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 | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

COORDINATING WORKING PARTY ON FISHERY STATISTICS

Intersessional Meetings of Aquaculture and Fisheries Subject Group

Sixth Meeting of the Aquaculture Subject Group (AS) and Twenty-seventh meeting of the Fisheries Subject Group (FS)

Rome, Italy, 15-16 May 2019

FAO activities report to CWP

Author: FAO

1. Global and regional fishery statistics program

FAO global fisheries and aquaculture statistics are available through the online query panel at http://www.fao.org/fishery/topic/16140/en, workspaces in FishStatJ http://www.fao.org/fishery/statistics/software/fishstatj/en and the FAO Yearbook Fishery and Aquaculture Statistics (Yearbook) at http://www.fao.org/fishery/statistics/yearbook/en. The new version of the Yearbook is expected to be disseminated in July 2019. The collection covers statistics on primary production (capture and aquaculture), preserved and process production, trade of fish and fishery products, Food Balance Sheets of fish and fishery products, fleet and employment.

1.1. Production: global, aquaculture, capture (global and regional)

Global FAO statistics on aquaculture and capture production have continued to be updated annually. In March 2019, updated data up to 2017 were released through the online query tool and a workspace in FishStatJ, covering the years 1950-2017. Data are published through a global dataset, which includes aquaculture and capture data, and three separate datasets (aquaculture quantities, aquaculture values and capture fisheries quantities). Number of species items included in the global production database reached 2 341 in the version released in March 2019.

1.1.1. Aquaculture

The annual series of aquaculture production cover the years starting from 1950 for the quantities and from 1984 for the values. Statistics cover production of fish, crustaceans, molluscs and other aquatic invertebrates, animals and plans. The number of species items included in the version released in March 2019 reached 608.

1.1.2. Capture fisheries production: global and regional

The annual series of global capture fisheries production begin in 1950. Data relate to nominal catch of fish, crustaceans and molluscs, the production of other aquatic animals, residues and plants and catches of aquatic mammals, taken for commercial, industrial, recreational and subsistence purposes from inland, brackish and marine waters. 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 2 144 in 2017.

The three regional capture databases for CECAF (Eastern Central Atlantic), RECOFI (Regional Commission for Fisheries - part of Western Indian Ocean), and the Southeast Atlantic fishing area have continued to be updated annually. The latest versions included data up to 2016 and were released through FishstatJ and online query panel in July 2018. The release included as well the database for GFCM (Mediterranean and Black Sea). The updated versions of the four databases up to 2017 are expected to be disseminated around July 2019.

1.2. Fisheries and aquaculture commodities production and trade

This annual database contains statistics on the annual production of fisheries and aquaculture processed and preserved commodities (in quantity) and trade (imports, exports and re-exports) (in quantity and value) from 1976. Data are currently available up to 2016 through the online query panel and FishStatJ. Work is in progress to update these data up to 2017 and the updated database is expected to be disseminated around July 2019. In addition, work is also in progress to improve the historical coverage for years before 1976.

1 3. Food Balance Sheets (FBS) of fish and fishery products

Data on FBS are updated on a regular basis and are published through the FBS section of the Yearbook, in a workspace in FishStatJ and in FAOSTAT. At present 2013 is still the latest year for which data for all countries are updated. However, work is in progress to update them up to 2017. Preliminary data will be disseminated in the Yearbook in July and the complete set of statistics up to 2017 should be disseminated in winter 2019-2020.

1.4. 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 has been distributed on rotation every certain number of years. The latest collection was carried out by FAO in 2017 through a revised version of the ad hoc questionnaire circulated to national authorities. In comparison to the questionnaire sent in 1992-1993, which was focused on the conversion factors from landed to nominal weight, with emphasis on capture fisheries, the 2017 version targeted the collection of conversion factors on a wider range of product forms. Unfortunately, the return rate was not very high, but all data have been included in a database, together with other conversions obtained examining other sources of information. Work is still in progress to collect factors from other different available sources.

At present, the latest publication on Conversion factors is still 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).

1.5. Fleet

The work on fleet has concentrated on improving the quality and coverage of the data. An extensive gap-filling exercise was first undertaken where primary and secondary data sources were searched and follow up requests with countries, particularly for missing years in the time series, were conducted. Although the time series for the data starts in 1970, when the search for novel data sources was exhausted, the focus of the work was conducted on the dataset from 1995-2016 in order to focus more intensively on the more current data. However, work is planned to continue at a later stage for the period 1970-1995. Future work is also anticipated to bring the vessel types used in the questionnaire used to collect fleet data (FF) directly in correspondence with the ISSCFV classification, which is scheduled for endorsement in May 2019 at CWP 26.

