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CWP standard for reference data harmonization – Logbook data structure

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Executive summary

The ad-hoc Task Group on reference harmonization (TG-RH2) was tasked to finalize the logbook data structure, which was submitted to CWP 26th session (2019) but was not endorsed, as the session requested to further revise the purpose and terminology of logbook guidelines.

This document provides the revised logbook data structure, including main expected outcomes of the TG-catch and TG-Effort.

CWP members are invited to review the logbook data structure for endorsement by CWP 27th session.

Contents

Contents	2
1. Background.....	3
2. Scope and purpose of the logbook data structure.....	3
3. Actions requested by the ad-hoc Task Group RH2.....	4
4. Annex 1: CWP reference harmonization standard: Logbook data structure.	5

1. Background

The dissemination and exchange of statistics through harmonized definitions and structures has been a critical requirement to ensuring time efficient processing of statistical data in support of the best scientific advice and ultimately to improve the fisheries management of marine living resources.

CWP 25th established a Task Group with the objective to present a set and structure of statistical concepts that accommodate the coding system used by CWP parties to improve the data exchange between national, regional and global organizations. The harmonization process was based on an inventory and analysis of the CWP parties data, definition of statistical concepts and related codelists then through reconciliation of the terminology and alignment with CWP standards.

The CWP 26th session meeting held in FAO headquarters (Rome, 2019), endorsed the CWP standard for reference harmonization which consists of a set of data structures and harmonized statistical concepts relevant to capture fisheries ([Appendix 5 – Annex 1](#) of the CWP 26 session report):

- Global Capture Production,
- Catch
- Catch and Effort.

The objective of the CWP standard on reference data harmonization is to lay basis for streamlining data workflow, and ultimately establishing data-sharing agreement as practical work arrangements between agencies involved in a data workflow. This is expected to facilitate the mapping of data elements to standard terminology and to improve data quality by mainstreaming the cross-checking and reconciliation of information.

The data structure on Logbook was not endorsed by CWP 26 as such endorsement was deemed having dependencies on an eventual approval by CWP of the guidelines for the implementation of logbook data for statistical purposes¹ and further elaboration of the concepts and definitions of catch and effort.

The CWP 26th session endorsed the work extension of the CWP standard for Reference Harmonization through a second phase and established the ad-hoc Task Group on Reference Harmonization (TG-RH2). Related to it, the session also mandated two ad-hoc task groups to focus on effort and catch concepts. The CWP 26 also suggested to replace the term ‘logbook’ in the context of statistics with “fishing activity information”.

2. Scope and purpose of the logbook data structure

As requested by CWP26, TG-RH2 further developed the scope and purpose of logbook guidelines (CWP-IS-2022-4) and the related logbook data structure.

Logbook data structure focuses on the context of CWP’s core statistics and can be implemented essentially for needs of national and regional capture fisheries statistics. It is not intended to cover information, as in other frameworks such as FLUX, regarding post-landing operations, prior

¹ Revised handbook section on logbook at the CWP 26th session https://www.fao.org/fi/static-media/MeetingDocuments/cwp/cwp_26/9e.pdf

notifications, transshipments and other fishing activities which do not directly inform capture fisheries statistics.

The revised logbook data structure includes the minimum requirement needed to record the broad range of data types which that may range from data reported in a simple logsheet recording the daily activity of a small-scale fisher, to data reported in a detailed logbook recording information per fishing event. Logbooks also provide a record of fishing activities for a fisher as well as a method of collecting statistical information from capture fisheries.

The revised data structure re-uses the concepts of endorsed data structures by CWP 26 which are composed of the minimum requirements of concepts and classifications that are agreed by the United Nations Statistical Commission which is the highest decision-making body for international statistical activities. They also include concepts and classifications that are supplemented by CWP handbook and international standards such as ISO², while others are still under development by CWP ad-hoc task groups. Extensions are expected to accommodate local needs, by adding modules, dimensions and other concepts (dimensions). Annex 1 presents the concepts and corresponding classifications used in the Logbook data structure. It contains vessel information, catch and effort for each operation (e.g. haul). Information on start and end of time and location of fishing information are also included.

