



COORDINATING WORKING PARTY ON FISHERY STATISTICS
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FAO report of activities 2013-2016 and plans for the next intersession

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1. Global / regional fishery statistics program

1.1 FAO global capture and aquaculture production database

The FAO global database on capture and aquaculture production is updated annually. Version including 2014 data is expected to be released through FishstatJ in the first week of March of 2016. Number of species items included in the capture production database almost doubled since the first version with separated capture and aquaculture production, as it grew from 1,035 species items in 1996 to 2,004 in 2013.

1.2 Regional capture databases compiled by FAO

The three regional capture databases for CECAF (Eastern Central Atlantic), RECOFI (part of Western Indian Ocean), and the Southeast Atlantic fishing area have continued to be updated annually. Their versions including 2014 data are expected to be released through FishstatJ at about June 2016.

1.3. Production and trade of fishery commodities and conversion factors

1.3.1. Production and trade data

During the last few years, the FAO global fisheries commodities production and trade dataset has been experiencing a delay in its dissemination with one year gap respect to capture-aquaculture statistics. This delay has been mainly caused by a revision of the process of collecting trade data at FAO level. Work is in progress to reduce the gap with capture/aquaculture data and to have concomitant data dissemination for production and trade data during the next biennium.

1.3.2. *Questionnaire of the conversion factors (FISHSTAT CF1)*

Relevant and accurate conversion factors are important because most subsequent analyses of the landings (e.g. for stock assessment and management) and the resultant stock management measures require that the quantities are expressed in a uniform unit, the live weight equivalent. This is also important for the calculation of accurate apparent fish consumption statistics. Conversion factors are of particular relevance for members of CWP and subsequently the CWP requested FAO to maintain records of the conversion factors used by the national authorities. Accordingly FAO introduced a questionnaire, FISHSTAT CF1, on which the national authorities were requested to indicate the appropriate conversion factors. This is not an annual questionnaire but it was distributed on rotation after a certain number of years. The latest collection was done by FAO in 1992-1993, with results published in the FAO. "Conversion factors - landed weight to live weight". FAO Fisheries Circular No.847. 1992 FAO. Then this publication was revised in 2000 in close collaboration between FAO's and the "Fisheries" Sector, Directorate for Agriculture, Environment and Energy Statistics, EUROSTAT ("Conversion factors - landed weight to live weight." FAO Fisheries Circular No.847. Revision 1. 2000).

After several years of interruption, **FAO is planning to collect data on conversion factors from product weight into live weight equivalent** again. The collection will be done through an a revised version of the ad hoc questionnaire (FISHSTAT CF1) to be circulated to national authorities and CWP members starting from April/May 2016. In comparison to the questionnaire sent in 1992-1993, the present version of FISHSTAT CF1 includes an improved breakdown by product forms. The previous collection was focused on the conversion factors from landed to nominal weight, with emphasis on capture fisheries. The present one is targeting to collect the conversion factors on a wider range of product forms. The aim is to review the status of the work on conversion factors compared to previous collection and to build a database, also examining other sources of information.

1.4 Fleet, fishers; HSVAR

A new statistician responsible for fleet and fisher statistics was recruited in 2015.

Fleet Statistics - progress is being made towards resuming the dissemination process for fleet statistics that has been suspended since the last dissemination of data in 1998. In the period 2010-2014, efforts were made to evaluate, fill gaps and missing data reported during the period 1999-2003 which had simply been compiled without assessment. Fleet questionnaires have been sent to member countries as previously but response rate continues to be low and some of the reported data are considered as only partial coverage and others are totally lacking information on size classes and vessel types. Discrepancies in definition of size categories and vessel categories between the national system and that in FAO can be one of major causes of poor reporting.

Number of fishers - progress is being made towards resuming the dissemination process for fisher statistics that has been suspended since 1999¹. In the meantime, fisher questionnaires (FM) have been sent to member countries as previously and data received for the years 1998-2014 were regularly inserted in the database. In the coming dissemination a limited dataset on gendered engagement will be included in the data release. Member countries are encouraged to support reporting on gender in addition to subsistence and occasional engagement for both sectors in support of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries requirement for improved data reporting.

Taking the opportunity presented by the implementation of the new Statistical Working System for all fisheries statistics the formatting of both the Fleet and Fishers surveys will be redesigned to enhance clarity. Further, for consideration by the CWP in the next biennium, it is proposed that the Fleet survey be modified to reduce the number of items requested. For example, reducing the number of vessel types requested should reduce the reporting burden while hopefully encouraging an overall higher response rate with reporting that better represents both the industrial and small scale fleets in member countries.

HSVAR - Since previous reporting, regular work on the HSVAR has continued. 39 countries in total have provided authorized vessel data and of those countries presently part of the Compliance Agreement, two have been updating information on a continuous basis. Belize has been regularly sending monthly reports of the whole authorized high seas fleet indicating any additions or deletions of vessels to the registry. In addition, Seychelles has been constantly informing about the change of status (additions or deletions) of vessels in their registry

1.5. iMarine Tuna Atlas

A Tuna Atlas Virtual Research Environment (VRE) was created in the last 6 months of the iMarine project. This VRE was the result of the past years collaborative work between FAO and the iMarine consortium to streamline FAO tuna atlas activities by automating parts of the process. The VRE offers a toolbox to collate, harmonize and standardize t-RFMO's nominal catches into the FAO tuna atlas database.