Summary tables on the fleet are regularly published in the Yearbook and SOFIA and data up to 2017 will be disseminated in the Yearbook in July 2019. Plans are to publish the entire database in 2019/2020.

1.6. Employment

The work on employment has continued with an effort on improving the quality and coverage of the data. This has also included a collaboration with OECD to streamline the FAO and OECD collection of fisheries and aquaculture employment statistics by using a common FAO-OECD questionnaire(for OECD member countries and other selected countries). This exercise was aimed to reduce the reporting burden on countries through a single questionnaire but also involved the construction of a dataset common with the complete harmonization of their data and processes. The finalization of this dataset harmonization later in 2019 will lend significant improvements to the employment data for aquaculture and fisheries.

Work has been ongoing towards dissemination of the dataset on gendered employment and these data will be highlighted as part of the employment data release. Member countries have been 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.

Summary tables on the employment by fishers and fish farmers are regularly published in the Yearbook and data up to 2017 will be disseminated in the Yearbook in July 2019. Plans are to publish the entire database in 2019/2020.

1.7 HSVAR revision of questionnaire

Since previous reporting, regular work on the High Seas Vessels Authorization Record (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. An exploratory period has been opened for the HSVAR to the potential for updated databases and user interfaces. Along with the new user interface some planning to increase reporting is being explored.

1.8. Global Tuna Atlas and GRSF

1.8.1. The Global Atlas of Tuna and Tuna-like species

As a result of recent H2020 projects, the Global Tuna Atlas (delivered by IRD-FAO-CNR in H2020 BlueBRIDGE project) offers access to one global database of tuna fisheries data - total catch, georeferenced catch and effort, and catch at size. The atlas collates and harmonizes public domain datasets from Tuna Regional Fisheries Management Organizations (t-RFMOs). This database is accessible online through a Web portal. Data managers use open source code (in a « toolbox ») to manage the content (i.e. transform data formats, load standardized data, compute indicators). The database and toolbox also deliver services for metadata management, data sharing in various formats, processing, visualization, and static and interactive reporting. An open policy applies to all components of the toolbox, including data, software, and the services. The management of the data workflows are the result of community discussions and require a governance model to adopt harmonized data formats and processing.

The data collation workflow developed by IRD (FEAMP project 7) generates datasets with three levels of processing: Level 0 dataset (harmonized; with no extrapolation) contains catch and effort data as close as possible to primary data collated from countries and made publicly available by t-RFMOs; Level 1 dataset: uses Level 0 as input and addresses the Harmonization of units of measures for catches; Level 2 dataset: uses Level 1 as input for raising geo-referenced catches and catch at size data or CPUE to the total (nominal) catches.

This Atlas was presented at the FAO Technical workshop on global harmonization of Tuna fisheries statistics (Rome, March 2018) which was organized under the activity of the “task group on reference harmonization for capture fisheries” of the Coordinating Working Parties on fisheries statistics (CWP). The workshop brought together data managers of the five t-RFMOs namely CCSBT, IATTC, ICCAT, IOTC and WCPFC (and SPC) with the aim to harmonize data structures and embedded statistical concepts and codelists.

The BlueBRIDGE project also contributed to a web Map viewer; the OpenFAIRViewer that uses the infrastructure to geo-code records, and display on maps. Also this activity is generic and demonstrated that OGC standards and open source (often R-based) can deliver robust solutions.

The outcome of these initiatives and the CWP Reference Harmonization process provides the foundation for the FIRMS Tuna Atlas, and the expected endorsement by FIRMS SC11 of ownership of the global Tuna Atlas (see FIRMS Meeting document FSC11/2019/6)[1].

1.8.2.Global Record of Stocks and Fisheries (GRSF)

The Global Record of Stocks and Fisheries (GRSF) is a global repository of uniquely identified stocks and fisheries resulting from collation and merging of records across multiple data sources:

- Fisheries and Resource Monitoring System (FIRMS)
- RAM Legacy Stock Assessment Database

[1] http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC11/6e.pdf

- FishSource (program of Sustainable Fisheries Partnership)

The GRFS is a collaborative instrument to collectively support the global monitoring of fish stocks and fisheries status. It can be tailored for use by countries / regional organizations / fishery-related institutions etc. to enable/facilitate the dissemination and monitoring of their information.

Likewise, the Tuna Atlas, the Global Record of Stocks and Fisheries (GRFS) stems from a FAO initiative funded by the European Union Horizon 2020 BlueBRIDGE project (2016-2018).

