.

Fish product conversion factor (draft): the term “conversion factor” (CF) refers to the ratio of the live weight of a fish to its product weight, i.e. $CF = \text{live weight} / \text{product weight}$. A conversion factor applies to a specific product type.

Fish product type (draft): the term “fish product type” refers to the type of product which results from processing the fish. Product types include whole fish, fillets, headed and tailed trunks, headed and gutted trunks, heads, roe, meal and oil.

Fisher (CWP, refer also ISCO-08): a fisher is a worker operating from fishing vessels but also operating land-based fishing gears and/or from shore foot-fishing without the use of boats.

Fishery: A fishery is an activity leading to the harvesting of fish, within the boundaries of a defined area. The fishery concept fundamentally gathers indication of human fishing activity, including from economic, management, biological/environmental and technological viewpoints (FIRMS 2006, modified from FAO glossary of fisheries)”

Fishery (FIRMS): A fishery is an activity leading to the harvesting of fish, within the boundaries of a defined area. The fishery concept fundamentally gathers indication of human fishing activity, including from economic, management, biological/ environmental and technological viewpoints. (FIRMS 2006, modified from FAO glossary of fisheries <http://firms.fao.org/firms/concepts/en>)

Fishery inventory (FIRMS): “A fishery inventory is a comprehensive list of fishery units identified at an agreed scale and within a defined scope, including consideration of geographic reference, thematic approach, and purpose”. Geographic reference, thematic approach, and purpose are the main criteria driving the identification of fishery units in an inventory.

Fishery fleet (CWP [FAO, 2022g]): The term “fishery fleet” or “fishery vessels” refers to mobile floating objects of any kind and size, operating in freshwater, brackish water and marine waters which are used for catching, harvesting, searching, transporting, landing, preserving and/or processing fish, shellfish and other aquatic organisms, residues and plants.

Fishery sector (draft): The term “fishery sector” refers to a subset of a fishery which shares similar technical, regional or socioeconomic characteristics, such as a fishing fleet comprised of artisanal, commercial or subsistence fishers, or a fleet operating in domestic/EEZ waters or in the high seas

Fishing gear (draft, based on FAO, 2022h): The term “fishing gear” refers to specialized equipment used for catching fish and defined according to the international standard classification revised version (ISSCFG Rev1, 2010). Each gear can have multiple configurations.

Fishing gear specific effort measure: to be defined

Fishing trip (draft, based on NOAA): The term “fishing trip” refers to a period of time that begins when a fishing vessel departs from a dock, berth, beach, seawall, ramp, or port to carry out fishing activities and that terminates when the vessel returns to a dock, berth, beach, seawall, ramp, or port.

Fishing unit (FAO, GRSF for unique identification and traceability): A fishing unit is a fishery targeting a single species (or group of species) conducted by a single flag state using a single fishing gear operating in a water area, which is possibly managed by a single empowered management authority or treaty under a unique set of management measures.

Fishing vessel (CWP [FAO, 2022g]): The term “fishing vessel” refers to a vessel which is engaged only in catching operations.

Fleet capacity (draft): the term “fleet capacity” refers to a nominal measure of the capacity of a fishery fleet to conduct fishing activities. For statistical purposes, fleet capacity may be summarized by fishing vessel tonnage or vessel type based on two international classifications adopted by the CWP:

1. The “International Standard Statistical Classification of Fishery Vessels by GRT Categories” (ISSCFV), based on the gross register tonnage of the vessels, approved by the CWP in 1977. See ISSCFV GRT classification (FAO, 2022i).
2. The “International Standard Statistical Classification of Fishery Vessels by Vessel Types” (ISSCFV), based on the type of gear used by the vessels, approved by the CWP in 1984 (FAO, 2022j).

Fleet segment: Group of vessels with the same length class (LOA, length overall) and vessel type based on predominant fishing gear during the year.

Fish aggregating device (FAD) (draft, based on FAO): The term “FAD” refers to a permanent, semi-permanent or temporary structure or device made from any material and used to lure fish.

Incidental catch (draft): The term “incidental catch” refers to a subset of the bycatch which interacts incidentally with the fishing gear and becomes hooked, netted or entangled, such as incidental catch of marine mammals, seabirds and turtles

Full-time fishers (CWP): Workers who receive at least 90 percent of their livelihood from fishing or spend at least 90 percent of their working time in that occupation (for full-time/part-time employment, see also classification of occupations in the CWP handbook).

Landing (CWP [FAO, 2022e]): The net weight of the quantities landed as recorded at the time of landing, including:

- Whole or eviscerated fish, fillet, livers, roes, etc.
- Fresh, iced, chilled or frozen, cured or canned products, etc
- Fishmeals, liver oils, body oils, etc
- Other edibles or inedibles fishery products, etc.

Landed weight (CWP [FAO, 2022e]): The term “landed weight” refers to the mass (often referred to as weight) of a product at the time of landing, regardless of the state in which it is landed. That is, the fish may be whole, or gutted or filleted. Consequently this measure is of limited use for further analysis except where it is known that the product is homogenous in nature. Where more detailed analysis of the data is required, the landed weight is generally converted to a more meaningful measure, the most frequently used being the "nominal catch" (see below).

Live weight: The term “live weight” refers to the weight of fish or other organisms when brought on board alive and prior to processing.

Length class: To be defined.

Maturity: To be defined.

Metier: A group of fishing operations targeting a similar (assemblage of) species, using similar gear (4), during the same period of the year and/or within the same area and which are characterised by a similar exploitation pattern.

Mothership: To be defined.

Multigear vessel: vessels which physical structure make them non specialized in the operation of one – sometimes two – particular fishing geartypes, and make them able to operate different geartypes in the day or over the year.

According to FAO (FAO, 1985): “Vessels which are equipped for alternative use of two or more different fishing gear without major modifications to the vessels’ outfit and equipment”.

Nationality of catch and landings (CWP [FAO, 2022k]): For the purpose of reporting national fishery statistics, the catch and landings is generally assigned to the country of the flag flown by the fishing vessel. However, the CWP recommended that this may be over-ridden only when one of the following arrangements between a foreign flag vessel and the host country exists: the vessel is chartered by the host country to augment its fishing fleet; or the vessel fishes for the country by joint venture contracts or similar agreements (as opposed to the ad hoc practice of a vessel selling catches to a foreign vessel or landing catches at a foreign port) and the operation of such vessel is an integral part of the economy of the host country. In either case, the assignment of nationality to catch and landings data should be specified in the charter or joint-venture agreements.

Nominal catch (CWP [FAO, 2022e]): The term “nominal catch” refers to the landings converted to a live weight basis. Nominal catch is often referred to as the “live weight equivalent of the landings” or shortened to the “live weight”, and in some national publications it is also referred to as “landings on a round, fresh basis”, “landings on a round, whole basis” or “landings on an ex-water basis”. Care should be taken when referring to the nominal catch as the “catch” since in many situations the catch includes components which are not landed (refer to the catch concept diagram, Figure 2).

Nominal effort: To be defined.

Non-fishing vessel (CWP [FAO, 2022g]): The term “non-fishing vessel” applies to vessels performing other functions related to fisheries, such as supplying, protecting, rendering assistance or conducting research or training.

Occasional fishers (CWP): Workers who receive under 30 percent of their livelihood from fishing, or spend under 30 percent of their working time in that occupation.

Part-time fishers (CWP): Workers who receive at least 30 percent but less than 90 percent of their livelihood from fishing or spend at least 30 percent but less than 90 percent of their working time in that occupation (for full-time/part-time employment, see also classification of occupations in the CWP handbook).

Post release mortality (FAO): This term refers to the quantity (commonly an average expected percentage) of the catch which is discarded alive, but will die in the immediate or long term due to various harmful effects of the capture and/or discarding processes.

Predominant fishing gear: The gear type used by a fishing vessel more than 50 percent of its time at sea using the same gear during the year. This percentage may be based on the vessel’s attributed fishing license(s), on measures of fishing days by gear type, or on vessel owner’s empirical knowledge. The predominant fishing gear characterizes the allocation of a fishing vessel to a vessel type in the fleet segments classification, on a yearly basis. In absence of a predominant fishing gear, the vessel shall be allocated to the multi-gear vessel type.

Primary gear (draft): The term “primary gear” refers to the fishing gear which is used in greater than or equal to 50 percent of the fishing activities during a fishing trip.

Reference year: The term “reference year” refers to the calendar year (1 January to 31 December) for which statistics are reported as recommended by CWP for standard reporting timelines.

Research surveys at sea: Trips carried out on a research vessel, or a vessel dedicated to scientific research for stock and ecosystem monitoring, and designated for this task by the body in charge of the implementation of the national work plan established in accordance with Article 21 of Regulation (EU) No 508/2014.

Retained catch (CWP [FAO, 2022e]): The term “retained catch” refers to the component of the catch which is retained on board the fishing vessel (refer to the catch concept diagram, Figure 2). The retained catch is reported as total live weight of fish and other organisms retained and in some fisheries the number of individuals retained is also required to be reported.

Sample design: To be defined.

Socioeconomic data (draft): the term “socioeconomic data” refers to the collection of data on social and economic characteristics of fishers, communities and businesses associated with fishing.

Source of data: To be defined.

Target / primary species: To be defined.

Undecked vessel (Gudmundsson, 2009): Undecked vessels do not have a fixed watertight deck and will therefore not have the watertight and weathertight integrity of decked vessels. (FAO/ILO/IMO, 2012)⁵: an undecked vessel is a vessel which is not a decked vessel.

Vessel beam (draft): is the width of the hull.

Vessel construction location (draft): Location of the vessel shipyard.

Vessel draft (or draught) (draft): Is the vertical distance from the bottom of the keel to the waterline.

Vessel hull type (draft): type of the watertight body of the vessel (steel, aluminum, fiber glass, wood, etc.).

Vessel IMO number (draft): International Maritime Organization number.

Vessel IRCS (draft): International Radio Call Sign.

Vessel main engine power (draft): Power of the vessel main engine (in-board or outboard).

Vessel GRT (draft): Gross registered tonnage.

Vessel GT (draft): Gross tonnage.

Vessel LOA (draft): Length overall is the total length from one end to the other.

Vessel type: the “International Standard Statistical Classification of Fishery Vessels by Vessel Types” (ISSCFV) was set up by the CWP to classify fishery vessels by type, based on vessels structural characteristics that account *inter alia* for the type of fishing gear operated by the vessels. To be functional in the WECAFC small-scale fisheries context, the Vessel type category is to be understood for local vessels according to their exclusive, predominant or non-predominant use of fishing gears.

Vessel year of construction (draft): Year of the original vessel construction.

⁵ Approved by the IMO, the overall responsible agency for vessel safety.

Appendix 1 – List of WECAFC country/territory codes (M49) (UN, 2022)

FAO and CWP are advising to use the M49 classification as Global statistical standard for countries and territories. However for administrative purpose (e.g. the vessel registries), fishery agencies make use of the ISO3 alpha code. This table provides both standards for the WECAFC countries and territories.

Name	M49 code	ISO3 code
Anguilla	660	AIA
Antigua and Barbuda	028	ATG
Bahamas	044	BHS
Barbados	052	BRB
Belize	084	BLZ
Brazil	076	BRA
Colombia	170	COL
Costa Rica	188	CRI
Cuba	192	CUB
Dominica	212	DMA
Dominican Republic	214	DOM
European Union	n/a	EU ^a
European Union– France	250	FRA
Grenada	308	GRD
European Union – France – Guadeloupe	312	GLP
Guatemala	320	GTM
Guinea	324	GIN
Guyana	328	GUY
European Union – France – French Guyana	254	GUF
Haiti	332	HTI
Honduras	340	HND
Jamaica	388	JAM

Name	M49 code	ISO3 code
Japan	392	JPN
European Union – France – Martinique	474	MTQ
Mexico	484	MEX
Netherlands (Aruba, Curaçao, Bonaire, Sint Eustatius and Saba, Sint Maarten [Dutch part])	528	NLD
Nicaragua	558	NIC
Panama	591	PAN
Republic of Korea	410	KOR
Saint Barthélemy	652	N/A
Saint Kitts and Nevis	659	KNA
Saint Lucia	662	LCA
France – Saint-Martin	663	MAF
Saint Vincent and the Grenadines	670	VCT
European Union – Spain	724	ESP
Suriname	740	SUR
Trinidad and Tobago	780	TTO
United Kingdom	826	GBR
United States of America	840	USA
Venezuela (Bolivarian Republic of)	862	VEN

Note:

^a References the ISO2 code, there is no ISO3 for the European Union.