FAO, IRD (France) and CNR (Italy) are currently collaborating to replicate and extend the capacities of the Tuna Atlas VRE in the iMarine infrastructure so to be in a position to quickly support other organizations with similar needs: the IRD Sardara data base for harmonization of

¹ FAO Fisheries Circular No. 929, rev. 2, "Number of fishers, 1970-1997"

aggregated tuna catch and effort statistics across t-RFMOs is being implemented as an iMarine VRE; in parallel, ICES plans to exploit the computing facilities in R and Java that are integrated in the statistical manager.

Through the same infrastructure, the statistical records are geo-coded, and are thus easily displayed on maps and used in geospatial analysis. In addition, the enhanced Tuna Atlas will be able to rely on a flexible reporting system to capture the output of model runs in a document; IRD France is developing this facility with FAO.

To bring the results of the Tuna atlas and related application to an international audience with an interest in data harmonization, the participation to RDA (Research Data Alliance, <https://rd-alliance.org/>) is foreseen through the BlueBRIDGE project. This opportunity can foster coordination between activities which aim at setting up standards related to the Fisheries domain. In RDA, a working group or Interest group can be proposed on standardization of data formats, access protocols, controlled vocabularies (code lists, ontologies..) related to Fisheries. The CWP could be involved in raising awareness of existing initiatives at a global scale, discussing additional needs and coordination activities (guidelines and best practices). An initial discussion covered the following initiatives:

- UN-CECAF/FLUX,
- SDEF (ICES standard used by Fishframe / COST projects, a scientific data format for sampling data (CDF/DCMAP data in particular),
- Master Data Management

1.6. Interaction with UNGA, and issues related to request to FAO to revise its global catch database

In the 2006 Review Conference on the United Nations Fish Stocks Agreement (UNFSA), para.19(b) recommends that FAO should “revise its global fisheries statistics database to provide information for the stocks to which the Agreement applies and for high-seas discrete stocks on the basis of where the catch was taken”. The 2010 resumed Review Conference of UNFSA reaffirmed such request to FAO to revise its catch database with distinction of catches within and outside EEZs. In view of the upcoming resumed Review Conference on the UNFSA to be held in 2016, and of the developments foreseen in resolution A/RES/69/292 of 6 July 2015 titled “Development of an international legally-binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction”, FAO decided that a thorough and argued response was necessary in order to explain the practical difficulties in the implementation of this request, and pave the way to future action.

The role of CWP was highlighted particularly in improving the species breakdown reporting (e.g. progress achieved for sharks), and in fostering the definition of new geographic sub-divisions taking into account EEZs boundaries. However practical difficulties included: where decisions could be made on modifications of sub-areas (areas 21 and 47), change in reporting practices by flag states didn't occur in some cases; in other case, decision to modify could not be taken by the sovereign RFB committee (area 34); further, many areas of the ocean are not covered by RFBs and would not fall under the intervention capacity of CWP. Other FAO actions included: reporting on a fishery-by-fishery basis (Deep Sea fisheries); desk studies on share of catches within and

outside EEZs, development of information system capacities for catch reallocation (IOTC, iMarine). The later lead to estimates which rely on sometimes very uncertain assumptions, and produce results which in certain cases might be difficult to accept by member countries.

FAO's response to UNGA also stressed that the responsibility in properly reporting according to the subdivisions primary lies with Flag States, and, secondarily, with the regional fisheries management organizations (RFMOs), as clearly indicated in the United Nations Fish Stocks Agreement (UNFSA). According to the outcome of the discussions at the next UNGA meeting and upon an hypothetical UNGA resolution in May 2016 clearly indicating the States intention to submit such data, the matter is expected to be brought to COFI 2016 for discussion with Member States on envisageable actions, including the provision by FAO of a platform for global compilation and dissemination. In anticipation, it has been decided that COFI's agenda will include an item to review FAO Fisheries statistics program.

Current catch reporting standards set by CWP address food security and socio-economic objectives in line with FAO's primary mandate, and responding to UNGA's recommendation would require a revision of obligations of FAO members on their data reporting but also the need for additional funding.

In this respect, **CWP-25 should review progress made, identify bottlenecks, discuss possible solutions in light of recent developments, and report which contribution the CWP and its Members could propose for consideration by COFI.**

1.7. Inter-agency collaboration in statistics reporting - Eurostat/ICES/FAO collaboration

Eurostat, ICES and FAO regularly met taking an opportunity of Eurostat Fisheries Statistics Working Group meetings, and exchanged the views to keep harmonization of statistics disseminated among three organizations. During this inter-sessional periods, two consultations were held in October 2013, and April 2015. Both meetings confirmed mutual commitments on continued collaboration, and in particular early exchanges of received information. Confidentiality was recognized of becoming the key issue in recent years and the consultation agreed to seek the proper way to address in collaborative manner.

2. Methodologies and tools

2.1. Agriculture Census – fisheries and aquaculture module

FAO Fisheries has collaborated with the FAO Statistics Division on developing the guideline for the World Programme for the Census of Agriculture (WCA) 2020². The WCA-2020 for the first time now includes a fisheries module as a thematic survey in addition to the aquaculture module that have been included since WCA-1990. While it is proposed that Aquaculture be integrated in

² <http://www.fao.org/documents/card/en/c/506491e2-2ed4-4a7d-8104-6358d0e40adc/>

the agriculture census with a few items or in a joint census, Fisheries has been included as a supplementary module for inclusion when agriculture holdings also conduct fisheries activities.

FAO continues to promote active utilization of WCA guidelines, in particular, the separation of 'fishery and aquaculture' from 'agriculture' in the screening question of employment in population census, broadening the scope of agriculture census to include the fishing and aquaculture holdings, and the use of aquaculture and capture fisheries modules in agriculture census.