3. Actions requested by the ad-hoc Task Group RH2

In order to submit the data structure on logbook for endorsement, following actions are required:

- To provide feedback on the concepts and classifications used in the present proposal of data structure (Annex 1)
- To agree on finalizing the logbook data structure, after endorsement, based on the outcomes of TG-Catch and TG-Effort.
- To agree on publishing the Logbook data structure in the ‘Sharing practices’ section of the CWP website, and to include it in the guidelines for implementation of CWP standard for reference harmonization (CWP-IS-2022-5).

² ISO standards <https://www.iso.org/standards.html>

4. Annex 1: CWP reference harmonization standard: Logbook data structure.

Note: Concepts highlighted in green are specific to Logbook data structure. All other concepts have been endorsed by CWP 26 under data structure of catch and effort.

Highlighted text in yellow refers to revised concepts to be considered for approval and adoption based on the outcomes of CWP ad-hoc Task Groups at CWP27.

CONCEPT	DEFINITION (and context)	CLASSIFICATION SYSTEM
1. ADMINISTRATIVE /POLITICAL ENTITY *	Basic concept (module) identifies the administrative or political entity to whom the data refers where the fish was caught, produced or landed.	
1.1. COUNTRY	It defines the assignment of nationality to catch and landings.	The "Standard Country or Area Codes for Statistical Use" which is owned by the United Nations Statistics Division (UNSD) and commonly referred to as the M49 standard. The M49 is presented in the CWP handbook where it is mapped to ISO Alpha2 and ISO Alpha3 list of countries and areas.
1.2. FLAG ENTITY	In the context of fisheries operations using flags. It assigns nationalities to catch or landing.	
2. VESSEL INFORMATION		
2.1. VESSEL IDENTIFIER	The Unique Vessel Identifier (UVI) is established by the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels.	The Unique Vessel Identifier (UVI) based on IMO number
2.2. VESSEL NAME	Registered Vessel Name; Mandatory concept for Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels.	No applicable
2.3. VESSEL GROSS TONNAGE	Gross Tonnage of vessel (GT- Gross Tons). It is a mandatory concept for Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels.	The "International Standard Statistical Classification of Vessels by Length Classes" (ISSCFV - Gross Tonnage)
2.4. VESSEL LENGTH	Length overall (LOA in meters). It is a mandatory concept for Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels.	See vessel length. https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishery-fleet/en/
2.5. FISHING VESSEL TYPE	It defines the type of vessel used, with reference to ISSCFV or in the case of multipurpose vessels, a group of fishing vessels using the same gear for more than 50 percent of the time at sea during a year.	The "International Standard Statistical Classification of Fishery Vessels by Vessel Types" (ISSCFV-Vessel Type). http://www.fao.org/3/a-bt983e.pdf
3. FISHING PRACTICE	It is a broad concept that comprises the fishing gear and the fishing mode.	
3.1. FISHING GEAR	It defines the type of tool and equipment used to capture marine/aquatic resources.	The "International Standard Statistical Classification of Fishing Gear" (ISSCFG) is the reference standard. The codes should be chosen from corresponding to the standard abbreviation of gear category. The ISSCFG presents codes of major categories and sub-categories of gear.

