منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Organización de las Naciones Unidas para la Agricultura y la Alimentación

COORDINATING WORKING PARTY ON FISHERY STATISTICS CWP

Intersessional Aquaculture and Fishery Subject Groups Meetings

Ad-Hoc Task Group on Reference harmonization for capture fisheries and aquaculture

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Outlines

- Scene setting and objectives
- Summary of activities
- Points of discussion
  - Harmonization of data structure and metadata
  - Mapping of codes
  - CWP registry
  - Governance - maintenance
- Actions requested for approval

Scene setting and Objectives

- **Setting the scene**

The incessant increase of diversification of information systems among fisheries institutions enabled an inventive capacity to produce a multiplicity of dissemination formats. It becomes crucial that the CWP plays its role of coordination to develop common procedures for streamlining statistics collation, reducing the burden of statistical offices at national and regional level. In our context, the reference data harmonization set a direction for consistency by setting global standards, guidelines and best practices.

- **Objectives**

The overall aim is to present a set of concepts and a structure of datasets that accommodate the codes used across the CWP parties to improve the data reporting and exchange.

- The dissemination of global Standard for Data Structure Definition (SDSD) and related metadata, based on common set of statistical concepts and linked to a standard terminology, for the aquaculture production and capture datasets.
- Assisting CWP members in improving and harmonizing information, data and statistics collection, collation and dissemination.
- Providing best practices towards usage of the CWP endorsed global Standard for Data Structure Definition.

Summary of Activities

- **CWP members involved**

CWP members that expressed their interest to contribute **CCSBT, Eurostat, FAO, GFCM, IATTC, ICCAT ICES, IOTC, NACA, OECD, SEAFO and SPC-WCPFC**

Eurostat, FAO, GFCM and NACA were involved in the aquaculture topic.

- **Actions**

- Teleconference for kick-off took place on March 23rd 2017.
- Inventory of data, structure and metadata used by CWP parties.
- Proposals from the CWP secretariat presented in CWP-IS.

- **Working document** available at http://www.fao.org/fi/static-media/MeetingDocuments/cwp/cwp_IS_2017/2e.pdf

Points of discussion

1. Harmonization of data structure and metadata
2. Mapping of codes
3. CWP registry
4. Governance - maintenance

Conceptual Proposal for the global Standard for Data Structure Definition

DATA DOMAIN		
Indicator		Purpose
Type	Name	
statistical	Capture produc	Economic
	Catch	Management

Modularity

Concept	COUNTRY	FISHING AREA	AQUATIC SPECIES	TIME UNIT	QUANTITY	OBS_STATUS	UNIT	FISHING GEAR	FISHERY VESSEL	VALUE	OBS_STATUS	UNIT
Concept_Type	Dimension	Geographic Dimension	Dimension	Time Dimension	Primary measure/observation	Attribute	Attribute	Dimension	Dimension	Primary measure/observation	Attribute	Attribute
Classification system	UN Standard country or area codes for statistical use (M49)	FAO Major Fishing Areas for statistical purpose; Areal grid coding system	ASFIS List of Species for Fishery Statistics Purposes	Calendar year		FAO statistical standard for Observation status flags	UCUM Unified Code for Units of Measure	ISSCFG International Standard Classification of Fishing Gears	ISSCFV International Standard Statistical Classification of Fishery Vessels by Categories		FAO statistical standard for Observation status flags	UCUM Unified Code for Units of Measure
Aggregation/ granularity level (Sub_classification)	Aggregated codes (e.g Aggregated member states of EU)	Breakdowns: Subarea, Division (e.g ICES subareas, GFCM GSAs); Areal grid coding system (e.g IOTC 5 degree grid system)	ISSCAAP; Aggregated species (e.g IOTC Group species list)	e.g yearly; monthly; bi-annual				Detailed list of gears; or Aggregated gears (e.g IOTC Fishing gear group)	Detailed list of vessels; or Aggregated vessels (e.g GFCM Vessel Group, OECD Fleet segments)		FAO standard symbols	
Code List	UN code	FAO Fishing Areas; ICES subareas;	Inter-agency 3-alpha code	Calendar Year	Quantity	Observation Status Flag	Units of measure	Gear Category	Fishery Vessel Type	Value	Observation Status Flag	Units of measure
Codelist_id	UN_CODE	FAO_AREAS; GRID_SYSTEM	3ALPHA_CODE	YEAR	QUANTITY	STATUS_FLAG	UNIT	GEAR_CATEGORY	VESSEL_TYPE	VALUE	STATUS_FLAG	UNIT
Description	List of countries or areas (three digits code)	FAO major fishing areas; codes for Statistical quadrangles, and for quadrants	Species reference	Reference year	Quantity of production	FAO Observation status codes (e.g "E"Estimate value, "R"Revised)	Unit of measure (e.g tonnes or number of animals)			Value of production	FAO Observation status codes (e.g "O" Missing value)	Unit of measure (e.g 1000 US$)