2.2. Guideline for small-scale fisheries and aquaculture survey

The “Global Strategy of Improving Agricultural and Rural Statistics³” was adopted by the UNSC in 2010 to enhance integration between agricultural and rural statistics (including fishery and aquaculture statistics), with national statistical systems. Under the Research Agenda of the Global Strategy, FAO has developed the guideline for improving understandings on overall contribution of small-scale fisheries and aquaculture in social, economic, and food security aspects, through both commercial and non-commercial activities. The first draft was published in 2015 as the *Guidelines to Enhance Fisheries and Aquaculture Statistics through a Census Framework*⁴ and revised version is now under printing. The guidelines recommend to conduct census or census-type of survey as an initial step. The results of such surveys provide sampling frame to develop regular data collection for small-scale fisheries as well as to be the basis of registries when appropriate. The survey items were designed to cover broader spectrum of information together with essential frame and access information required development of sampling strategies afterwards.

FAO is also developing the guidelines on the enhanced use of administrative information (e.g. licenses), GPS and satellite imageries to create survey frames: specifically of small holders and operators that can be used in the design of an effective sampling scheme.

Efforts in responses to country requests for support in conducting fishery census are currently underway in both Oman and Haiti and will benefit from the materials included in the Guidelines to Enhance Fisheries and Aquaculture Statistics through a Census Framework.

2.3 Evaluation of water use by fisheries sector

Under the Norway project of climate change, FAO has worked to figure out the best way to evaluate the water use and reliance to water resources by the fisheries sector. Due to on-stream use of waters for fishing and some types of aquaculture, it is not easy to evaluate the extent of water resource needs for the fisheries sector in comparison with other sector off-stream water use that extracts water from the source.

³ More information is available at http://www.ibge.gov.br/home/estatistica/indicadores/prpa/segundo_texto.pdf

⁴ <http://gsars.org/wp-content/uploads/2015/06/Guidelines-to-Enhance-Fisheries-and-Aquaculture-Statistics-through-a-Census-Framework-WEB.pdf>

FAO finalized the methodological document proposing several methods of evaluating water use by fisheries using conceptual frame work of the System of Environmental Economic Accounts (SEEA). The exercise proposes a procedure only relying on Central Framework of SEEA, but also those to adopt the Experimental Ecosystem Accounting.

In addition, FAO established a set of water indicators for fisheries and aquaculture sector. The indicators were compiled as an experimental basis using the existing information for nine African and nine Asian countries who have strong relevance of fisheries and aquaculture production and would be subject to the influence of climate changes. The Technical Circular describing the indicators and summary results and supplementary data book are currently under printing.

2.4. ArtFish upgrade

A project to create a generic version of the Open ArtFish software system has been started with the combined efforts of staff and consultants currently and previously involved in sample based survey for small scale fisheries. This project will take the components of existing Open ArtFish implementations that have already been created for various countries and merge them into a consistent application that will be available for download from the FAO Fisheries and Aquaculture website. The generic version will be open (written in MS Access) and customizable for integration within national statistical systems that are already in existence in destination countries. This will allow countries to implement the ArtFish sampling theory data collection system for artisanal fisheries with minimal impact to already existing statistical systems.

2.5. FishStatJ dissemination, and administration console

The FishStatJ administration console (or FishStatJ-Console) is a separate application, used to create workspaces (files with a “.fws“ extension) containing datasets for dissemination using the FishStatJ software. FishStatJ can handle any time-series dataset with yearly resolution. The dataset dimensions use reference-data to define a set of permissible values (hierarchies and relation between concepts are supported).

Following a call for interest disseminated through the RSN newsletter early 2015, FAO is currently working on a ‘proof of concept’ iterative effort that uses the IATTC time-series datasets (Tuna, Billfish, Catch/Flag/Gear) for testing. As part of this work, an operating manual for the FishStatJ-Console is being created. The anticipated result of this effort will be a complete system allowing RFMOs to create, maintain and disseminate their own FishStatJ workspaces.

3. Standards and classifications

3.1. ASFIS list of species

The ASFIS list of species was created in 2000 to: a) revise and update the taxonomic classification of the species items represented in the FAO statistics; b) streamline the inclusion of new species, for which statistics were reported, in the FAO databases; c) provide fishery commissions and national institutions with a common coding system for species related to fishery activities. The ASFIS list is annually updated and new records are assigned for newly reported species or according to requests by CWP Members. In its last update (March 2015), the ASFIS list included 12,600 species items. The next release of the ASFIS list is planned for April-May 2016 and the updated list will be made available promptly at <http://www.fao.org/fishery/collection/asfis/en> and the users informed through an e-mail message.

3.2. Dissemination of the revised handbook at CWP webpage

During the last CWP-IFS meeting (Namibia, Feb. 2015) a proposal for a new CWP Handbook user interface was presented (“[Introduction to the new CWP Handbook user interface](#)”). A new way of offering contents in order to facilitate the information retrieval and utilizations by users.

Three building blocks were identified for the new dynamic interface: Terminology, Classifications, and Methodology Standards for Measurements. Source of information and additional web resources complement the CWP Handbook knowledge base. The new interface will harvest data and information across the building blocks and the constituent items are reciprocally mapped through logical connectors (e.g. tags) to offer a cohesive access to information.