Appendix 2 – WECAFC fishing subareas/divisions for statistical purpose

Introduction

Proposals for the WECAFC statistical subareas and divisions and their delimitations were developed in accordance with the following considerations:

- a) maintain consistency of subareas and divisions with the marine ecosystems;
- b) implement the UNGA-FSA (FAO, 2016d) recommendations and CWP initiative to obtain and maintain distinct separate data between catches taken inside and outside the exclusive economic zones (EEZs) of coastal States;
- c) facilitate the reporting of spatially disaggregated data by WECAFC members;
- d) accounting for references to previous work on FAO areas and discussions for draft WECAFC subareas (including the legacy 1978 delimitations [FAO, 1978]);
- e) consistency with concentrations of main fishing activity (Taconet, Kroodsma and Fernandes, 2019).

For the identification of the subareas and divisions, digital maps of the Large Marine Ecosystems (LMEs) (GEF, 2022) in combination with the WWF Maritime ecoregions (WWF, 2007) database, the continental shelf, and the 200 nautical miles were used as a reference. Specific attention was given to defining the subareas according to the major ecosystems in the WECAFC region (e.g. *Southeast U.S. Continental Shelf, Gulf of Mexico, Caribbean Sea, North Brazil Shelf*; in addition to distinguishing the high seas of the Western Atlantic); as well as defining divisions in accordance with the secondary marine ecoregions (MEOW [The Nature Conservancy, 2019]) (e.g. *Southwestern Caribbean, Western Caribbean*) as far as possible.

For the statistical delimitations of the WECAFC subareas and divisions, two options for their delineation were presented to the participants of the FDS-WG2 in October 2020 and revisited at the May 2021 FDS-WG2 Extended session, with the support of an interactive map viewer:

<https://wecafc-firms.d4science.org/data-viewer/index.html>

- i. Option 1:
 - o base the statistical limits on established maritime boundaries and 200 nautical mile maritime (EEZ) limits;
 - o in areas where maritime boundaries have not been established, the statistical limits are to be delimited according to simple longitudinal or latitudinal straight lines, or oblique straight lines, drawn according to the initial considerations a) to e) above.
- ii. Option 2:

The approach avoids constructing statistical divisions based on maritime boundaries, and instead:

 - o proposes subareas to be defined by simple longitudinal/latitudinal statistical limits as close as possible to the established maritime boundaries and according to the initial considerations a) to e) above, in addition to;
 - o the 200 nautical mile maritime (EEZ) limits.

Of the two options presented for defining the subareas and divisions, the FDS-WG favoured, where possible, using established maritime boundaries and 200 nautical mile maritime limits over straight longitudinal/latitudinal lines, in accordance with the Option 1, while also adhering to the general principles outlined below:

1. That the WECAFC subareas and divisions are identified, as far as possible, consistently with the major ecosystems in the region as the starting point for defining their delineations , and as the overarching principle.
2. That in defining the subareas and divisions, maritime (EEZ) limits are utilized (where they have been established and are not disputed) and other default limits (e.g. 200 nautical miles) as the prevailing principle, in combination with, where required or preferred, simple longitudinal, latitudinal or oblique straight lines in the cases where:
 - (a.) there are no established maritime boundaries, to avoid issues of undefined/disputed maritime spaces;
 - (b.) there are locally recognized and important ecosystem boundaries, together with other considerations such as WECAFC Member countries' data collection capacities that would limit adequate reporting.
3. That some of these subareas and divisions remain to be finalized and are subject to further discussion and modification. This document and any proposal for, or final delineation of, any subarea or division is without prejudice to the WECAFC Member States' maritime claims and boundaries.
4. That these delimitations do not imply the expression of any opinion whatsoever on the part of FAO or WECAFC or its member states concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

Based on input from the May 2021 FDS-WG2 Extended session, a provisional list of subareas and divisions, including correspondence to the large marine ecosystems, or marine ecoregions was developed defining WECAFC subarea delimitations:

FAO Major Fishing Area 31 (Atlantic/Western-Central):

- Subarea 31.1 (*Southeast U.S. Continental Shelf LME*)
- Subarea 31.2 (*Gulf of Mexico LME*)
 - Division 31.2.1 (Gulf of Mexico northern)
 - Division 31.2.2 (Gulf of Mexico southern)
 - Division 31.2.3 (Gulf of Mexico high seas western)
 - Division 31.2.4 (Gulf of Mexico high seas eastern)
- Subarea 31.3 (*Bahaman /Greater Antilles ecoregions / Eastern Caribbean*)
 - Division 31.3.1 (Lesser Antilles)
 - Division 31.3.2 (Greater Antilles northern / Bahaman)
 - Division 31.3.3 (Greater Antilles southern / Jamaica)
 - Division 31.3.4 (Greater Antilles / Cuba northwestern)
- Subarea 31.4 (*high seas Western Atlantic*)
 - Division 31.4.1 (high seas Western Atlantic southeastern)
 - Division 31.4.2 (high seas Western Atlantic northeastern)
 - Division 31.4.3 (high seas Western Atlantic northwestern)
 - Division 31.4.4 (high seas Western Atlantic Bermuda)

- Subarea 31.5 (*North Brazil Shelf LME*)
- Subarea 31.6 (*Southern Caribbean ecoregion*)
 - Division 31.6.1 (Eastern Venezuela)
 - Division 31.6.2 (Western Venezuela)
- Subarea 31.7 (*Southwestern Caribbean ecoregion*)
 - Division 31.7.1 (Columbia Atlantic)
 - Division 31.7.2 (Panama Costa Rica Atlantic)
 - Division 31.7.3 (Nicaragua Atlantic)
 - Division 31.7.4 (Honduras Atlantic)
- Subarea 31.8 (*Western Caribbean ecoregion*)

FAO Major Fishing Area 41 (Atlantic, Southwest):

- Division 41.1.1
- Division 41.1.2
- Division 41.1.4 (partial)

The FDS-WG recommends that the above general principles constitute decisive criteria and should be followed for further proposals on the final subareas and divisions. The FDS-WG further recommends that, to the extent possible, reporting is done at the finest possible division level to ensure the availability of spatial granular data required for scientific purposes.

Figure A2.1. Draft WECAFC subareas and divisional statistical limits as endorsed at the FDS-WG2 Extended session, May 2021



Source: FAO WECAFC Fisheries Data and Statistics Working Group (FDS-WG), 2022. WECAFC Data Viewer. Cited 13 January 2023. www.fao.org/wecafc/data/data-viewer/en

Notes: Dashed red lines indicate where decisions are pending for the final statistical subareas and divisions. Orange dashed lines indicate the delimitations questioned later by the USA delegation through a letter sent to FDS-WG members in September 2021.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Appendix 3 – WECAFC reference list of aquatic species

Introduction and structure

As a preamble, WECAFC competence is recalled regarding species and stocks coverage.

“All living marine resources, without prejudice to the management responsibilities and authority of other competent fisheries and other living marine resources management organizations or arrangements in the area.”¹

Commonalities on WECAFC species categorizations are identifiable from interest expressed for the need of monitoring certain species through the historical establishment of working groups on species (conch, lobster, flying fish) and/or fisheries (e.g. fishery aggregating devices (FAD), deep sea, recreational billfish) and of policies within the region. Initial listings for reporting have derived from policy priorities agreed by Commissions of WECAFC, CRFM and OSPESCA, or other processes (CITES or the Cartagena Convention (Specially Protected Areas and Wildlife (SPAW) Protocol) – UN Environment, Strategic Action Programme for Caribbean and North Brazil Shelf Large Marine Ecosystem (CLME+)) and for which additional data and information are needed for monitoring, reporting, assessment and /or decision-making purposes. Thus, inclusion of specific species into the list for data collection is supported in that they support the policy priorities for the multiple regional Commissions (WECAFC, CRFM, OSPESCA) including informing the various fishery management plans under development. These listings further support the interim framework agreed by regional fishery bodies as specified by the 2016 Interim Coordination Mechanism (ICM) to facilitate, support and strengthen the coordination of actions, among the organizations for sustainable fisheries in the Western Central Atlantic. In particular the ICM specified support for the queen conch, spiny lobster, flying fish, shrimp and groundfish fisheries.

Additionally, it is recognized that other support for species categorization can derive from interest:

- to monitor the high seas straddling/migratory/deep sea species in areas beyond national jurisdiction that would correspond to the WECAFC-as-a body with management authority (e.g. as an RFMO as per WECAFC 16 [FAO, 2016a] decision), and
- to monitor species identified to other importance to the regional fishery bodies (e.g. CRFM, or OSPESCA), and responding to criteria that would make the subregional list distinct from the ICM criteria.

Therefore three main groupings of importance for species reporting are defined for countries. These groups and (where necessary) subgroups are built upon specific bases (i.e. criteria for inclusion) and give way to specific reporting requirements under the DCRF. For implementation in the WECAFC Regional Database, the DCRF fundamentally differentiates the **Main Reference Species** (Group 1) from the two other lists (Groups 2 and 3)

¹ See www.fao.org/fishery/en/organization/wecafc

Group 1 Species - Main reference species (list in Appendix 3.1):

These are key species to the region, other than those included in Group 3, and of specific interest to the WECAFC mandate for which States are strongly encouraged to statistical reporting. These key species are defined upon Basis 1 as follows:

- **Basis 1:** Species with fisheries management plans endorsed (Conch, lobster, flying fish) or under development (e.g. conch, lobster and flyingfish, North Brazil Shelf-Guianas shrimp and groundfish)

Group 2 Species – Other reference species of interest for WECAFC, other than those included in Group 3, **which could be elevated to the Group 1** (list in Appendix 3.2)

Steps to elevate species in Group 2 to Group 1 status follow: nomination from statistical offices of respective countries, and/or nomination by expert working groups (e.g. North Brazil Shelf-Guianas Shrimp and Groundfish WG, Spawning Aggregation WG), and final validation through consensus nomination by the FDS-WG which recommends final endorsement by the Commission. This group is sub-divided into three subgroups defined upon three distinct Bases:

- [Subgroup] **Basis 2**²: Species of interest to historical WGs of regional bodies (WECAFC, CRFM, OSPESCA, including through the ICM). These species would include those such as: small and/or coastal tunas and coastal sharks, dolphinfish, wahoo, reef and shelf species (e.g. shrimps, groupers, snappers, acoupas, etc.), recreational, and commercially targeted (excluding the pelagic sharks) and threatened sharks, rays (Appendix 3.2a).
- [Subgroup] **Basis 3**³: Species in high seas (areas beyond national jurisdiction)/straddling/shared (Appendix 3.2b) and, not under mandate of another RFMO (i.e. as in Appendix 3.3).
- [Subgroup] **Basis 4**⁴: Species for WECAFC region originating from 1978 working party on fishery statistics and/or of interest for other reasons (e.g. of local interest including high commercial value, for biodiversity reasons, or for importance of impacts from due to climate changes) (Appendix 3.2c)

Group 3 Species - Other species of interest to WECAFC Members (list in Appendix 3.3)

The Group 3 species are defined upon Basis 5 as follows:

Basis 5⁵: Species under the mandate of other RFMOs, including for mandatory reporting (e.g. ICCAT <https://old.iccat.int/en/introduction.htm>), such as tuna and tuna-like species and pelagic sharks. Countries are encouraged to follow sampling protocols prescribed by ICCAT for Group 3 species.

² [former basis 4 v.6].

³ [unchanged basis 3 v.6].

⁴ [former basis 5 v.6].

⁵ [former basis 2 v.6].

Species listing structure

The regional WECAFC “main” and “other reference” species categorization refers to the ASFIS classification enriched with regional names in English, Spanish and French. This CWP classification is maintained and used by FAO to standardize species of fisheries and aquaculture interest. See <http://www.fao.org/fishery/collection/asfis/en>. It contains standard (official) names in English, French and Spanish.