1. The global Standard for Data Structure Definition SDSD

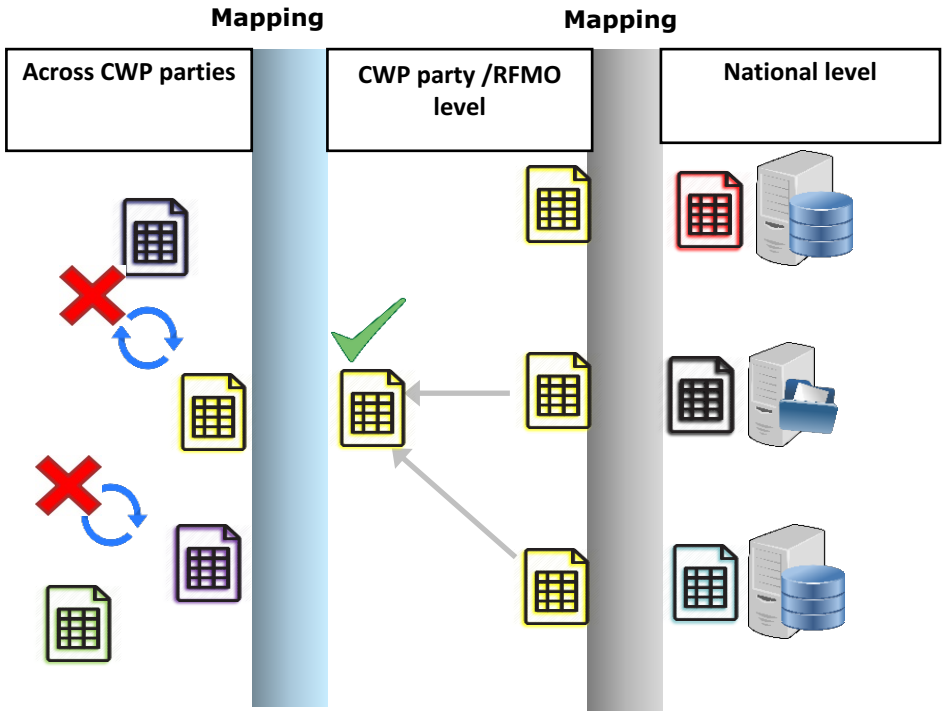
- **Terminology** (data domain, reference data, metadata, codelist,..)
- The SDSD materialize the **minimum global requirements** per data domain.
- It is accompanied with guidelines describing how, from the minimum requirements, **Modularity** of the SDSD provides flexibility allowing to take into account additional dimensions to cater catering with other data domains and with local needs
- CWP standards as reference data are essential mechanisms for the harmonization and coordination to the extent possible
- The global SDSD could be elaborated to meet the distinctive requirements and reference data used across Tuna RFMOs and should allow shaping a DSD specific for TunaRFMOS data requirements (policies and purposes)

Points of discussion

1. Harmonization of data structure and metadata
2. Mapping of codes
3. CWP registry
4. Governance - maintenance

2. Mapping of Codes

Current status of codes mapping among CWP parties



2. Mapping of Codes

- Codes' mapping is defining semantic relationships between codes of different databases. The relationships can be one to one or more complex to be mapped when it is many to one.
- The inventory revealed that CWP parties are using CWP standards coding system to a certain extent.

➢ Some members adopted different classification system (e.g EU DCF for EUROSTAT and ICES) which make the mapping challenging to impossible.

➢ Others (e.g, ICCAT, ICES, IOTC,..) adopted extra codes within the same classification system for their purposes .

In general, the extra codes can be grouped in two main situations:

i. built on the codes of CWP standards by aggregating a group of codes (e.g. group of species built upon the ASFIS codelist),

ii. by extending the CWP standards with more details resulting in lower level of aggregation (e.g gear codes that fall within one class/code of the ISSCFG codelist).

Several codelists mapping have been provided. The discussion should focus on best practices of generic semantic mapping to start solving the common issues as highest priority.

Points of discussion

1. Harmonization of data structure and metadata
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3. CWP registry

A unified and collaborative CWP registry that serves as a catologue - single source of truth - of contents made available to be harvested by CWP parties and national authorities to facilitate data sharing and usage.