Regarding Master Data Management and Reference Data Management (MDM/RDM), the FAO IT Division is delivering the underpinning IT solution, based on the evaluation and piloting of MDM/RDM software platforms made with FAO technical divisions. Tests with pilot cases have been conducted with positive evaluations. When this facility will be finally available, it will offer the capability to handle reference data including standard terms, concepts and classifications authored by CWP and FIRMS. In addition, in collaboration with [FAO Term](#), multilingual definitions will be handled within that central repository and exposed through web services for being exploited by the CWP Handbook. A similar practice was implemented recently in occasion of the development of the VME Database.

Regarding data exposure of Classifications, Code Systems and Codes, webservices have been developed in form of XML/JSON REST-API.

I.e. (Examples provided in XML but can be also in JSON format “/json”)

Species: <http://figisapps.fao.org/refpub-web/rest/concept/Species/xml>

Fishing gears: <http://figisapps.fao.org/refpub-web/rest/concept/Gear/xml>

Commodities: <http://figisapps.fao.org/refpub-web/rest/concept/Commodities/xml>

Fishing vessels: <http://figisapps.fao.org/refpub-web/rest/concept/Vessel%20Class/xml>

These web-services will be soon released in production⁵, regularly maintained and expose CWP approved standards.

The CWP handbook web pages will contain such links and the new interface will be implemented upon such new facilities.

3.3. Elaboration of handbook on GIS matters

A concept note, available at [Handbook on GIS Matter, ftp://ftp.fao.org/Fl/DOCUMENT/cwp/cwp_25/5e.pdf](http://ftp.fao.org/Fl/DOCUMENT/cwp/cwp_25/5e.pdf) has been prepared to introduce two proposals on GIS matters that might be further elaborated for inclusion in the CWP handbook:

1. relevant to best practices to implement internationally-recognized standards such as ISO and OGC, and regulations such as the EC INSPIRE directive, a piece of Java software currently developed by the FAO Fishery & Aquaculture Department GEMS - GIS Enforcing Metadata & Semantics, to perform the batch creation and web-publication of GIS layers and their associated metadata is introduced.
2. relevant to reporting spatially gridded statistical collections to FAO, a set of guidelines and a description of current available standards are presented and documented for the consideration of participants of CWP25. The authors may refer to Tuna Regional Fisheries Management Organizations (tRFMOs) as examples of data collated by FAO and assembled into a global harmonized dataset.

3.4. Classifications of fishery commodities

3.4.1 ISSCFC

FAO continues to collate the national data in the FAO fishery commodities production and trade database through the **International Standard Statistical Classification of Fishery Commodities classification (ISSCFC)**. The ISSCFC covers products derived from fish, crustaceans, molluscs and other aquatic animals, plants and residues. ISSCFC is being periodically updated in the light of new emerging commodities/species in international trade and of changes in international/national commodity classifications. In its 2015 version (to be disseminated in March 2016) it includes 1 668 items, of which 1 235 items representing the effective codes, while 433 are at level of Chapter/Division/Group. This 2015 version includes an improved breakdown of species and product forms due to the significant changes of the 2012 version of the Harmonized System Classification (HS) of the World Customs Organization (WCO)[1].

The ISSCFC is an expansion of the United Nations Standard International Trade Classification, Revision 3 (SITC Rev.3) developed by the United Nations' Statistical Office with additional positions to include links to FAO ISSCAAP and breakdown by additional species and product

⁵ A live demo (in development environment) can be run at <http://figisapps.fao.org/refpub-web/>

forms. At the moment of the creation of ISSCF in the 1960's, it was decided to adopt SITC as a basis for the classification as being the main statistical classification used by countries in collecting trade statistics. However, this is not valid anymore, with the bulk of the countries having replaced SITC with HS.

International classifications are essential mechanisms for the harmonization and coordination of data compilation worldwide. They allow national data and indicators to be comparable with those of other countries at the global level. To ensure data harmonization and comparability, international standards should be taken as a reference for the development of national and supra-national schemes, and adapted in a way to suit the country requirements and its statistical needs. In this optic, FAO is examining the **possibility to revise the ISSCF**, however no concrete decision on the new structure has been taken yet. Two main options could be eventually considered:

First option:

To create a new version of ISSCF as an expanded version of the HS. This classification should adopt the general structure of the HS (Chapter at two digits, Headings at four digits, Subheadings at six digits), and relative coding, to which a fixed number of digits is added for products and or species not identified in the HS. For example, in the current HS, all shark species are reported under “dogfish and other sharks”, in different product forms (fresh or chilled, frozen etc.). The four digits could be used to identify single shark species.

HS	030375	Dogfish and other sharks, frozen
FAO ISSCF	030375.0001	Blue shark (<i>Prionace glauca</i>), frozen
FAO ISSCF	030375.0002	Scalloped hammerhead (<i>Sphyrna lewini</i>), frozen
FAO ISSCF	etc	etc

The four digits should be used in a consistent way. For example in the above example, 0001 will be the identifier of blue shark (*Prionace glauca*) for all the various codes of “dogfish and other sharks” in different product forms. The additional codes could be also related to improve the specificity of product forms (for example headed and gutted, dried unsalted, in airtight container, etc). The “expanded HS” could become a standard for countries and international organizations wishing to have a classification based on the HS coherent and comparable at international level.

Second option:

To create an entirely new coding system, similar to a taxonomic coding, structured by product forms and species. It would be composed as a concatenated code composed by different numbers (or letters) each specific for that species or product form. It could be for example composed by 10 digits, with standard 3 dedicated to the species, 3 to the type of shape (i.e. whole, fillets, minced, etc), 3 for the type of processing (i.e. fresh or chilled, frozen, dried, etc.), 1 origin (i.e. capture, aquaculture). The advantage of this approach would be to a flexible

classification which could be easy to maintain with resulting data that could be sorted according to the needs (for example by species, by origin, product form etc).