The proposed structure is the following:

- ASFIS unique 3 alpha code (3 digits) (from ASFIS classification)
- Scientific name (from ASFIS classification)
- FAO Official English name (from ASFIS classification)
- FAO Official French Name (from ASFIS classification)
- FAO Official Spanish Name (from ASFIS classification)

The complete list of WECAFC List of Main Reference species (Group 1 species, basis 1) and other species of interest is to be defined through process of FDS-WG review. Initially taken from the 1978 list of species of high commercial interest and subsequently revised taking into account national policies and country capacities. Further refinements incorporating flexibilities according to individual tasks of the interim DCRF. Stakeholders are requested to continually review the interim list and confirm additional species from the Subgroup species listings according to bases 1–5 for reporting.

The content of each of the species listing is provided in the following pages for Appendices 3.1, 3.2, 3.3.

Appendix 3.1 – Group 1 species – main reference species

Appendix 3.1 lists Group 1 Species of key importance for the region are listed in association with the relevant WECAFC area(s) - with regional fishery management plans (basis 1). WCA = Western Central Atlantic.

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Basis [Subgroup]	WECAFC area/subarea of main relevance	DCRF task
<i>Species with management plan</i>										
SLC	<i>Panulirus argus</i>	Caribbean spiny lobster	Langouste blanche	Langosta común	Caribbean spiny lobster	Langouste blanche	Langosta común del Caribe	1	WCA	I, II, III, IV, V, VI
FFV	<i>Hirundichthys affinis</i>	Flying Fish	Exocet hirondelle	Volador golondrin	Fourwing flyingfish	Exocet hirondelle	Volador golondrina	1	WCA	I, II, III, IV, V, VI
COO	<i>Lobatus gigas</i>	Queen conch	Strombe rose	Cobo rosado	Queen conch	Lambi	Caracol reina	1	WCA	I, II, III, IV, V, VI
LJN	<i>Lutjanus analis</i>	Mutton snapper	Vivaneau sorbe	Pargo criollo	Mutton snapper	Vivaneau sorbe	Pargo criollo	1	WCA	I, II, III, IV, V, VI
GPN	<i>Epinephelus striatus</i>	Nassau grouper	Mérou raye	Cherna criolla	Nassau grouper	Mérou rayé	Cherna criolla	1	WCA	I, II, III, IV, V, VI
<i>Ground fish and shrimp species may be elevated (Note that additional species of groundfish and shrimp) to main species upon advice from Species WGs and other Reviewer Stakeholders, can be found in the Other Reference Species listing)</i>										

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Basis [Subgroup]	WECAFC area/subarea of main relevance	DCRF task
YNA	<i>Cynoscion acoupa</i>	Acoupa weakfish	Acoupa toeroe	Corvineta amarilla	Acoupa weakfish	Acoupa toeroe	Corvinata amarilla	1	North Brazil Shelf	I, II, III, IV,V, VI
SNC	<i>Lutjanus purpureus</i>	Southern red snapper	Vivaneau rouge	Pargo colorado	Southern red snapper	Vivaneau rouge	Pargo colorado	1	North Brazil Shelf	I, II, III, IV,V, VI
SNL	<i>Lutjanus synagris</i>	Lane snapper	Vivaneau gazon	Pargo bijaiba	Lane snapper	Vivaneau gazou	Pargo bijaiba	1	WCA	I, II, III, IV,V, VI
WKK	<i>Macrodon ancylodon</i>	King weakfish			King weakfish			1	WCA	I, II, III, IV,V, VI
YNV	<i>Cynoscion virescens</i>	Green weakfish			Green weakfish			1	WCA	I, II, III, IV,V, VI
YNE	<i>Cynoscion leiarchus</i>	Smooth weakfish (White Salmon)			Smooth weakfish		Corvinata blanca	1	North Brazil Shelf	I, II, III, IV,V, VI
PNU	<i>Farfantepenaeus subtilis</i>	Southern brown shrimp	Crevette café	Camarón café sureño	Southern brown shrimp	Crevette grise du Sud	Camarón café sureño	1	North Brazil Shelf	I, II, III, IV,V, VI

Question for reviewers:

Identify key shrimp and ground fish species for the region, and annotate the subregion where the species is of importance, and complete the above table. This listing is expected to continue to evolve as countries capacities increase and/or as species WGs elevate species, and the FDS-WG validates and recommends such elevation to the Commission.

Appendix 3.2 – Group 2 species – other reference species of interest for WECAFC that could be elevated to the Group 1

Appendix 3.2a: Species of interest to historical WGs of regional bodies (WECAFC, CRFM, OSPESCA, including through the ICM) (Basis 2). WCA = Western Central Atlantic.

Appendix 3.2a lists species such as: small and/or coastal tunas and coastal sharks, dolphinfish, wahoo, reef and shelf species (e.g. shrimps, groupers, snappers, acoupas, etc.), recreational, and commercially targeted (except pelagic sharks) and threatened sharks, rays (Subgroup Basis 2).

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
<i>Small coastal species, commercially targeted and/or threatened coastal sharks</i>										
DOL	<i>Coryphaena hippurus</i>	Mahi Mahi/ Common dolphinfish	Coryphène commune	Lampuga	Common Dolphin fish	Coryphène commune	Lampuga	2	WCA	II, III
WAH	<i>Acanthocybium solandri</i>	Wahoo	Thazard-bâtard	Peto	Wahoo	Thazard-bâtard	Peto	2	WCA	II, III
SUD	<i>Squatina dumeril</i>	Atlantic Angel Shark			Sand devil	Ange de mer de sable	Tiburón ángel	2	WCA	II, III
CIO	<i>Isogomphodon oxyrinchus</i>	Daggernose Shark	Requin bécune	Cazón picudo sudamericano	Daggernose shark	Requin bécune	Daggernose Shark	2	WCA	II, III
RHR	<i>Rhizoprionodon porosus</i>	Caribbean sharpnose shark			Caribbean sharpnose shark	Requin aiguille antillais	Cazón picudo antillano	2	WCA	II, III
RHL	<i>Rhizoprionodon lalandii</i>	Brazilian sharpnose shark			Brazilian sharpnose shark			2	WCA	II, III
CCR	<i>Carcharhinus porosus</i>	Smalltail shark			Smalltail shark	Requin tiqueue	Tiburón poroso	2	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
CTI	<i>Mustelus canis</i>	Dusky smooth-hound			Dusky smooth-hound	Émissole douce	Boca dulce	2	WCA	II, III
MTR	<i>Mustelus norrisi</i>	Florida smoothhound			Narrowfin smooth-hound	Émissole veuve	Musola viuda	2	WCA	II, III
CCL	<i>Carcharhinus limbatus</i>	Blacktip shark			Blacktip shark	Requin bordé	Tiburón macuira	2	WCA	II, III
CCN	<i>Carcharhinus acronotus</i>	Blacknose shark			Blacknose shark	Requin nez noir	Tiburón amarillo	2	WCA	II, III
CTJ	<i>Mustelus higmani</i>	small eye smoothhound			Smalleye smooth-hound	Émissole tiyeux	Musola amarilla	2	WCA	II, III
TIG	<i>Galeocerdo cuvier</i>	Tiger shark			Tiger shark	Requin tigre commun	Tintorera tigre	2	WCA	II, III
CCP	<i>Carcharhinus plumbeus</i>	Sandbar Shark			Sandbar shark	Requin gris	Tiburón trozo	2	WCA	II, III
CCE	<i>Carcharhinus leucas</i>	Bull Shark			Bull shark	Requin bouledogue	Tiburón sarda	2	WCA	II, III
CTI	<i>Mustelus canis</i>	Smooth dogfish			Dusky smooth-hound	Émissole douce	Boca dulce	2	WCA	II, III
N/A	<i>Mustelus sinusmexicanus</i>	Gulf smoothhound						2	WCA	II, III
RPP	<i>Pristis pectinata</i>	Smalltooth sawfish			Smalltooth sawfish	Poisson-scie tident	Requin-marteau halicorne malltooth sawfish	2	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
RPM	<i>Pristis microdon</i>	Largetooth sawfish			Largetooth sawfish	Poisson-scie grandent	Largetooth sawfish	2	WCA	II, III
MAE	<i>Aetobatus narinari</i>	Spotted eagle ray (chucho)			Spotted eagle ray	Aigle de mer léopard	Chucho pintado	2	WCA	II, III
RA	<i>Dasyatis americana</i>	Sting ray			Southern stingray	Pastenague américaine	Raya látigo americana	2	WCA	II, III
TZB	<i>Narcine bancroftii</i>	Caribbean Electric Ray			Bancroft's numbfish	Torpille de Bancroft	Raya eléctrica torpedo	2	WCA	II, III

Question for reviewers:

Stakeholders are invited to confirm the list and propose species for elevation to Main Reference Species list (Appendix 3.1). See <http://www.fao.org/3/i8718en/I8718EN.pdf> for the list of sharks from the sharks working group.

Appendix 3.2b: Group 2 Species – High Seas and Deep Sea Species falling under a possible mandate of WECAFC as RFMO (Basis 3)

Appendix 3.2b lists high seas and deep sea species such as species from the VME working groups, and other high seas species (except also pelagic sharks) (Subgroup Basis 3). WCA = Western Central Atlantic.

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
BXD	<i>Beryx decadactylus</i>	Alfonsino			Alfonsino	Béryx commun	Alfonsino palometón	3	WCA	II, III
BSF	<i>Aphanopus carbo</i>	black scabbard fish			Black scabbardfish	Sabre noir	Sable negro	3	WCA	II, III
EPI	<i>Epigonus telescopus</i>	black cardinal fish			Black cardinal fish	Poisson cardinal	Boca negra(=Pez del diablo)	3	WCA	II, III
WRF	<i>Polyprion americanus</i>	wreckfish			Wreckfish	Cernier commun	Cherna	3	WCA	II, III
ARS	<i>Aristaeomorphafoliacea</i>	giant red shrimp			Giant red shrimp	Gambon rouge	Gamba española	3	WCA	II, III
RRS	<i>Pleoticus robustus</i>	royal red shrimp			Royal red shrimp	Salicoque royale rouge	Camarón rojo real	3	WCA	II, III
NIS	<i>Penaeopsis serrata</i>	pink speckled deep sea shrimp			Megalops shrimp	Crevette mégalops	Camarón megalops	3	WCA	II, III
MFI	<i>Metanephrops binghami</i>	deep sea lobster			Caribbean lobster	Langoustine des Caraïbes	Cigala del Caribe	3	WCA	II, III
GPX	<i>Epinephelus spp</i>				Groupers nei	Mérous nca	Meros nep	3	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subroup basis	WECAFC subarea of reporting	DCRF task
SNA	<i>Lutjanus spp</i>				Snappers nei	Vivaneaux nca	Pargos tropicales nep	3	WCA	II, III
RPU	<i>Rhomboplites aurorubens</i>				Vermilion snapper	Vivaneau ti-yeux	Pargo cunaro	3	WCA	II, III
HOF	<i>Merluccius albidus</i>				Offshore silver hake	Merlu argenté du large	Merluza blanca de altura	3	WCA	II, III
MVJ	<i>Lophius gastrophysus</i>				Blackfin goosefish	Baudroie pêcheuse	Rape pescador	3	WCA	II, III
JOS	<i>Zenopsis conchifer</i>				Silvery John dory	Saint Pierre argenté	San Pedro plateado	3	WCA	II, III
NTK	<i>Acanthacaris caeca</i>	Deep water lobster			Atlantic deep-sea lobster	Langoustine arganelle	Cigala de fondo	3	WCA	II, III
NFI	<i>Nephropsis rosea</i>				Two-toned lobsterette	Langoustine bicolore		3	WCA	II, III
NFU	<i>Nephropsis aculeata</i>				Florida lobsterette	Langoustine de Floride	Cigala de Florida	3	WCA	II, III
NFN	<i>Nephropsis neglecta</i>				Ruby lobsterette			3	WCA	II, III
ARS	<i>Aristaeomorpha foliacea</i>	Giant red shrimp or giant gamba prawn			Giant red shrimp	Gambon rouge	Gamba española	3	WCA	II, III
AVD	<i>Aristeus virilis</i>				Stout red shrimp	Gambon gaillard	Gambon colorado	3	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
ANJ	<i>Aristeus antillensis</i>				Purplehead gamba prawn	Crevette pourprée	Gamba purpurea	3	WCA	II, III
SSH	<i>Plesiopenaeus edwardsianus</i>				Scarlet shrimp	Gambon écarlate	Gamba carabinero	3	WCA	II, III
n/a	<i>Benthescymus bartletti</i>	Blunt-tail prawn						3	WCA	II, III
CRR	<i>Chaceon quinquefasciatus</i>				Red crab	Gériocrabe rouge	Geriocangrejo rojo	3	WCA	II, III
ELQ	<i>Chaceon eldorado</i>				El Dorado shrimp	Géryon El Dorado	Cangrejo El Dorado	3	WCA	II, III

Question for reviewers:

This list is to be filled out [the proposed species have been extracted from the VME / high sea working groups] – there is no list of species in the terms of reference of the High Seas working group.