3.2. FISHING MODE	It is associated to the fishing gear under one broad concept as “fishing practice” to enhance the fishing effort definition.	TO BE DEFINED: It will be based on the outcomes of the TG-Effort that will be presented in CWP 27 th session.
3.3. FISHING EFFORT UNIT	The unit of effort for each operating gear.	TO BE DEFINED: The list standard measures of effort for each fishing gear (e.g. nb of sets, nb of hours fished) will be based on the outcomes of the TG-Effort that will be presented in CWP 27 th session.
4. TIME	It defines the time unit normally used in statistics.	
4.1. YEAR	The calendar (or Civil) year i.e., the period between 1 January and 31 December.	The ISO 8601 format using the Gregorian calendar.
4.2. TIME START/END	It defines the period in which fishing trip/activity/operation was performed, between time start and end.	ISO 8601 format using the Gregorian calendar and 24-hour time keeping system.
4.3. QUARTER	Quarter of calendar year (Time is referred to Q1 – Q4).	The ISO 8601-2:2019 defines a set of standardised extensions to the ISO 8601 date and time formats. Extended Date/Time Format (EDTF) provides sub-year groupings (Quarter1 – Quarter 4). https://www.loc.gov/standards/datetime/
4.4. MONTH	Months of the year	The ISO 8601-2:2019 defines a set of standardised extensions to the ISO 8601 date and time formats. Extended Date/Time Format (EDTF) provides sub-year groupings (months). https://www.loc.gov/standards/datetime/
5. GEOGRAPHIC AREA	Basic concept (module) defines the area/location/position	
5.1. FISHING AREA	It defines the geographic area which could be presented according to one of the following standard classifications.	
5.1.1. FAO MAJOR FISHING AREAS FOR STATISTICAL PURPOSES	They are arbitrary areas and historically determined coinciding to the greatest extent possible to the areas of competence of other fishery commissions when existing.	The “FAO Major Fishing Areas for statistical purposes” is a hierarchical classification. It comprises 27 major fishing areas and breakdown. Each Major area is divided into subarea, division and subdivision. http://www.fao.org/3/bt979e/bt979e.pdf
5.1.2. CWP AREAL GRID SYSTEM	It is an areal breakdown that is essentially used for the context of Tuna fisheries (e.g. for gridded catches in the FIRMS Global Tuna Atlas)	Various maps, resolutions and square identifiers are provided here: http://www.fao.org/cwp-on-fishery-statistics/handbook/general-concepts/major-fishing-areas-general/en/
5.1.3. WATER AREA JURISDICTION	It refers to water areas according to the rights and jurisdiction exerted by States in or over these areas. It includes Water under National jurisdiction (WNJ) and Areas Beyond National Jurisdiction (ABNJ) which is equivalent to High Seas.	TO BE DEFINED: TG-RH2 is consolidating a proposal for a coding system to better characterize Water Area Jurisdiction which includes WNJ and ABNJ.
5.1.4. RFB COMPETENCE AREA	It corresponds to the Regional Fisheries Bodies (RFBs).	The codes correspond to the acronyms of the Regional Fisheries Bodies (RFBs). The boundaries of their area of competence are presented here: http://www.fao.org/figis/geoserver/factsheets/rfbs.ht

		ml http://www.fao.org/fishery/rfb/en
5.2. POSITION DETAILS	Position details of the fishing trip/ activity/operation. It refers to start/end position	CWP's recommendations on handling geographic coordinates in the context of fisheries data are available in the handbook: https://www.fao.org/cwp-on-fishery-statistics/handbook/general-concepts/geographic-coordinates/en/
5.3. FISHING GROUND	Information and position details of the fishing ground	ISO 6709 also provides standard representation of geographic point location by coordinates.
5.4. LANDING PORT	Ports and their locations are listed in the UN Code for Trade and Transport Locations (UN/LOCODE)	UN/LOCODE covers ports, and other locations for purposes of international trade data interchange. https://www.unece.org/cefact/codesfortrade/codes_in dex.html
6. CATCH	It is a broad concept (module) that comprises the information on catch type, species and units	
6.1. CATCH TYPE	It defines the catch types (gross catch, retained catch, landings, discards).	TO BE DEFINED: it will be based on the outcomes of the TG-CATCH that will be presented in CWP 27th session (e.g. retained, discarded)
6.2. AQUATIC SPECIES	It corresponds to any taxon that lives in water for most or all of its lifetime.	The "ASFIS List of Species for Fishery Statistics Purpose" https://www.fao.org/cwp-on-fishery-statistics/handbook/general-concepts/identifiers-for-aquatic-animals-and-plants/en/
6.3. OBSERVATION_MEASURE	To record the catch amount.	
6.4. UNIT	It defines the unit of measure (e.g. tonnes or number of individuals).	The Unified Code for Units of Measure (UCUM). Exclusively using tonnes for catches: "t" (Metric tons), "no" (Number of fishes).
7. EFFORT		
7.1.OBSERVATION_MEASURE	To record the effort amount.	
7.2 FISHING EFFORT UNIT	The unit of effort for each operating gear. It is also used to record the information on the effort types. Usually for industrial fisheries there is a logbook sheet for each gear/effort type (e.g. fishing trawl logbook, longline logbook).	TO BE DEFINED: The list standard measures of effort for each fishing gear (e.g. nb of sets, nb of hours fished) will be based on the outcomes of the TG-Effort that will be presented in CWP 27 th session.