CWP is invited to take into account this possible revision and to provide any suggestion to the CWP Secretariat.

3.4.2 Harmonized system (HS) - FAO Collaboration with World Customs Organization (WCO)

The Harmonized Commodity Description and Coding System, commonly referred to as HS, is used as a basis for the collection of customs duties and international trade statistics by more than 200 countries, with over 98 percent of the merchandise trade classified in terms of the HS. This classification has been developed, introduced and maintained by WCO. Since its introduction and general adoption in 1988, the HS classification has undergone regular reviews.

During the past eight years FAO has been collaborating with WCO to improve the quality of fish trade coverage through an improved specification for species and product forms in the HS. The present version, HS2012, and the next one, HS 2017, both reflect the modifications proposed by FAO. The HS versions prior to HS 2012 presented an insufficient coverage in the classification of fishery species, in particular of those originating in developing countries. This deficiency was also reported to FAO by several countries and in 2003, the twenty-fifth session of the Committee on Fisheries (COFI) instructed FAO to work towards an improvement of the HS classification for fish and fishery products. This request was re-emphasized by different sessions of COFI:FT.

The **HS 2017 will enter into force on 1 January 2017** for all Contracting Parties to the Harmonized System Convention. **This new version will include amendments related to fish and fishery products** for species and/or product forms that need to be monitored for food security purposes and/or for better management of resources, in particular for potentially endangered species, including sharks, skates and rays. In total, 36 new subheadings were created and 36 subheadings were amended. In developing the proposal, FAO also took into account some of the suggested amendments for HS 2017 received during the thirteenth session of FAO COFI-FT. Due to the limitation of available free codes, it was not possible to revise the HS (HS2012 and HS2017) including all the species and or product forms [TM(1)] relevant for trade or in need to be monitored.

The revision of the HS is done on a regular basis, with five year intervals. The process leading to an updated HS 2022 has started. FAO is examining the possibility to continue its cooperation with WCO to further improve the coverage and scope of the agriculture, forestry and fishery products in order to better monitor the trade flows. If considered feasible, the proposal will need to be submitted to WCO within the biennium 2016-2017. [TM(2)] CWP is invited to take into account this possibility and provide proposals for possible amendment/addition of fishery species and/or product forms to be included in the HS 2022 to the CWP Secretariat.

3.4.3. Central Product Classification (CPC) - *FAO collaboration with the United Nations Statistics Division (UNSD):*

FAO actively collaborated with UNSD to modify the CPC, to integrate wild and farmed origins in primary fish products as well as to introduce improved biological aggregations in consistent with HS. On 11 August 2015, the new version 2.1 has been released after the approval of the UN Statistical Commission (UNCSC) in March 2013. This new version includes the modifications proposed by FAO to improve the breakdown for fish and fishery products including the separation of primary commodities by wild and farmed origin. FAO data on global production (capture and aquaculture) and trade and production of fisheries commodities will have a link to CPC in the datasets disseminated through FishstatJ in March 2016.

3.5. Aquaculture standard questionnaire

FAO has actively participated the discussion of developing Aquaculture standard questionnaire as a part of the Task Group of Aquaculture Subject Group activities.

4. CWP-FS call on Metadata standards

Following the call on Metadata standards made by the Capture Fisheries sub-group (Namibia March 2015), FAO has developed proposals for consideration by CWP-25.

4.1. SDMX (SEIF2)

The newly proposed project named SEIF2 for presentation at CWP-25 is a logical follow-up to CWP-FS 2015 (Namibia) which builds on the experience of SEIF (SDMX for Eurostat, ICES and FAO); this project comes along with parallel progress and plans for Master Data Management. The proposal is to be tabled and endorsed by the CWP-25.

The objective of the project is to develop global Fishery DSDs standard for catch/capture production and aquaculture production, as well as guidelines and best practices for publications of DSDs on these domains.

The CWP will act as authorizing agency by signing off the global DSDs standard, and guidelines and best practices.

FAO Fisheries wants to participate through the CWP for the development and publication of its domain related metadata like the mentioned DSDs. At the same time FAO Fisheries is aware of its limited capacity in monitoring and controlling the implementation of the published DSDs. In conclusion, the immediate focus for FAO is on publication of DSDs directly relevant to the statistics disseminated by the FAO FI.

Eurostat will focus on the harmonisation of the global DSDs with DSDs currently in use. Clear processes for the management and maintenance of the DSDs need to be put in place and flexible enough to accommodate small ad-hoc modifications.

The project governance must permit individual organisations to use light deviations (including for instance versions with subsets of codelists) of the global DSDs. Such deviations should be reported to the CWP and, if possible and relevant, to be included in the global DSDs at the next update.

Links between the DSDs and validation rules should be considered.

The DSDs are used for both data dissemination and data collection.

CWP is requested to consider this proposal to develop a global DSD standard for Capture and Aquaculture production, through the creation of a group of expert lead by Eurostat.

4.2. Reference Data Management

Reference data (RD) is data that defines the set of permissible values to be used by other data fields. Reference data gains in value when it is widely re-used and widely referenced. Reference Data Management (RDM) consists of the set of operations to manage lists of permissible values and associated textual descriptions; in our case the lists correspond to the dimensions describing our statistical data-sets. Adding a new species classification or a new vessel type is RDM.