Stakeholders are invited to confirm the list and propose species for elevation to Main Reference Species list (Appendix 3.1).

See <http://www.fao.org/3/i8718en/I8718EN.pdf> for the list of sharks from the sharks working group.

Appendix 3.2c: Group 2 Species - originating from 1978 working party on fishery statistics and/or of interest for other reasons (Basis 4).
WCA = Western Central Atlantic.

Appendix 3.2c lists species e.g. of local interest including high commercial value, for biodiversity reasons, or for importance of impacts from due to climate changes (Basis 4).

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
Small pelagics species										
AVA	<i>Cetengraulis edentulus</i>	Atlantic anchoveta	Anchois queuejaune	Anchoveta rabo amarillo	Atlantic anchoveta	Anchois queue jaune	Anchoveta rabo amarillo	4	WCA	II, III
SAA	<i>Sardinella aurita</i>	Round sardinella (Spanish sardine)	Allache	Sardinela atlantica	Round sardinella	Allache	Alacha	4	WCA	II, III
BSR	<i>Sardinella brasiliensis</i>	Brazilian sardinella (TT-Jashua)			Brazilian sardinella	Sardinelle de Brésil	Sardinela del Brasil	4	WCA	II, III
POM	<i>Trachinotus carolinus</i>	Florida pompano	Pompaneau sole	Pámpano amarillo	Florida pompano	Pompaneau sole	Pámpano amarillo	4	WCA	II, III
LHT	<i>Trichiurus lepturus</i>	Largehead hairtail	Poisson sabre (de l'Atlantique)	Sable	Largehead hairtail	Poisson-sabre commun	Pez sable	4	WCA	II, III
LOB	<i>Lobotes surinamensis</i>				Atlantic tripletail	Croupia roche	Dormilona	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
Reef and slope species										
Grouper										
GPR	<i>Epinephelus morio</i>	Red grouper	Mérou rouge	Mero americano	Red grouper	Mérou rouge	Mero americano	4	WCA	II, III
MAB	<i>Mycteroperca bonaci</i>	Black grouper			Black grouper	Badèche bonaci	Cuna bonaci	4	WCA	II, III
EEU	<i>Epinephelus guttatus</i>	Red hind			Red hind	Mérou couronné	Mero colorado	4	WCA	II, III
EET	<i>Epinephelus itajara</i>	Goliath grouper			Atlantic goliath grouper	Mérou géant de l'Atlantique	Mero gigante del Atlántico	4	WCA	II, III
CFJ	<i>Cephalopholis fulva</i>	Coney			Coney	Coné ouatalibi	Cherna cabrilla	4	WCA	II, III
CFL	<i>Cephalopholis cruentata</i>	Graysby			Graysby	Coné essaim	Cherna enjambre	4	WCA	II, III
EFD	<i>Epinephelus adscensionis</i>	Rock hind			Rock hind	Mérou oualioua	Mero cabrilla	4	WCA	II, III
MKT	<i>Mycteroperca tigris</i>	Tiger grouper			Tiger groupe	Badèche tigre	Cuna gata	4	WCA	II, III
MKV	<i>Mycteroperca venenosa</i>	Yellowfin grouper				Badèche de roche	Cuna de piedra	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
EEY	<i>Epinephelus mystacinus</i>	Misty grouper				Mérou brouillard	Mero listado	4	WCA	II, III
EEL	<i>Epinephelus flavolimbatus</i>	Yellowedge grouper				Mérou aile jaune	Mero aleta amarilla	4	WCA	II, III
MKN	<i>Mycteroperca interstitialis</i>	Yellowmouth grouper				Badèche gueule jaune	Cuna amarilla	4	WCA	II, III
Grunts										
HLI	<i>Haemulon plumieri</i>	White grunt				Gorette blanche	Ronco margariteño	4	WCA	II, III
HLU	<i>Haemulon album</i>	White Margate				Gorette margate	Ronco jallao	4	WCA	II, III
HHI	<i>Haemulon sciurus</i>	Bluestriped grunt				Gorette catire		4	WCA	II, III
Porgies										
CBD	<i>Calamus bajonado</i>	Jolthead porgy				Daubenet trembleur	Pluma bajonado	4	WCA	II, III
CFE	<i>Calamus penna</i>	Sheepshead porgy				Daubanet bélier		4	WCA	II, III
JKQ	<i>Calamus pennatula</i>	Pluma porgy			Pluma porgy	Daubenet plume		4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
JIU	<i>Holocentrus rufus</i>	Longspine squirrelfish						4	WCA	II, III
Jacks										
RUB	<i>Caranx crysos</i>	Blue runner				Carangue coubali	Cojinúa negra	4	WCA	II, III
CVJ	<i>Caranx hippos</i>	Crevalle				Carangue crevalle	Jurel común	4	WCA	II, III
LJ	<i>Alectis ciliaris</i>	African Pompano				Cordonnier fil	Pámpano de hebra	4	WCA	II, III
RRU	<i>Elagatis bipinnulata</i>	Rainbow runner				Comète saumon	Macarela salmón	4	WCA	II, III
LJP	<i>Lutjanus apodus</i>	Schoolmaster snapper	Vivaneau dentchien	Pargo amarillo	Schoolmaster snapper	Vivaneau dent-chien	Pargo amarillo	4	WCA	II, III
LJU	<i>Lutjanus buccanella</i>	Blackfin snapper	Vivaneau oreille noire	Pargo sesí	Blackfin snapper	Vivaneau oreille noire	Pargo sesí	4	WCA	II, III
SNR	<i>Lutjanus campechanus</i>	Northern red snapper	Vivaneau campêche	Pargo del Golfo	Northern red snapper	Vivaneau campêche	Pargo del Golfo	4	WCA	II, III
LJY	<i>Lutjanus cyanopterus</i>	Cubera snapper			Cubera snapper	Vivaneau cubera	Pargo cubera	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
LJI	<i>Lutjanus griseus</i>	Gray snapper			Grey snapper	Vivaneau sarde grise	Pargo prieto	4	WCA	II, III
LJJ	<i>Lutjanus jocu</i>	Dogteeth snapper			Dog snapper	Vivaneau chien	Pargo jocú	4	WCA	II, III
SNC	<i>Lutjanus purpureus</i>	Southern red snapper	Vivaneau rouge	Pargo colorado	Southern red snapper	Vivaneau rouge	Pargo colorado	4	WCA	II, III
LTJ	<i>Lutjanus vivanus</i>	Silk snapper	Vivaneau soi	Pargo de lo alto	Silk snapper	Vivaneau soie	Pargo de lo alto	4	WCA	II, III
PQI	<i>Pristipomoides aquilonaris</i>	Wenchman snapper			Wenchman	Colas vorace	Panchito voraz	4	WCA	II, III
UPZ	<i>Pristipomoides macrophthalmus</i>	Cardinal snapper			Cardinal snapper	Colas gros yeux	Panchito ojón	4	WCA	II, III
RPU	<i>Rhomboplites aurorubens</i>	Vermillion snapper				Vivaneau ti-yeux	Pargo cunaro	4	WCA	II, III
SNY	<i>Ocyurus chrysurus</i>	Yellowtail snapper	Vivaneau queue jaune	Rabirubia	Yellowtail snapper	Vivaneau queue jaune	Rabirubia	4	WCA	II, III
ASX	<i>Apsilus dentatus</i>	Black snapper			Black snapper	Vivaneau noir	Pargo mulato	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
EEO	<i>Etelis oculatus</i>	Queen snapper			Queen snapper	Vivaneau royal	Pargo cachucho	4	WCA	II, III
SNC	<i>Lutjanus purpureus</i>	Red snapper			Southern red snapper	Vivaneau rouge	Pargo colorado	4	WCA	II, III
Parrotfishes										
USU	<i>Scarus coeruleus</i>	Blue parrotfish			Blue parrotfish			4	WCA	II, III
MWD	<i>Scarus coelestinus</i>	Midnight parrotfish			Midnight parrotfish	Perroquet noir		4	WCA	II, III
USN	<i>Scarus taeniopterus</i>	Princess parrotfish			Princess parrotfish	Perroquet princesse		4	WCA	II, III
UVT	<i>Scarus vetula</i>	Queen parrotfish			Queen parrotfish	Perroquet périco		4	WCA	II, III
QUF	<i>Scarus guacamaia</i>	Rainbow parrotfish			Rainbow parrotfish	Perroquet arc-en-ciel	Loro guacamayo	4	WCA	II, III
QZV	<i>Sparisoma rubripinne</i>	Redfin parrotfish				Perroquet basto	Loro basto	4	WCA	II, III
RSY	<i>Sparisoma chrysopterym</i>	Redtail parrotfish			Redtail parrotfish	Perroquet vert		4	WCA	II, III
QRV	<i>Sparisoma viride</i>	Stoplight parrotfish			Stoplight parrotfish	Perroquet feu		4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
RMF	<i>Sparisoma aurofrenatum</i>	Redband parrotfish			Redband parrotfish	Perroquet tacheté		4	WCA	II, III
USS	<i>Scarus iserti</i>	Striped parrotfish				Perroquet rayé		4	WCA	II, III
Surgeon fishes										
AQO	<i>Acanthurus coeruleus</i>	Blue tang surgeonfish			Blue tang surgeonfish	Chirurgien bayolle		4	WCA	II, III
AQB	<i>Acanthurus bahianus</i>	Ocean surgeonfish			Ocean surgeon	Chirurgien marron		4	WCA	II, III
AQH	<i>Acanthurus chirurgus</i>	Doctorfish			Doctorfish	Chirurgien docteur		4	WCA	II, III
Triggerfishes										
CZT	<i>Canthidermis sufflamen</i>	Ocean triggerfish			Ocean triggerfish		Sobaco lija	4	WCA	II, III
BLV	<i>Balistes vetula</i>	Queen triggerfish			Queen triggerfish	Baliste royal		4	WCA	II, III
TRG	<i>Balistes capriscus</i>	Gray triggerfish			Grey triggerfish	Baliste cabri	Pejepuerc o blanco	4	WCA	II, III
Wrasses										