- **Contents**

- the **global SDSD**, after its endorsement by CWP
- the reference data used in the global SDSD the CWP standards
- internal reference data used by CWP parties when it cannot be mapped to standards

- **Implementation**

The **CWP registry** is the index of data and metadata that would be hosted in **repository**.

Two alternatives of the repository:

i. a distributed repository architecture which allows interaction among heterogeneous databases of the CWP parties and access to information from dispersed computers.

ii. a centralized dissemination repository that would host the information made available by the parties.

The FAO MDM dissemination services are available to coordinate, catalog and facilitate CWP registry and repository management

- **Exchange Format**

CSV, XML, SDMX, FLUX

3. Governance – Maintenance

The role of governance is to define standards and set of best-practices to ensure that the CWP parties own the process, their information asset, and disseminate and maintain the global SDSD, the international classifications and the codes' mappings.

The maintenance mainly address:

i. new datasets or changes in the reference data and metadata already registered (e.g updates to the CWP standards would have to be in the registry)

i. the mappings among classification and sub-classification systems between any organization when deemed necessary.

The role of maintaining the mapping between internal codelists with CWP standards (is not frequent) should reside at the level of the CWP party.

In the case of any change in the mapping codelists, copies should be made available to the CWP repository for broader dissemination.

iii. Establishing set of best practices for maintenance of the CWP registry's contents and the dissemination workflow across the organizations through the repository (to be developed if endorsed).

Actions requested for approval

The following actions would be required to achieve the objectives of the ad-hoc task group:

- To discuss and provide feedback on the structural elements and conceptual schemes from an overarching perspective towards the validation of the global SDSD and related reference metadata.
- To address the modular structuring of the global SDSD that could accommodate other domains of data collection, or different aggregation levels to match organization's needs.

- To consider the following points for approval:
  - To give the mandate to FAO for coordination and further elaboration of the global SDSD if the proposals are approved.
  - To promote the use of CWP standards to the extent possible and consider procedures of mappings with the organization's coding system, as well as guidelines for implementation of DSDs tailored to local needs.
  - To provide indications towards a mandate of FAO in developing the CWP registry.
  - To provide guidance towards formulation of best practices for the governance and the maintenance of the global SDSD through a CWP registry.
- To agree on the forthcoming tasks and agenda and identify any points to be raised.

Conceptual Proposal for the global Standard for Data Structure Definition

DATA DOMAIN		
Indicator Type	Indicator Name	Purpose
statistical	Aquaculture	Economic

Concept	COUNTRY	PRODUCTION_AREA/ STATISTICAL_AREA	ENVIRONMENT	AQUATIC SPECIES	FARMING STRUCTURE/ PRODUCTION TYPE	PRODUCT TYPE	TIME UNIT	QUANTITY	UNIT	OBS_STATUS	VALUE	UNIT	OBS_STATUS
Concept_Type	Dimension	Geographic Dimension	Dimension	Dimension	Dimension	Dimension	Time Dimension	Primary measure/observation	Attribute	Attribute	Primary measure/observation	Attribute	Attribute
Classification system	UN Standard country or area codes for statistical use (M49)*	FAO Major production areas for statistical purpose	TBD	ASFIS List of Species for Fishery Statistics Purposes	TBD	TBD	Calendar year		UCUM*** Unified Code for Units of Measure	FAO statistical standard for Observation status flags**		UCUM*** Unified Code for Units of Measure	FAO statistical standard for Observation status flags
Aggregation/ granularity level	Aggregated codes (e.g Aggregated member states of EU)	Breakdowns: Subarea, Division (sub-continents or, sub-oceasn, sub-administrative units)		e.g ISSCAAP, Aggregated species			e.g monthly, annual, bi-annual						
Code List	UN Code	FAO production areas	Environment	Inter-agency-3 alpha code	TBD		Year	Quantity	Unit	Observation Status Flag	Value	Unit	Observation Status Flag
Codelist_id	UN_CODE	PRODUCTION_AREA	ENVIRONMENT	3ALPHA_CODE	TBD	TBD	Reference year	QUANTITY	UNIT	STATUS_FLAG	VALUE	UNIT	STATUS_FLAG
Description	List of countries or areas (three digits code)	FAO major production areas	Environment of the production (water type) (e.g brakish water, salt water, marine water)	Species reference	Production unit type (e.g pond, raceway and tank, off bottom, cages,.)	Type of product (e.g eggs, ornamental, food,..)	Time Dimension	Quantity of production	Unit of measure (e.g tonnes or number of animals)	FAO Observation status codes (e.g "F"Forecast value, "R"Imputed value)	Value of production	Unit of measure (e.g 1000 US$)	FAO Observation status codes (e.g "O" Missing value)

Thank you for your attention