The GRSF was already presented to CWP in the 2017 at the CWP Inter-sessional Aquaculture and Fishery Subject Groups Meetings (Copenhagen, Denmark 19-22 June 2017), particularly the standard for the unique identification of stocks and fisheries.

As that report reads http://www.fao.org/3/a-i7805e.pdf: the main technical challenge in the setting up of the GRSF is the harmonization of the different existing standards (international, regional and national) from different data sources, with the aim to build unique identifiers for stocks and fisheries.

To address this, the GRSF proposes a global standard for Unique Identifiers of stocks and fisheries, which was developed to distinguish/aggregate stocks and fisheries records extracted from the three source databases. Two type of identifiers were conceived: the Universally Unique Identifier (UUID), a machine-readable code for the unique identification of GRSF records; and the GRSF Semantic Identifier, a human-readable code and label for the GRSF records metadata.

The UUID aims to respond to the required global IT standards: it is made of two URL components, the resolver, and the UUID per se. The Semantic Identifier is made of codes and labels designed to uniquely identify stocks and fisheries through specific information, as components of such types of identifiers.

<Species> + <Assessment Area(s)> are the two key pieces of information needed to identify a stock; for fishery the following information is required: <Species> + <Fishing Area(s)> + <Jurisdiction area(s)> + <Management Entity(ies)> + <Geartype> + <Flag State>.

Unique stocks or fisheries are therefore validated against the above fields. It should be noted that fishery records are identified from the point of view of fishing activity (1 species, 1 gear, 1 flag state). In terms of geographical information, this could raise some issues, in the event of inadequate geospatial codes which are unable to identify the proper assessment/fishing areas as a result of a lack of proper granularity. Each field is based on global standards (e.g. ASFIS, WoRMS, ISSCFG, ISO3 country), but “local” standards can be adopted if they are maintained.

The development of the GRSF application has continued after the end of the BlueBRIDGE project (Feb. 2018).

A pilot release is available through the iMarine e-infrastructure. The FIRMS FSC11 Steering Committee meeting (13-14 May 2019, Rome, FAO headquarters) will examine and take decisions on the expansion of the FIRMS partnership to support a stronger dissemination and monitoring of world fishery resources. This expansion encompasses new IGO members, and new resource partners to support enhanced dissemination capacities for the Global Record of Stocks and Fisheries (GRSF) and the Tuna Atlas.

More details on GRSF are available in FIRMS FSC11 meeting document FSC11/2019/52[3].

1.9. Inter-agency collaboration in statistics reporting - Eurostat/OECD/FAO/GFCM collaboration

Eurostat, ICES, OECD and FAO regularly met taking an opportunity of Eurostat Fisheries Statistics Working Group meetings, and exchanged the views on how the strengthen the collaboration among the organizations, reduce the burden on the countries and keep harmonizing statistics disseminated among three organizations. Confidentiality was recognized of becoming the key issue in recent years. With Eurostat, there is a discussion, to have an overall FAO-Eurostat Memorandum of Understanding between the two organizations with the main goal to reduce the burden to the countries. The overall idea is to start with agriculture statistics first, also taking into consideration the future results of the evaluation exercise being carried out at Eurostat. At present, the sharing of capture fisheries statistics between Eurostat and FAO is active and effective (countries provide data to Eurostat, which then share them to FAO). For aquaculture data, this does not occur mainly due to the increasing number of confidential data, which cannot be shared by Eurostat. In addition, for aquaculture data, there is a problem of different deadlines in data collection (end of August for FAO and end of December for Eurostat). Fleet data are taken by FAO directly from the Eurostat website.

As indicated in the employment section, with OECD, work is in progress to produce one common questionnaire to collect data on employment for the countries of common interest and the possibility to expand the exercise to fleet data is also being examined. Furthermore, OECD has decided to stop collecting data on inland fisheries and aquaculture and source them directly from FAO disseminated databases.

FAO and GFCM met to coordinate programs regarding the exchange of fisheries statistics. A first area of joint interest concern the exchange of Aquaculture, Capture and Fleet statistics with the goal to improve the quality and consistency among the two sources of datasets. Of interest as well, capacity building through the review of existing national data collection systems in both capture fisheries and aquaculture, the development of methodologies regarding aquaculture data collection, including consideration of both ground-based systems and innovating remote sensing technologies, and the characterization of small-scale fisheries through the matrix approach developed by FAO fisheries and aquaculture department.

2. Methodologies and tools

2.1. Socio economic activities

In 2017 the document, ‘Handbook for fisheries socio-economic sample survey – principles and practice’ (http://www.fao.org/3/a-i6970e.pdf) was published. The handbook consists of three parts: an introduction to the theory behind setting up a survey; a comprehensive explanation of the data collection process, including a section on operational steps; and an explanation of how to use indicators to interpret and present the results of a sample survey to stakeholders, and monitor the fishery.