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
LCX	<i>Lachnolaimus maximus</i>	Hogfish			Hogfish	Labre capitaine	Doncella de pluma	4	WCA	II, III
JJB	<i>Halichoeres radiatus</i>	Puddingwife			Puddingwife wrasse	Donzelle arc-en-ciel		4	WCA	II, III
BDR	<i>Bodianus rufus</i>	Spanish hogfish			Spanish hogfish	Pourceau espagnol		4	WCA	II, III
Angelfishes										
KGR	<i>Holocanthus ciliaris</i>	Queen angelfish			Queen angelfish	Demoiselle royale		4	WCA	II, III
KHH	<i>Pomacanthus arcuatus</i>	Gray angelfish			Grey angel fish	Demoiselle blanche		4	WCA	II, III
QPG	<i>Pomacanthus paru</i>	French angelfish			French angelfish	Demoiselle chiririte		4	WCA	II, III
Shrimp species										
ABS	<i>Penaeus aztecus</i>	Northern brown shrimp	Crevette royale grise	Camarón café norteño	Northern brown shrimp	Crevette royale grise	Camarón café norteño	4	WCA	II, III
APS	<i>Penaeus duorarum</i>	Northern pink shrimp	Crevette rodché du nord	Camarón rosado norteño	Northern pink shrimp	Crevette rose du Nord	Camarón rosado norteño	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
SOP	<i>Farfantepenaeus notialis</i>	Southern pink shrimp	Crevette rodché du sud	Camarón rosado sureño	Southern pink shrimp	Crevette rose du Sud	Camarón rosado sureño	4	WCA	II, III
PNT	<i>Litopenaeus schmitti</i>	Southern white shrimp	Crevette ligubam du sud	Camarón blanco sureño	Southern white shrimp	Crevette ligubam du Sud	Langostino blanco sureño	4	WCA	II, III
PST	<i>Penaeus setiferus</i>	Northern white shrimp	Crevette ligubam du nord	Camarón blanco norteño	Northern white shrimp	Crevette ligubam du Nord	Camarón blanco norteño	4	WCA	II, III
PNU	<i>Farfantepenaeus subtilis</i>	Southern brown shrimp	Crevette café	Camarón café sureño	Southern brown shrimp	Crevette grise du Sud	Camarón café sureño	4	WCA	II, III
PNB	<i>Penaeus brasiliensis</i>	Pink spotted shrimp			Redspotted shrimp	Crevette royale rose	Camarón rosado con manchas		WCA	II, III
ORRS	<i>Pleoticus robustus</i>	Royal red shrimp	Crevette salicoque	Camarón rojo real	Royal red shrimp	Salicoque royale rouge	Camarón rojo real	4	WCA	II, III
SSH	<i>Plesiopenaeus edwardsianus</i>	Imperial red shrimp		Gamba carabinero	Scarlet shrimp	Gambon écarlate	Gamba carabinero	4	WCA	II, III
PNB	<i>Penaeus brasiliensis</i>	Redspotted shrimp	Crevette royale rose	Camarón rosado con manchitos	Redspotted shrimp	Crevette royale rose	Camarón rosado con manchas	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
BOB	<i>Xiphopenaeus kroyeri</i>	Atlantic seabob	Cevette seabob	Camarón siete barbas	Atlantic seabob	Crevette seabob atlantique	Camarón siete barbas	4	WCA	II, III
RSH	<i>Sicyonia brevirostris</i>	Rock shrimp	Crevette ovetgernade	Camarón de piedra	Rock shrimp	Boucot ovetgernade	Camarón de piedra	4	WCA	II, III
Group 2 Species – other species from 1978 Working Party on Fisheries and Statistics										
SCC	<i>Argopecten gibbus</i>	Calico scallop	Peigne calicot	Peine percal	Calico scallop	Peigne calicot	Peine percal	4	WCA	II, III
RQZ	<i>Arca zebra</i>	Turkey wing	Arche zèbre	Arca zebra	Turkey wing	Arche zèbre	Arca cebra	4	WCA	II, III
BIH	<i>Bairdiella ronchus</i>	Ground croaker	Mamselle rouio	Corvinata ruyo	Ground croaker	Mamselle rouio		4	WCA	II, III
MHG	<i>Brevoortia patronus</i>	Gulf menhaden	Menhaden écailleux	Lacha escarnuda	Gulf menhaden	Menhaden écailleux	Lacha escamuda	4	WCA	II, III
MHA	<i>Brevoortia tyrannus</i>	Atlantic menhaden	Menhaden tyran	Laoha tirana	Atlantic menhaden	Menhaden tyran	Lacha tirana	4	WCA	II, III
CRB	<i>Callinectes sapidus</i>	Blue crab	Crabe bleu	Cangrejo azul	Blue crab	Crabe bleu	Cangrejo azul	4	WCA	II, III
NBR	<i>Caranx bartholomaei</i>	Yellow jack	Carangue grasse	Cojinua amarilla	Yellow jack	Carangue grasse	Cojinua amarilla	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
CVJ	<i>Caranx hippos</i>	Crevalle jack	Carangue crevalle	Jurel comùn	Crevalle jack	Carangue crevalle	Jurel comùn	4	WCA	II, III
CXR	<i>Caranx ruber</i>	Bar jack	Carangue comade	Cojinua carbonera	Bar jack	Carangue comade	Cojinúa carbonera	4	WCA	II, III
OYM	<i>Crassostrea rhizophorae</i>	Mangrove cupped oyster	Huître creuse des Caraïbes	Ostión de mangle	Mangrove cupped oyster	Huître creuse des Caraïbes	Ostión de mangle	4	WCA	II, III
OYA	<i>Crassostrea virginica</i>	American cupped oyster	Huître creuse américaine	Ostión americano	American cupped oyster	Huître creuse/ américaine	Ostión virgínico	4	WCA	II, III
KUI	<i>Cittarium pica</i>	West Indian Top Shell			West Indian top shell	Troque des Antilles	Burgado antillano	4	WCA	II, III
SWF	<i>Cynoscion nebulosus</i>	Spotted weakfish	Acoupa pintade	Corvinata pintada	Spotted weakfish	Acoupa pintade	Corvinata pintada	4	WCA	II, III
STG	<i>Cynoscion regalis</i>	Gray weakfish	Acoupa royal	Corvinata real	Squeteague(=Gray weakfish)	Acoupa royal	Corvinata real	4	WCA	II, III
YNJ	<i>Cynoscion jamaicensis</i>	Jamaican weakfish			Jamaica weakfish	Acoupa mongolare	Corvinata goete	4	WCA	II, III
SNO	<i>Centropomus undecimalis</i>	Common Snook (brochet)			Common snook	Crossie blanc	Róbaló blanco	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
YNV	<i>Cynoscion virescens</i>	Green weakfish	Acoupa cambucu	Corvinata cambucú	Green weakfish	Acoupa cambucu	Corvinata cambucú	4	WCA	II, III
AXP	<i>Sciades proops</i>	Crucifix sea catfish			Crucifix sea catfish	Mâchoiron crucifix	Bagre piedrero	4	WCA	II, III
AWX	<i>Arius sp.</i>	Sea catfish						4	WCA	II, III
SPT	<i>Leiostomus xanthurus</i>	Spot croaker	Tambour croca	Verrugato croca	Spot croaker	Tambour croca	Verrugato croca	4	WCA	II, III
WKK	<i>Macrodon ancylodon</i>	King weakfish	Acoupa chasseur	Pescadilla real	King weakfish	Acoupa chasseur	Pescadilla real	4	WCA	II, III
CKM	<i>Micropogonias furnieri</i>	Whitemouth croaker	Tambour rayé	Corvinón rayado	Whitemouth croaker	Tambour rayé	Corvinón rayado	4	WCA	II, III
CKA	<i>Micropogonias undulatus</i>	Atlantic croaker	Tambour brésilien	Corvinón brasileño	Atlantic croaker	Tambour brésilien	Corvinón brasileño	4	WCA	II, III
MUF	<i>Mugil cephalus</i>	Striped mullet	Mulet cabot	Lisa pardete	Flathead grey mullet	Mulet à grosse tête	Pardete	4	WCA	II, III
MGU	<i>Mugil curema</i>	White mullet	Mulet blanc	Lisa criolla	White mullet	Mulet blanc	Lisa blanca	4	WCA	II, III
MUB	<i>Mugil liza</i>	Lebranche mullet	Millet lebranche	Lebranche	Lebranche mullet	Mulet lebranche	Lebranche	4	WCA	II, III
THA	<i>Opisthonema oglinum</i>	Atlantic thread herring	Chardin fil	Machuelo hebra atlántico	Atlantic thread herring	Chardin fil	Machuelo hebra atlántico	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
NLG	<i>Panulirus guttatus</i>	Spotted spiny lobster	Langouste brésilienne	Langosta moteada	Spotted spiny lobster	Langouste brésilienne	Langosta moteada	4	WCA	II, III
NUL	<i>Panulirus laevicauda</i>	Smoothtail spiny lobster	Langouste indienne	Langosta verde	Smoothtail spiny lobster	Langouste indienne	Langosta verde	4	WCA	II, III
MSL	<i>Perna perna</i>	South American rock mussel	Moule roche sud américaine	Mejillón de roca sudamericano	South American rock mussel	Moule de roche sudaméricaine	Mejillón de roca sudamericano	4	WCA	II, III
BDM	<i>Pogonias cromis</i>	Black drum	Grand tambour	Corvinón negro	Black drum	Grand tambour	Corvinón negro	4	WCA	II, III
BLU	<i>Pomatomus saltatrix</i>	Bluefish	Tassergal	Anchova de banco	Bluefish	Tassergal	Anjova	4	WCA	II, III
RDM	<i>Sciaenops ocellatus</i>	Red drum	Tambour rouge	Corvinón ocelado	Red drum	Tambour rouge	Corvinón ocelado	4	WCA	II, III
BIS	<i>Selar crumenopht halmus</i>	Bigeye scad	Selar coulisou	Chic harro ojón	Bigeye scad	Sélar coulisou	Chicharro ojón	4	WCA	II, III
MOA	<i>Selene setapinnis</i>	Atlantic moonfish	Musso atlantique	Jorobado lamparosa	Atlantic moonfish	Musso atlantique	Jorobado lamparosa	4	WCA	II, III
GBA	<i>Sphyraena barracuda</i>	Great Barracuda			Great barracuda	Barracuda	Picuda barracuda	4	WCA	II, III

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
BAR	<i>Sphyraena spp</i>	Barracuda			Barracudas nei	Bécunes nca	Picudas nep	4	WCA	II, III
LNM	<i>Selene vomer</i>	Lookdown (Moonshine)			Lookdown	Musso panache	Jorobado de penacho	4		
BUA	<i>Chloroscombrus chrysurus</i>	Atlantic Bumper (Plateau)			Atlantic bumper	Sapater	Casabe	4		
KDG	<i>Cardisoma guanhumi</i>	Blue crab			Giant land crab	Tombourou matoutou	Cangrejo de mangle azul	4		
HSR	<i>Hoplosternum littorale</i>	casadura			Atipa	Cascudo	Cascarudo	4		
WPZ	<i>Pomacea urceus</i>	black river conch/ riverconch			n/a			4		

Question for reviewers:

Stakeholders are invited to confirm the list and propose species for elevation to Main Reference Species list (Appendix 3.1).

Appendix 3.3 – Group 3 Species – other species of interest for WECAFC members that are falling under the mandate of other RFMOs including for reporting purposes (ICCAT)

Appendix 3.3 lists Group 3 Species having reporting mandates to neighboring RFMO (e.g. ICCAT <https://old.iccat.int/en/introduction.htm>) including tuna and tuna like species and pelagic sharks (Subgroup Basis 5)

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
Tunas										
BFT	<i>Thunnus thynnus</i>	Northern bluefin tuna	Thon rouge	Atún	Atlantic bluefin tuna	Thon rouge de l'Atlantique	Atún rojo del Atlántico	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
YFT	<i>Thunnus albacares</i>	Yellowfin tuna	Thon albacore	Rabil	Yellowfin tuna	Albacore	Rabil	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
ALB	<i>Thunnus alalunga</i>	Albacore	Germon	Atún blanco	Albacore	Germon	Atún blanco	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BET	<i>Thunnus obesus</i>	Bigeye tuna	Patudo	Patudo	Bigeye tuna	Thon obèse(=Patudo)	Patudo	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
SKJ	<i>Katsuwonus pelamis</i>	Skipjack tuna	Listao	Listado	Skipjack tuna	Listao	Listado	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BLF	<i>Thunnus atlanticus</i>	Blackfin tuna	Thon à nageoire noire	Atún aleta negra	Blackfin tuna	Thon à nageoires noires	Atún aleta negra	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
LTA	<i>Euthynnus alletteratus</i>	Little tunny	Thonine	Bacoreta	Little tunny(=Atl. black skipj)	Thonine commune	Bacoreta	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BON	<i>Sarda sarda</i>	Atlantic bonito	Pélamide	Bonito atlántico	Atlantic bonito	Bonite à dos rayé	Bonito del Atlántico	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
FRI	<i>Auxis thazard</i>	Frigate tuna	Auxide	Melva	Frigate tuna	Auxide	Melva	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
BOP	<i>Orcynopsis unicolor</i>	Plain bonito	Palomette	Tasarte	Plain bonito			5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
SSM	<i>Scomberomorus maculatus</i>	Spotted Spanish mackerel	Thazard tacheté	Carite pintado	Atlantic Spanish mackerel	Thazard atlantique	Carite atlántico	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BLT	<i>Auxis rochei</i>	Bullet tuna	Auxide	Melva	Bullet tuna	Bonitou	Melva(=Melvera)	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BRS	<i>Scomberomorus brasiliensis</i>	Serra Spanish mackerel	Serra Spanish mackerel	Thazard serra	Serra Spanish mackerel	Thazard serra	Serra	5	To be reported according to ICCAT procedures WCA	To be reported according to ICCAT procedures
CFW	<i>Coryphaena equiselis</i>	Pompano dolphinfish			Pompano dolphinfish			5	To be reported according to ICCAT procedures WCA	To be reported according to ICCAT procedures