Master Data Management (MDM) deals with business data, for example contact-addresses.

Currently FAO is using FIGIS/RTMS to manage RD; FAO is publishing time-series (which contain RD); The CWP handbook is a traditional web publication using HTML and PDF to disseminate RD; the FAO SDMX registry disseminates code-lists using the SDMX format.

The goal of Fishery RDM is to: improve the tools to maintain the reference data (hierarchies); publish all RD as web-page and in electronic format (SDMX, CSV); Start publishing DSD's (Document Structure Description); publish hierarchies as well.

FAO's plan to improve RDM is carried out by the IT Division which is delivering the underpinning IT solution, based on the evaluation and piloting of MDM/RDM software platforms by FAO technical divisions (FAO corporate users only). A pilot project has been conducted with a positive evaluation.

The iMarine platform provides an open platform which enables co-operation and data-sharing among agencies interested with RDM services.

The outcome will enable better systems (data recording -> statistics -> dissemination) as well as facilitate electronic data-exchange. Any new systems can automatically load and update standard RD.

FAO will publish RD (and DSD's) including international classifications used for fishery statistical purpose, for use by FAO's systems (dynamic handbook, factsheets, statistics) as well as for consumption by external users; Upcoming version of Fusion-Registry will support SDMX and CSV; and to publish DSD's for FAO statistical data (including hierarchies for RD)

In order to guide FAO's RD's efforts, CWP will be requested feedback on:

- Status of reference data management in CWP member organizations
- The needs in reference data management
- The type of services CWP members think are necessary
- Any relevant points regarding CWP members policies
- Interest in working on a global DSD for catch/capture production and aquaculture production

4.3. Fishing Vessels standards (Global Record)

The Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels (Global Record) aims to close the global information gap on vessels involved in IUU fishing by increasing transparency, traceability and dissemination of data to a wide range of stakeholders. This requires effective submission of certified information about vessels and vessel-related activities by the official state authorities responsible for it. The Global Record comprises a number of information modules (domains), namely Vessel Details, Historical Details, Authorization Details, Inspection and Surveillance, Port Entry Denials and IUU Lists.

In its work on the Vessel Details information module, which is at the core of this global information system, the Global Record programme has been collaborating with DG MARE of the European Commission on an XML-based UN/CEFACT certified standard for the Vessel domain. Business Rules Specifications (BRS) were drawn up, to standardize the vessel core information module data fields and definitions and form a data model. This was proposed to UN/CEFACT, passed through the harmonization process and has been published as a standard, with related XSD files available, for use in fishing-related international scenarios when exchanging information about the characteristics of fishing vessels, refrigerated transport vessels and supply vessels.

Such a standard could eventually serve as a best practice for any system involved in the exchange of information about such vessels, providing a uniform way to encode and transmit the information, thus increasing clarity and coherence and reducing the amount of work that will be required in the processing of such information. Although the UN/CEFACT standardization process results in well-defined data formats and definitions, a certain level of generalization is inherent, allowing for each party that makes use of the standard to define its own implementing rules which specify whether a field is included in the data model, whether it is compulsory, which reference values it refers to, and so on. Therefore, the main objective of this work was to ensure that the harmonized vessel data set is vast enough to cover national, regional and global needs, whilst providing a way for relevant systems to communicate in an unambiguous manner. UN/CEFACT standards may also be extended and refined over time, according to emerging requirements of any interested stakeholders, ensuring that these standards remain relevant and current.

4.4. Standards for Regional Logbooks (WECAFC)

During the January 2016 WECAFC-FIRMS database workshop held in Barbados, the use/nonuse of logbooks in the region came up for discussion. During an intersession presentation, a live demonstration of Bahamas Fisheries Management Information System (FisMIS) and the newly implemented log book to improve data collection was shown to the group. Similar initiatives in the region (CRFM FAD log Book, OSPESCA regional standards for vessels and logbooks ftp://ftp.fao.org/FI/DOCUMENT/cwp/cwp_25/OSPESCA_25e.pdf) raised the need for creating a common regional logbook format. It was agreed that the CRFM representative and the Jamaica Representative would initiate under the WECAFC-FIRMS Project, in the short to medium term: 1) a review of developed standard logbook formats (in the region) with a view to propose a harmonized standard regional format, 2) a review of other data collection formats used in the region (e.g. abundance surveys, biological process, habitat studies, maps) with a view to propose regional standard concepts, definitions and classifications with agreed standards to exchange data and information and in line with international concepts and standards.

Considering that the WECAFC-FIRMS workshop has recommended: 1) a Review of Standard logbook formats (in the region) with a view to propose a regional format, 2) a review of other data collection formats (e.g. abundance surveys, biological process, habitat studies, maps) with a view to propose regional standard concepts, definitions and classifications.

And further considering the call from CWP for interest on Metadata standards for MCS, and Meta-data standards for science data (e.g. observer system data) [para. 19: in Report of the Intersessional Fishery Subject Group Meeting Namibia 25-27 February 2015]

WECAFC would like to express an interest in being a part of a standards development group, where standards for fisheries data collection and in particular standards for logbook could be investigated and developed. WECAFC in its regional role envisions organizing its contribution as follows:

1. A regional thematic role will ensure that the fields and their definition match the regional needs; what is core, what is optional and peripheral
2. An information management role will liaise between the regional thematic role, the best practices in developing Metadata standards, and the frameworks existing in other regions.

WECAFC further proposes that the representatives on such a standard development group should include interested representatives from CRFM and or OSPESCA and WECAFC as facilitated under the MOU of 27 January 2016 between WECAFC CRFM and OSPESCA.