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
KGX	<i>Scomberomorus Spp</i>	Seerfishes nei	Thazards nca	Carites nep				5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
Billfishes										
SAI	<i>Istiophorus albicans</i>	Atlantic sailfish	Voilier de l'Atlantique	Pez vela del Atlántico	Atlantic sailfish	Voilier de l'Atlantique	Pez vela del Atlántico	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
BUM	<i>Makaira nigricans</i>	Blue Marlin			Blue Marlin	Makaire bleu	Aguja azul	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
WHM	<i>Kajikia albida</i>	Atlantic white marlin			White Marlin	Makaire blanc de l'Atlantique	Aguja blanca del Atlántico	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
SWO	<i>Xiphias gladius</i>	Swordfish			Swordfish	Espadon	Pez espada	5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
SPF	<i>Tetrapturus pfluegeri</i>	Longbill spearfish			Longbill spearfish			5	To be reported according to ICCAT procedures	To be reported according to ICCAT procedures
RSP	<i>Tetrapturus georgii</i>	Roundscale spearfish			Roundscale spearfish			5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedures
<i>Pelagic sharks and rays</i>										
OCS	<i>Carcharhinus longimanus</i>	Oceanic whitetip shark			Oceanic whitetip	Requin océanique	Oceanic whitetip	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedures
RHN	<i>Rhincodon typus</i>	Whale Shark			Whale shark	Requin baleine	Whale shark	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
FAL	<i>Carcharhinus falciformis</i>	Silky Shark			Silky Shark	Requin soyeux	Tiburón jaquetón	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
BTH	<i>Alopias superciliosus</i>	Bigeye thresher shark			Bigeye thresher	Renard à gros yeux	Zorro ojón	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
SMA	<i>Isurus oxyrinchus</i>	Shortfin mako			Shortfin mako	Taupe bleue	Marrajo dientuso	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
POR	<i>Lamna nasus</i>	Porbeagle shark			Porbeagle shark	Requin-taupe commun	Marrajo sardinero	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
BSH	<i>Prionace glauca</i>	Blue shark			Blue shark	Peau bleue	Tiburón azul	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
SPL	<i>Sphyrna lewini</i>	Scalloped hammerhead shark			Scalloped hammerhead	Requin-marteau halicorne	Cornuda común	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure

ASFIS code	Scientific name	Regional English name	Regional French name	Regional Spanish name	ASFIS English name	ASFIS French name	ASFIS Spanish name	Subgroup basis	WECAFC subarea of reporting	DCRF task
SPK	<i>Sphyrna mokarran</i>	Great hammerhead			Great hammerhead	Grand requin marteau	Cornuda gigante	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
SPZ	<i>Sphyrna zygaena</i>	Smooth hammerhead			Smooth hammerhead	Requin-marteau commun	Cornuda cruz(=Pez martillo)	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
SPQ	<i>Sphyrna tudes</i>	Smalleye hammerhead			Smalleye hammerhead	Requin-marteau à petits yeux	Cornuda ojichica	5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure
N/A	<i>Mobula birostris</i>	Giant Oceanic Manta Ray			Giant Oceanic Manta Ray			5	To be reported according to ICCAT procedure	To be reported according to ICCAT procedure

Appendix 4 – Fishing vessel typology

Introduction

Recalling the conclusion on vessel type of the first Working Party on Statistics meeting (1978):

“The Working Party examined the International Standard Statistical Classification of Fishing Vessels (ISSCFV) by GRT categories and by HP categories. It was felt that while these categories would be helpful for classification of larger vessels, they may not be practicable for smaller vessels engaged in artisanal fishery which were very important in this area. It was, therefore recommended by the Working Party that the vessels of 5 tons or less should be classified by length instead of tonnage indicating the hp if the vessels are motorized.”

The challenge is to define the small-scale vessel type given the diversity of type of vessels. The goal here is to be able to give a standard reference to collect data to compute CPUE with comparable unit of effort at regional level.

Considering the definition proposed by Haughton, 2005, to define small-scale fisheries in the Caribbean, *“fisheries involving individuals, households, small fishing companies, or fisherfolk organisations using relatively small, unsophisticated fishing vessels, if any, under 20 m LOA, powered by engines not exceeding 300 hp, operating relatively close to shore, and producing fish for local consumption and/or for export.”*, this provides some indications on a tentative classification.

All vessels above 20m should be considered industrial as per the above definition, in line with ICCAT vessel class definition (ICCAT, 2022b). The international classification defines a size class 12–18 and 18–24m and thus must also be considered.

For industrial fleet, as all Caribbean countries report to FAO for their fleet, the ISSCFV can be used. Two classifications exist:

- one per gross tonnage class (<http://www.fao.org/3/a-bt982e.pdf>)
- and one per vessel type (based on the gear type used: <http://www.fao.org/3/a-bt983e.pdf>)

To accommodate both regional and international fisheries organizations classifications, WECAFC has adopted a «Fleet segment » classification and coding system. The WECAFC Fleet segment classification is defined as the combination of a Vessel type classification derived from the ISSCFV (with minor modifications) and length classes derived from International and ICCAT classifications.

For the purpose of mapping national vessels to the Vessel type classification, the notions of either using gear exclusively, or using gear predominantly, or using gear with no-predominance, will apply (see glossary definition).

Appendix 4.1 – Fleet segment - vessel types by length classes

(The codes for the fleet segments are in the greyed out cell range).

VESSEL TYPE			LENGTH CLASS						
CODE	STAND. ABBREVIATION	NAME	<6m (18.9 ft.)	6 – 9.9 m (19 – 32.4 ft.)	10 – 11.9 m (32.5 – 38.9 ft.)	12 – 17.9 m (39 – 58.9 ft.)	18 - 19.9 m (59 – 64.9 ft.)	20 – 23.9 m (65 – 78.4 ft.)	>=24 m (78.5 ft.)
1	TO	Trawlers	TO-1	TO-2	TO-3	TO-4	TO-5	TO-6	TO-7
2	SP	Purse seiners	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	SP-7
3	SO	Other seiners	SO-1	SO-2	SO-3	SO-4	SO-5	SO-6	SO-7
4	DO	Dredgers	DO-1	DO-2	DO-3	DO-4	DO-5	DO-6	DO-7
6	GO	Gill netters	GO-1	GO-2	GO-3	GO-4	GO-5	GO-6	GO-7
7	WO	Trap setters	WO-1	WO-2	WO-3	WO-4	WO-5	WO-6	WO-7
8	LL	Long liners	LL-1	LL-2	LL-3	LL-4	LL-5	LL-56	LL-7
9	LO	Line vessels (other)	LO-1	LO-2	LO-3	LO-4	LO-5	LO-5	LO-7
9.2	LP	Pole and line vessels	LP-1	LP-2	LP-3	LP-4	LP-5	LP-6	LP-7
9.3	LT	Trollers	LT-1	LT-2	LT-3	LT-4	LT-5	LT-6	LT-7
9.4	LH	Hand liner vessels	LH-1	LH-2	LH-3	LH-4	LH-5	LH-6	LH-7
10.2	MTW	Multigear (or Multipurpose) trawlers (e.g. longline, gillnet, trap, seines, snorkel/scuba, gun, dredge)	MTW- 1	MTW- 2	MTW- 3	MTW- 4	MTW- 5	MTW- 6	MTW- 7

VESSEL TYPE			LENGTH CLASS						
CODE	STAND. ABBREVIATION	NAME	<6m (18.9 ft.)	6 – 9.9 m (19 – 32.4 ft.)	10 – 11.9 m (32.5 – 38.9 ft.)	12 – 17.9 m (39 – 58.9 ft.)	18 - 19.9 m (59 – 64.9 ft.)	20 – 23.9 m (65 – 78.4 ft.)	>=24 m (78.5 ft.)
10.3	MLG	Multigear (or Multipurpose) non trawlers (e.g. longline, gillnet, trap, seines, snorkel/scuba, gun)	MLG-1	MLG-2	MLG-3	MLG-4	MLG-5	MLG-6	MLG-7
19	OV	Other fishing vessels	OV-1	OV-2	OV-3	OV-4	OV-5	OV-6	OV-7
20	HO	Motherships	HO-1	HO-2	HO-3	HO-4	HO-5	HO-6	HO-7
19.9.1 (1)	OVN ⁽¹⁾	Non-motorized Vessels	OVN - 1	OVN - 2	OVN - 3	OVN - 4	OVN - 5	OVN - 6	OVN - 7
99	NOV	No vessel (fishing from shore)	-	-	-	-	-	-	-

⁽¹⁾ Not in the FAO classification – needed for regional classification. Will be considered as FX if needed.

Appendix 5 – Fishing practice

Appendix 5.1 - Fishing gear

We recall here the conclusion on geartype of the first Working Party on Statistics meeting (1978):

“The Working Party reviewed the International Standard Statistical Classification of Fishing Gear (ISSCFG). While the classification looked to be exhaustive, the Working Party felt that it should be examined in detail to evaluate its scope in the WECAFC area.”

Four main gear type families are used in the WECAFC with main sub gears.

- traps (Including pots);
- nets (gill, seine, cast nets, trammel nets);
- lines (long lines, pole line, hand line, trot lines, deep water buoy lines, manual lines - known as hand line, rod and reel);
- trawls.

The revised ISSCFG classification (Rev 1, 2016) is available here:

The WECAFC geartype classification version 1.-1 can be the following from the proposed list above.

Gear categories	Standard abbreviations	ISSCFG code
Beach seines	SB	02.1
Boat seines	SV	02.2
Trawls		03
Gillnet		07
Cast nets	FCN	06.1
Traps		08
Pots	FPO	08.2
Hooks and lines		09
Handlines and hand-operated	LHP	09.1

Gear categories	Standard abbreviations	ISSCFG code
pole-and-lines		
Mechanized lines and pole-and-lines	LHM	09.2
Drifting longlines	LLD	09.32
Longlines	LL	09.39
Trolling lines	LTL	09.5
Harpoons	HAR	10.1
Hand implements	MHI	10.2
Electric fishing	MEL	10.4
Diving	MDV	10.8
Gears nei	MIS	10.9
Gear not known	NK	99.9

Question for the CWP and reviewers:

Why no abbreviation for main categories gillnets, traps, hooks and line and longlines?

Does WECAFC need to define one?

Appendix 5.2 – Fishing mode

Fishing mode classification will complement the Gear type for enhanced fishing effort definition, e.g. to consider the use of fishing aggregation devices (FADs) in tuna line fishing, or certain fishing techniques like diving or hand collection from shore. The proposal for FAD is taken from the recommendation of the March 2018 tuna RFMOs meeting in Rome (FAO, 2019).

The proposed* classification is the following:

Code	Name	Description
N/A	n-a	Not applicable
ALL	All	All fishing modes reported together
FREE	Free	Fishing on free-school/unassociated, no FAD use
ASSO	Associated	Fishing on FAD associated school
DIVE	Diving	Fishing with one or more divers
Sport/recreational	Sport-Recreational	Fishing for sport or recreation, no commercial sale

(*) This table integrates the current proposals of the CWP TG-effort. It will need to be further aligned with the outcome of CWP-27 once endorsed.

Note for the reviewers:

The CWP Fishing effort Task group, TG-Effort, is currently further refining and proposing revised fishing effort standard definitions, and will extend the interim proposal made by the tuna group to CWP on a harmonized fishing effort standard, in particular to take into consideration context of small scale fisheries. The WECAFC experience and participation in this CWP TG-Effort will be important for a full-fledged CWP standard on fishing effort. These Appendices (5.2, 5.3, and 3, 5.4) as adopted by FDS-WG2 will constitute an important contribution to this CWP work, and might be revised by future sessions of FDS-WG according to CWP outcome.

Appendix 5.3 – Fishing effort

The amount of fishing effort expended facilitates the quantifying fishing pressure and in understanding trends in catch per unit of effort (CPUE). Standard measures of effort are identified for unique classes of fishing gear. The Report of technical workshop on global harmonization of Tuna fisheries statistics, March 2018, Session 6.2 provide definitions of standard measures.

Fishing gear category (ISSCFG, 2016)	Standard measures of effort Haul-by-haul data	Aggregated data
Surrounding net (01)	Soak time	Number of sets Number of days fished
Seine (02)	Soak time	Number of sets Number of days fished
Trawl (03)	Tow duration	Number of tows Tow duration Number of days fished
Dredge (04)	Tow duration	Number of tow Tow duration Number of days fished
Lift net (05)	Soak time	Number of sets Soak time Number of days fished
Falling gear (06)	Soak time	Number of sets Soak time Number of days fished
Gillnet and Entangling net (07)	Soak time Length of net set	Number of sets Length of net set Number of days fished
Trap (08)	Soak time	Number of sets Soak time Number of days fished
Hook and line (09)	Soak time Number of hooks set Length of line	Number of hooks set Number of lines set Length of line set
Dive (10.8)	Dive time	Number of hours dived Number of days fished

Appendix 5.4 – Effort measurement by fleet segment

The quantification of fishing effort using standard measures in the context of vesseltype further aids in understanding fishing pressure.

STANDARD ABBREVIATION	VESSEL TYPE	LOA	Unit of capacity	Unit of Activity	Nominal effort
TO	Trawlers	All	GT	Fishing days	GT x fishing days
SP	Purse seiners	All	GT	Number of fishing sets	GT x fishing days
SO	Other seiners	All			
GO	Gill netters	All	Net length	Fishing days	Net Length x fishing days
WO	Trap setters	All	Number of traps / pots	Fishing days	Number of traps / pots x Fishing days
LL	Long liners	All	Number of hooks	Fishing days	Number of hooks x fishing days
LO	Line vessels (other)				
DO	Dredgers	All	GT	Fishing days	GT x fishing days
MTW	Multi-gear trawler vessels	All	Net Length ⁽¹⁾	Fishing days	Net Length ⁽¹⁾ x fishing days
MLG	Multi-gear non-trawler vessels		Number of traps/pots	Fishing days	Number of traps / pots x Fishing days
OV	Other fishing vessels		Number of lines	Fishing days	Number of lines x fishing days
OVN	Non-motorized Vessels				

Note for the reviewers: The CWP Fishing effort Task group, TG-Effort, is currently further refining and proposing revised fishing effort standard definitions, and will extend the interim proposal made by the tuna group to CWP on an harmonized fishing effort standard, in particular to take into consideration context of small scale fisheries. The WECAFC experience and participation in this CWP Task Group will be important for a full-fledge CWP standard on Fishing effort. These Appendices (5.2, 5.3, and 5.4) as adopted by FDS-WG2 will constitute an important contribution to this CWP work, and might be revised according to its outcome.

Appendix 6 – Biological references – under development

Note for the reviewers:

With the DCRF version presented at the FDS-WG2 October 2020 meeting, the need for biological references was identified. The status of this appendix is that of **a first draft** which goal it to introduce required sections and table structures based on references for biological parameters identified with WECAFC, GFCM, ICCAT or other authoritative sources.

The objective of the DCRF framework is to provide relevant WECAFC reference(s) for relevant data/statistics standards, and it is here proposed that this frameworks includes biological parameters formally reviewed/provided/adopted/revised by the WECAFC species working groups. This work, to be considered as evolving and to be undertaken during the 2022+ intersession.

Question for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references.

Appendix 6.1 – Fish length measurement standards

The preferred length class unit for bony fishes and elasmobranchs is total length (TL). TL is measured as lower half centimeter, from tip of snout to the end of the caudal fin. In elasmobranchs, fork length (FL) may be recorded when the caudal fins is damaged and total length cannot be taken. Length units may also be recorded as standard length (SL) or fork length (FL). SL is defined as the measurement taken from the tip of the lower jaw to the posterior end of the hypural bone. Fork length is defined as tip of the jaw or tip of the snout with closed mouth to the center of the fork in the tail.

Illustration showing measurement of total (TL) and standard length (SL) in bony fish. TL = Total Length (Source: GFCM DCRF)

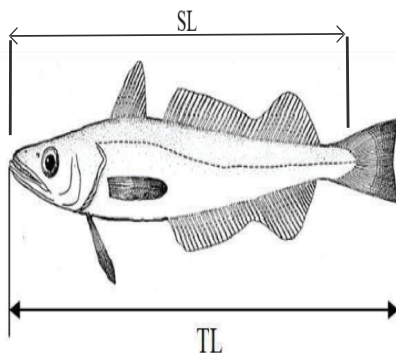


Illustration showing the measurement of total length (TL) sd standard length (SL) in bony fish. TL = total length.



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.)

Convention for length type and interval identity to be further specified.

Appendix 6.2 – Scales of maturity stages

6.2.1 Maturity classification system (based upon Hunter *et al.* (1986))

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG.

6.2.2 Caribbean spiny lobster

Source: FAO. 2019. *Caribbean Spiny Lobster Fishery Regional Management Plan (MARPLESCA plan)*. Seventeenth session of the Western Central Atlantic Fishery, Miami, United States of America, 15–18 July 2019. www.fao.org/fi/static-media/MeetingDocuments/WECAFC/WECAFC2019/17/10e.pdf

Female reproductive status identified (from Form 6 of the MARPLESCA Plan):

Category	Definition
Ovovigerous	With eggs
Ce	with spermatheca
Cre	With traces of spermatheca
Cre + ov	With traces of spermathecal and eggs
Mu	In moulting period

6.2.3 Bony fishes

Stages	Maturation state	Reproductive apparatus aspect	
0	UNDETERMINED	Sex not distinguished by naked eye. Gonads very small and translucent, almost transparent. Sex undetermined.	
		<i>Females</i>	<i>Males</i>
1	IMMATURE-VIRGIN	Small pinkish and translucent ovary shorter than 1/3 of body cavity. Eggs not visible to naked eye.	Thin and whitish testis shorter than 1/3 of body cavity.
2a	VIRGIN-DEVELOPING	Small pinkish/reddish ovary shorter than 1/2 of body cavity. Eggs not visible to naked eye.	Thin whitish testis shorter than 1/2 of body cavity.
2b	RECOVERING	Pinkish-reddish/reddish-orange and translucent ovary; length about 1/2 of body cavity. Blood vessels visible. Eggs not visible to naked eye.	Whitish/pinkish testis, more or less symmetrical; length about 1/2 of body cavity.
2c	MATURING	Ovary pinkish-yellow in colour with granular appearance; length about 2/3 of body cavity. Eggs are visible to naked eye through the <i>ovarian tunica</i> , which is not yet translucent. Under light pressure, eggs are not expelled.	Whitish to creamy testis; length about 2/3 of body cavity. Under light pressure, sperm is not expelled.
3	MATURE/SPAWNER	Ovary orange-pink in colour, with conspicuous superficial blood vessels; length from 2/3 to full length of body cavity. Large transparent, ripe eggs are clearly visible and could be expelled under light pressure. In more advanced conditions, eggs escape freely.	Whitish-creamy soft testis; length from 2/3 to full length of body cavity. Under light pressure, sperm could be expelled. In more advanced conditions, sperm escapes freely.
4a	SPENT	Reddish ovary shrunk to about 1/2 length of body cavity. Flaccid ovarian walls; ovary may contain remnants of disintegrating opaque and/or translucent eggs.	Bloodshot and flabby testis shrunk to about 1/2 length of body cavity.
4b	RESTING	Pinkish and translucent ovary; length about 1/3 of body cavity. Eggs not visible to naked eye.	Whitish/pinkish testis, more or less symmetrical; length about 1/3 of body cavity.

Source: GFCM, 2018. *GFCM Data Collection Reference Framework (DCRF)*. Version: 22.1. www.fao.org/gfcm/data/dcrf/en

6.2.4 Large pelagic - maturity stages for visual examination of gonads

Stage	Criteria	
	Males	Females
Immature	Gonads small ribbon-like, not possible to determine sex by gross examination	Gonads small ribbon-like, not possible to determine sex by gross examination
1	Immature; testes extremely thin, flattened and ribbon-like, but sex determinable by gross examination	Immature; gonads elongated, slender, but sex determinable by gross examination
2	Enlarged testes, triangular in cross section, no milt in central canal	Early maturing; gonads enlarged but individual ova not visible to the naked eye
3	Maturing; milt flows freely if testes pinched or pressed	Late maturing; gonads enlarged, individual ova visible to the naked eye
4	Ripe; testes large, milt flows freely from testes	Ripe; ovary greatly enlarged, ova translucent, easily dislodged from follicles or loose in lumen of ovary
5	Spent; testes flabby, bloodshot, surface dull red, little or no milt in central canal	Spawned; includes recently spawned and post-spawning fish, mature ova remnants in various stages of resorption, and mature ova remnants about 1.0mm in diameter

Source: ICCAT. 2006–2016. Sampling for maturity. In: *ICCAT Manual. International Commission for the Conservation of Atlantic Tuna*. Chapter 4.8. www.iccat.int/Documents/SCRS/Manual/CH4/CH4_8-ENG.pdf

6.2.5 Cephalopods

Stages	Maturation state	Reproductive apparatus aspect	Sex
0	Undetermined	Sex not distinguished by naked eye. Sex undetermined.	U
1	Immature-Virgin	Small and translucent Nidamental glands (NG)/Oviducal glands (OG). Ovary is semi-transparent, stringy and lacking granular structure. Small semi-transparent NG/OG. Oviduct meander not visible. Total absence of spermatophores.	F
		Testis small. Spermatophoric complex (SC) semi-transparent; Vas deferens not visible. Penis appears as a small prominence of SC.	M
2a	Developing	NG/OVG enlarged. NG covering some internal organs. Whitish ovary with granular structure clearly visible, not reaching the posterior half of the mantle cavity. Oviduct meander clearly visible. Eggs very small. Absence of spermatophores.	F
		Enlarged testis with structure not clearly visible. Vas deferens is whitish or white and the spermatophoric organ has white streak.	M
2b	Maturing	Large NG covering the viscera below. Ovary occupies the whole posterior half of mantle cavity, containing reticulated oocytes of all sizes tightly packed and probably a few ripe ova at its proximal part. Oviducts fully developed but empty. Maturing eggs visible to naked eye. Few spermatophores.	F
		Vas deferens is white, meandering, enlarged. Needham's sac (SS) with structure whitish particles inside. Normally the Needham's sac is without functional spermatophores, but sometimes some immature/abortive ones could occur. Testis tight, crispy, with visible structure.	M
3a	Mature	Large NG as previously. Ovary containing higher percentage of large reticulated eggs and some larger ripe ova with smooth surface. In Teuthoidea ripe ova in oviducts. Eggs medium and big, and visible both in oviducts and in the ovary. Well-developed spermatophores.	F
		Testis as before. Spermatophores packed in the Needham's sac.	M
3b	Spent	NG/OG large but soft and running. Ovary shrunk and flaccid, with only immature oocytes attached to the central tissue and a few loose large ova in the coelom. In Teuthoidea, oviduct may contain some mature ova but are no longer packed.	F
		Disintegrating spermatophores in the Needham's sac and the penis.	M

Source: GFCM, 2018. *GFCM Data Collection Reference Framework (DCRF)*. Version: 22.1. www.fao.org/gfcm/data/dcrf/en