5. Capacity building

FAO has been active since the 1970s in supporting efforts by national institutions to improve national data collection systems, through the development of projects, training activities, publications and software. Whenever possible, collaboration with Regional Fishery Bodies (RFBs) has been always sought to develop such activities.

5.1 African region

During 2013, “A *pan-African Strategy on the improvement of fisheries and aquaculture data collection, analysis and dissemination*⁶” was developed during a consultative process led by the NEPAD Planning and Coordinating Agency (NPCA) and the FAO, through the NEPAD-FAO Fish Programme (NFFP), and the support of the African Union Inter-African Bureau for Animal Resources (AU-IBAR). The *pan-African Strategy* was adopted in May 2014 by the 2nd Conference of Ministers of Fisheries and Aquaculture in Africa (CAMFA II) and is now a strategic document of the African Union and of its implementing agency (AU-IBAR).

In collaboration with the Regional Fisheries Committee for the Gulf of Guinea (COREP) and the Fishery Committee of the West Central Gulf of Guinea (FCWC), FAO is currently implementing the *pan-African Strategy* in several African countries thanks to two projects funded by FAO’s Technical Cooperation Programme (TCP). Two World Bank’s projects are also following the *pan-African Strategy* guidelines to improve national statistics in Ghana and in Comoros, Madagascar, Mozambique and Tanzania through the South West Indian Ocean Fisheries (SWIOFISH) project.

In the framework of these activities, it has been developed an application for the collection, transmission and storage using mobile phones or small tablets which uses the free Open Data Kit (ODK) software. In addition, an “*International training course in fisheries statistics and data collection*” has been also developed (available in English⁷ and soon also in French) which is currently established as a permanent course in two African institutions (i.e the Legon University in Accra, Ghana, and the Institut Sous-régional de Statistique et d’Economie Appliquée in Yaounde, Cameroon).

5.2. WECAFC region

In the WECAFC region, the TCP/BHA/3501 project provided through the development and implementation of a Fisheries Management Information System in Bahamas support to reinforce national data collection system. The use of international standards such as ASFIS and fisheries commodities classification was promoted during the different training sessions as well as best practices recommended by CWP for data collection (Sample based survey – technical paper 425) and statistics processing.

The WECAFC-FIRMS project supported by DG MARE aimed to lay the foundations of a regional data base in support to priority fishery management plans and test through selected pilots (Flyingfish, Queen Conch, Lobster). Data collection was naturally identified as a key component to be reinforced: the use of standard concepts and definitions, of best practices in data collection

⁶ NEPAD, FAO and AU-IBAR. 2014. A pan-African Strategy on the improvement of fisheries and aquaculture data collection, analysis and dissemination. May 2014, 29 p. Available at: <http://www.au-ibar.org/component/jdownloads/viewdownload/5-gi/1958-gi-20140905-pan-african-fisheries-data-collection-strategy-en>

⁷ de Graaf, G.J., Nunoo, F., Ofori Danson, P., Wiafe, G., Lamptey, E. & Bannerman, P. 2015. *International training course in fisheries statistics and data collection*. FAO Fisheries and Aquaculture Circular No. 1091. Rome, FAO. 134 pp. Downloadable at <http://www.fao.org/3/a-i3639e.pdf>

for small-scales fisheries or industrial fisheries as defined by CWP was promoted to participating countries as a reference to build-up regional standard concepts and definitions. Participation of national and regional stakeholders to CWP activities on metadata was encouraged. A roadmap has been defined for implementation of actual activities to reinforce data collection at national level for consideration by donors.

6. Other

6.1. Global Record of Fishing Vessels

In order to encourage and increase participation and commitment of FAO Members, at this critical moment in time when the Global Record requirements and design are being finalized, the Global Record programme is taking a collaborative approach to establish a sense of ownership among partners. Thus, following the Committee on Fisheries' (COFI's) recommendation, the Global Record has established working groups to guide the implementation of the policy and technical aspects of the strategy.

The Working Group

Initiated at a meeting held in February 2015, the *Global Record Informal Open-Ended Technical and Advisory Working Group* (GRWG) asked representatives of FAO Members and Observers, including NGOs, to offer guidance on the general direction of the Global Record in areas such as its scope and approach, what type of data would be most efficient in fighting IUU fishing and how to build capacity to supply that data. The Terms of Reference of the Working Group are wide-ranging, but also include the provision of advice with regards to the development of standards and mechanisms for data exchange.

Amongst the conclusions of the first meeting of the Working Group, were the following that relate to system development, operational rules and data exchange mechanisms:

- The GRWG recognized that States were responsible for providing information to the Global Record, which is consistent with the recommendation of COFI 31. The GRWG agreed that additional analysis should examine having data channelled through RFMOs, recognizing that that would also require work within the RFMOs to harmonize standards and data exchange mechanisms.
- In the submission of data, the GRWG recognized that it was vital that predefined standards for data and data exchange be set up, limiting their number and reducing flexibility, which requires further work, keeping in mind States with different capabilities and the need for capacity development. The GRWG suggested taking into consideration international standards for exchange of fisheries data.

The full report may be found here: <http://www.fao.org/3/a-i5025e.pdf>

The second meeting of the Global Record Working Group will be held at FAO Headquarters, 21-23 March 2016. All FAO Members and Observers are invited. **We encourage the participation of interested CWP Members in this Working Group, which is taking an active role in the development and implementation of the Global Record, a critical tool in the fight against IUU fishing.** The outputs of the Working Group will serve to guide the Secretariat on the continued development of the Global Record, and will be presented to the thirty-second session of FAO's Committee on Fisheries in July 2016.

The Core Groups

At the recommendation of the Working Group, three Global Record Specialized Core Working Groups were launched in 2015.

- *Data Requirements* (GRCG-DR): focuses on the actual information content of the Global Record, and looks at how to deal with any inconsistencies in information received and data confidentiality issues
- *Data Exchange* (GRCG-DE): defines the file formats and mechanisms for efficient data exchanges, sets operational rules that senders and receivers will need to follow and determines how to ensure that data submission is both simple and effective for participants
- *Third Party Data* (GRCG-TP): identifies external stakeholders that may have information relevant to the Global Record and assesses the potential for linking to or incorporating that information in the Global Record.

At the first meeting of the Core Groups, in September/October 2015, the GRCG-DE discussed the data formats and exchange mechanisms for data providers to submit information to the Global Record and it was concluded that:

- The Global Record will accept data in CSV and XML format (UN/CEFACT XML where applicable), with XML being the preferred option
- Detailed technical specifications must be provided for each of the formats
- Capacity development to facilitate the upgrade to XML needs to be organised
- Both manual and automated transmission mechanisms need to be made available
- Information about the various national systems in place would be collected, in order to understand what support should be offered

Please contact the Global Record team, at FI-Global-Record@fao.org, for a full copy of the report, which is currently in draft status and being finalized for publishing.

The work of the GRCG-DE, like that of the other Core Groups is ongoing, with discussion still necessary to clarify issues such as security of data transmission and procedural rules for data submission. Experts participate in the Core Groups in their own capacity, based on technical expertise, knowledge and experience in the relevant fields. **The Global Record programme welcomes any expression of interest in contributing to the work of these groups.**

6.2. Adoption of VGSSF, and any implications on statistical standards

The FAO Committee on Fisheries endorsed the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) in June 2014. These guidelines represent a global consensus on SSF governance and development and are the result of a long and participatory development process. Grounded in the human rights based approach, they provide a tool for various stakeholders to improve the conditions of the sector. Among the objectives is to enhance public awareness and promote the advancement of knowledge on the culture, role, contribution and potential of SSF. In this context, data and information play a particularly important role. There is in fact a specific chapter (11) dedicated to Information, research and communication included in the SSF Guidelines.

In para 2.4 the SSF Guidelines recognize the great diversity of SSF and that there is no single, agreed definition. They call for such an identification at regional, sub-regional or national level.

In addition, the SSF Guidelines call for the recognition of the importance of monitoring systems that allow to assess progress towards the implementation of the objectives and recommendations of the SSF Guidelines (para 13.4).

In order to start working towards an improved understanding of the SSF sector and to support the monitoring of the implementation of the SSF Guidelines, FAO has added a new section on SSF to the questionnaire on the implementation of the Code of Conduct for Responsible Fisheries and its related instrument which is submitted every two years to COFI members, regional organizations and observers.

There is potential for partners to support these efforts, including for example through CWP. While recognizing that it will not be possible to agree on a global definition of small-scale fisheries, CWP could be instrumental to the development of standards or guidelines for statistical purposes, for example the identification and publication under the CWP-handbook of guidelines applicable for the estimation of indicators relevant to SSF, the identification of common elements that can identify small-scale fisheries (e.g. boat size, number of crew, vessel ownership, duration of fishing trips) in regional, sub-regional and national contexts, and which could support the development of a standard for SSF statistics, etc.

6.3. SWIO Data Workshop

A consultative meeting was held in September 2015 among regional investors and stakeholders to elaborate a regional strategy for cost-efficient and sustainable investments in fisheries data collection, sharing and utilization, for the South Western Indian Ocean. Such Strategy was discussed to be in line with the main principles defined in the broader Pan African Strategy on improvement of fisheries data collection, while extending it with a focus on data sharing and reutilization. The Workshop was an opportunity to emphasize for the SWIO region what works well (best practices), what doesn't work so well (problems that need being addressed), and where are the needs in terms of regional data strategies and policies. It encompassed issues of high level coordination among sponsors of regional data initiatives and practitioners able to influence regional outputs; and finally, it dealt with basic/general principles, the operational part should be dealt with in separate technical (possibly global) workshop.

The main workshop objective was “developing strategies and best practices for investments in an efficient data supply chain, of global value, building on the Indian Ocean situation used as case study.”

Its scope is limited to the fisheries data supply chain, including the following issues:

- data generation, data exchange (and reuse), use of data for analysis, data publishing;
- among national, regional and global levels;
- data under confidential requirements, as well as public data, including how to maximize valuation of the former into the later;
- related tools and information systems;

Workshops outputs were a list of SWIO data initiatives, positioned in the Data supply Chain and an expert document “Strategies and Best Practices”. The workshop recommended the development of a High Level Data Architecture to enable national and regional stakeholders with relevant decisions when investing in data collection and sharing systems.

6.4 Poster of the FAO Major Fishing Areas map

FAO continuously receives requests for electronic and/or printed versions of the FAO Major Fishing Areas map, in particular in relation to the European Union Regulation 1379/2013. In July 2015 it has been produced a new version of the map, which also includes subareas and statistical divisions for areas 27 and 37, and printed folded or unfolded posters in the A1 size (84.1 x 59.4 cm).

The electronic version is downloadable at <http://www.fao.org/fishery/area/search/en> . Hard copies of the poster the can be requested to Fish-Statistics-Inquiries@fao.org