6.2.6 Crustaceans

Stages	Maturation state	Reproductive apparatus aspect				
		Colouring of fresh ovary	<i>Parapenaeus longirostris</i>	<i>Aristaeomorpha foliacea</i>	<i>Aristeus antennatus</i>	<i>Nephrops norvegicus</i>
1	Immature	whitish or translucent	Ovaries not visible without dissection. The ovaries are thin and translucent with a tubular appearance adherent to the dorsal portion of the stomach, not extending to the abdomen.	Ovaries not visible without dissection. The ovaries are thin and translucent with a tubular appearance adherent to the laterals of the stomach, not extending to the abdomen.	Ovaries not visible without dissection. The ovaries are thin and translucent with a tubular appearance adherent to the laterals of the stomach, not extending to the abdomen.	Ovaries not visible without dissection. The ovaries are translucent, thin and threadlike.
2	Developing	<i>A. foliacea</i> : flesh coloured; <i>A. antennatus</i> : ivory coloured with orange pink-violet dotting; <i>N. norvegicus</i> : cream; <i>P. longirostris</i> : cream orange;	Ovaries are barely visible without dissection. The cephalic lobes start to cover the sides while the abdominal extensions occupy all somites.	Ovaries barely visible without dissection. Cephalic lobes small but distinguishable. The gonad generally extends up to 3rd abdominal somite.	Ovaries barely visible without dissection. Cephalic lobes small but distinguishable. The gonad extends to the full length of the abdomen.	Ovaries barely visible without dissection. The gonads extend up to the 1st somite of the abdomen and have a granular appearance.
3	Maturing	<i>A. foliacea</i> : light and dark grey; <i>A. antennatus</i> : lilla; <i>N. norvegicus</i> : light green; <i>P. longirostris</i> : light green	Ovaries are clearly visible through integument. Ovaries developed and turgid, with cephalic lobes and abdominal extensions	Ovaries are clearly visible through integument. Ovaries developed and turgid, with evident cephalic lobes. The gonad generally extends to the 4th abdominal somite	Ovaries are clearly visible through integument. Cephalic and abdominal extensions are well developed and turgid.	Ovaries are clearly visible through integument. The gonad occupies one third of the cephalotoracic space. The gonads extend up to the 1st

Stages	Maturation state	Reproductive apparatus aspect				
		Colouring of fresh ovary	<i>Parapenaeus longirostris</i>	<i>Aristaeomorpha foliacea</i>	<i>Aristeus antennatus</i>	<i>Nephrops norvegicus</i>
		or grey green;	occupying the entirely the dorsal portion. The gonads appear granular.			somite of the abdomen.
4	Mature	<i>A. foliacea</i> : black; <i>A. antennatus</i> : violet; <i>N. norvegicus</i> : dark grey; <i>P. longirostris</i> : brightgreen or olive green;	Turgid ovaries extending to the whole dorsal area. Lobes and extensions well developed. Eggs well visible.	Turgid ovaries extending to the whole dorsal area. Lobes well developed and abdominal extensions may reach the 5th somite. Eggs well visible.	Turgid ovaries occupying the whole dorsal area. Lobes and abdominal extensions well developed. Eggs well visible.	Turgid ovaries occupying the whole dorsal cephalotoracic space and extending up to the 2nd somite. Eggs visible.
5	Spent/Resting/Recovering	uncoloured	Ovaries after spawning are fully extended but loose turgidity becoming flaccid.	Ovaries large but flaccid with blackish spots.	Ovaries large but flaccid with purple spots.	Ovaries flaccid with green spots. Re-absorption of ovarian material. Most likely with green eggs on pleopods.

Source: GFCM, 2018. *GFCM Data Collection Reference Framework (DCRF)*. Version: 22.1. www.fao.org/gfcm/data/dcrf/en

6.2.7 Elasmobranchs viviparous

Viviparous elasmobranchs		Females			Males	
Maturation state	Stages	Maturation state	Reproductive apparatus aspect	Stages	Maturation state	Reproductive apparatus aspect
IMMATURE	1	IMMATURE	Ovaries: small and whitish; undistinguishable ovarian follicles. Oviducal gland: often not visible. In some species a thickening of the uteri where the gland will develop may be visible. Uteri: thread-like and narrow.	1	IMMATURE	Claspers: flexible, non-calcified and usually shorter than pelvic fins. Testes: small and undeveloped. Ducts: straight and thread-like.
	2	DEVELOPING	Ovaries: follicles of different stages of development. Some small and medium-sized yolked follicles may be present. Oviducal gland: distinguishable and developing. Uteri: enlarging.	2	DEVELOPING	Claspers: flexible, partially calcified and as long as or longer than pelvic fins. Testes: developing and may start to segment in sharks; in rays lobules clearly visible but do not occupy the whole surface. Ducts: developing and beginning to coil.
MATURE	3	CAPABLE OF REPRODUCTION	Ovaries: presence of large yolked follicles ready to be ovulated. Oviducal glands: fully developed. Uteri: fully developed.	3a	CAPABLE OF REPRODUCTION	Claspers: rigid, fully calcified, and longer than pelvic fins. Testes: fully developed; for some shark species testes are fully segmented. Ducts: tightly coiled and filled with sperm.
				3b	ACTIVE	Claspers: similar to stage 3a, however with clasper glands dilated, sometimes swollen. Sperm may be present in clasper groove or glands. Testes: similar to stage 3a. Ducts: sperm observed inside after a cut or flowing out of the cloaca on pressure.
				4	REGRESSING	Claspers: fully formed, similar to stage 3. Testes shrunken and flaccid, (in skates, with few visible lobules). On pressure, sperm does not flow. Sperm ducts: empty and flaccid. Seminal vesicle developed but empty.

Source: GFCM, 2018. *GFCM Data Collection Reference Framework (DCRF)*. Version: 22.1. www.fao.org/gfcm/data/dcrf/en

6.2.8 Stomatopods

Maturation state	Stages	Reproductive apparatus aspect
IMMATURE	0	ovaries filamentous and hyaline; 6th–8th sternites hyaline
QUIESCENT	1	filamentous ovaries with evident brown dots (chromatophores), 6th–8th sternites hyaline
EARLY MATURATION	2	narrow yellow ovaries, 6th–8th sternites whitish
MATURATION	3	yellow ovaries extending up to half of abdomen width, not visible through cuticle on the ventral side of telson, 6th–8th sternites white.
RIPE	4	yellow ovaries extending over half abdominal width, visible through cuticle on the ventral side of telson, 6th–8th sternites milky white.
SPENT	5	similar to quiescent ovaries, sometime with few yellow dots, but 6th–8th sternites still white.

Source: GFCM, 2018. *GFCM Data Collection Reference Framework (DCRF)*. Version: 22.1. www.fao.org/gfcm/data/dcrf/en

6.2.9 Guidance for collection of maturity data

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG, indicating reference source and including links.

Appendix 6.3 – Growth models adopted by WECAFC for primary species

Species	Area/Sex	Parameters	Reference	Number observations	Length range	Method

Guidance for age and growth data collections

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG, indicating reference source and including links.

Appendix 6.4 – Conversion factors adopted by WECAFC for primary species

6.4.1 Weight–length

Species	Area/sex/season	Relationship	Reference	Number observations	Length range	Method

Guidance for weight-length conversion data collections

Source: NMFS Conversion Factors 1990

www.gsmfc.org/pubs/FIN/Conversion_Factors/NMFS%20Conversion%20Factors%201990.pdf

6.4.2 Length–length

Species	Area/Sex/Season	Relationship	Reference	Number observations	Length range	Method

Guidance for length-length conversion data collections

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG, indicating reference source and including links.

6.4.3 Queen conch formulae for converting from dressed (dirty) weights to live weights

50% clean to dirty weight		CF 95% Confidence interval	
Country	Average CF	Lower	Upper
Martinique	1.53	1.33	1.80
Bahamas	2.05	1.78	2.43
Nicaragua	1.86	1.78	1.96
Dominican Republic	1.69	N.A.	N.A.

85% clean to dirty weight		CF 95% Confidence interval	
Country	Average CF	Lower	Upper
Barbados	1.86	1.42	2.69
Honduras	2.41	2.17	2.73
Dominican Republic	2.11	N.A.	N.A.

100% clean to dirty weight		CF 95% Confidence interval	
Country	Average CF	Lower	Upper
Honduras	2.73	2.46	3.05
Bahamas	2.76	2.37	3.30
Nicaragua	3.06	2.84	3.31
Martinique	2.66	2.30	3.15
Dominican Republic	3.19	N.A.	N.A.

Dirty weight to whole weight		CF 95% Confidence interval	
Country	Average CF	Lower	Upper
Nicaragua	2.73	2.46	3.05
Honduras	2.76	2.37	3.30
Bahamas	3.06	2.84	3.31
Average	5.36	4.69	6.26
Dominican Republic	3.89	Samples with sub-adults only	

Source: Report of the Fourth meeting of CFMC/OSPESCA/WECAFC/CRFM/CITES Working Group on Queen conch, San Juan, Puerto Rico, 16–17 December 2019.
<https://doi.org/10.4060/cb1126b>

Guidance for conversion data collections

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG, indicating reference source and including links.

6.4.4 Lobster conversion formulae for converting from tail weight to whole weights

Guidance for conversion data collections

Note for reviewers:

Reviewers and members of WECAFC Species WGs are invited to submit relevant biological references formally reviewed/provided/adopted/revised by their WG, indicating reference source and including links.

Appendix 7 – Socioeconomics (age groups, currency, etc.)

Appendix 7.1 – Age groups

The age groups adopted for WECAFC employment statistics follow the ILO guidelines “Decent work indicators: guidelines for producers and users of statistical and legal framework indicators” (ILO, 2013).

The categories are:

- <15 years old (for child labour considerations)
- 15–24 years old (for youth employment considerations)
- 24–65 years old
- >65 years old

Source: ILO. 2013. Decent work indicators – Guidelines for producers and users of statistical and legal framework indicators. ILO Manual, Second version. December 2013. Geneva.

www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_229374.pdf

Appendix 7.2 – Currency

The international standard for currency codes ISO 4217 (e.g. USD for US dollar):

	Country	Currency	ISO 4217 currency code
1	Antigua and Barbuda	East Caribbean Dollar	XCD
2	Bahamas	Bahamian Dollar	BSD
3	Barbados	Barbados Dollar	BBD
4	Belize	Belize Dollar	BZD
5	Brazil	Brazilian Real	BRL
6	Colombia	Colombian Peso	COP
7	Costa Rica	Costa Rican Colon	CRC
8	Cuba	Cuban Peso	CUP
9	Dominica	East Caribbean Dollar	XCD
10	Dominican Republic	Dominican Peso	DOP
11	European Union	Euro	EUR
12	France	Euro	EUR
13	Grenada	East Caribbean Dollar	XCD
14	Guatemala	Quetzal	GTQ
15	Guinea	Guinean Franc	GNF
16	Guyana	Guyana Dollar	GYD
17	Haiti	Gourde	HTG
18	Honduras	Lempira	HNL
19	Jamaica	Jamaican Dollar	JMD
20	Japan	Yen	JPY
21	Mexico	Mexican Peso	MXN
22	Netherlands	Euro	EUR
23	Nicaragua	Cordoba Oro	NIO
24	Panama	Balboa	PAB
25	Republic of Korea	Won	KRW
26	Saint Kitts and Nevis	East Caribbean Dollar	XCD
27	Saint Lucia	East Caribbean Dollar	XCD
28	Saint Vincent/Grenadines	East Caribbean Dollar	XCD
29	Spain	Euro	EUR
30	Suriname	Surinam Dollar	SRD
31	Trinidad and Tobago	Trinidad and Tobago Dollar	TTD
32	United Kingdom of Great Britain and Northern Ireland	Pound Sterling	GBP
33	United States of America	US Dollar	USD
34	Venezuela (Bolivarian Republic of)	Bolívar Soberano	VES

Source: ISO. 2022. ISO 4217 Currency codes. In: *International Organization for Standardization*. Geneva. Cited 12 December 2022. www.iso.org/iso-4217-currency-codes.html

Appendix 8 – Questionnaires and data submission schedule

Note for reviewers:

Draft questionnaires for each Task need be developed as part of the pilot WECAFIS implementation. These are then to be reviewed by FDS_WG 3 for adoption. FDS_WG3 is also asked to address the question of a data submission schedule.

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