Making use of one of the most straightforward sampling schemes available, the handbook guarantees that, if the methodology is correctly applied, statistically sound and robust fisheries data will be produced. Its simple statistical methodology does not require a great deal of

[2] http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC11/5e.pdf
[3] http://www.fao.org/fi/static-media/MeetingDocuments/FIRMS/FIRMS_FSC11/5e.pdf

resources, allowing adequate resources to be applied to other crucial elements of establishing a robust data collection process, such as selecting the right people; conducting proper training; and developing the capacity of people so as to ensure good data quality Later in 2019 an update version in English, as well translated versions in Arabic, French, Spanish and a field-guide in Farsi, are planned for release.

2.2. Guidelines for small-scale fisheries and aquaculture survey Evaluation of relevant of livelihoods surveys relevant to capture statistics

2013-2016 The "Global Strategy of Improving Agricultural and Rural Statistics[3]" 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. FishStatJ dissemination, and administration console

FishStatJ is a desktop application (Windows and Mac) that is the best option for use by advanced users to access FAO's Fisheries and Aquaculture Statistics. Through it, data can be extracted and aggregated according to different level of details and international standard classifications. It consists of a main application and several workspaces that include the datasets. In March 2019, an **enhanced version of FishStatJ (version 3.05.0)**[4] has been released, which features new improvements including in terms of user friendliness. To guide on this version of FishStatJ, a Getting Started manual is also available.

2.4. Open ARTFISH

OpenARTFISH is based on statistical sampling methodologies for small scale fisheries developed by Stamatopoulos (2002) and de Graaf et al. (2014). The overall approach is

[4] http://www.fao.org/fishery/statistics/software/fishstatj/en

described in the "*International training course in fisheries statistics and data collection*[5] *"* which has been published (in English and in French). It is 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).

The first version of OpenARTFISH[6] was developed in 2011 for artisanal fisheries in Burundi, during the Lake Tanganyika Integrated Regional Development Programme. The main objective is to facilitate the implementation of cost-effective and sustainable routine data collection, storage and analysis of data, using the appropriate statistical procedures. In 2016, FAO made available Open ARTFISH, a software based on an MsAccess database. The software was consolidated with the combined efforts of staff and consultants currently and previously involved in sample based survey for small scale fisheries.

In 2017, FAO published an installation guide for the OpenARTFISH[7] software and for a mobile phone application based on the Open Data Kit (ODK). The application aims to transfer data from remote regions to the centralized database.

A tailored installation of OpenARTFISH linked to the application was carried out in several countries, mainly under a project in the Fishery Committee of the West Central Gulf of Guinea (FCWC) i.e. Benin, Côte d'Ivoire, Ghana, Nigeria, Togo, and in the South Western Indian Ocean (Comoros, Madagascar, United Rep. of Tanzania).

2.5 SSFK

The Scalable Software Framework (SSFK is the current provisional acronym) is a FIAS initiative to create a new platform for simple and easy deployment and rolling-out of National Fisheries Statistics and Management Information System in requesting Member Countries. The deployment of SSFK in countries will support the integration and harmonization of scattered sources of fishery data including censuses, administrative records and sample based statistics survey systems. SSFK also intends to facilitate harmonization in the multiple reporting obligations to international organizations which countries are facing. This activity is financially supported by Japan through the JPN/228 trust fund.

The objective of the platform is to provide technical solutions to manage administrative data (vessel registries, fishers licences), exploitation data (landing, catch, effort), biological and socio-economic data. The platform is a FAO corporate tool and long-term maintenance will be secured to ensure support after the end of implementation projects.

The platform development was initiated in 2017 for Trinidad and Tobago, in the context of new FAO IT corporate policies, which aim at ensuring long-term maintenance to FAO software deployed in the field.

The driving principle remains the same: the system is built on independent components based on standards (UN/CEFACT, Global Vessel Record; standard classifications such as ASFIS) to collect, store, process and disseminate fisheries data (vessel census, landing data, logbook, observer data and more to come with processing plants data, export/import from The Automated System for Customs Data (Asycuda) etc...). A statistical engine based on R offers the capacity to process collected data (simple aggregation or more complex algorithms such

[5] http://www.fao.org/3/a-i3639e/index.html
[6] http://www.fao.org/fishery/statistics/software/open-artfish/en
[7] http://www.fao.org/3/a-i7680e.pdf

as the ARTFISH methodology developed by Constantine Stamatopoulos for sample-based surveys) and to produce reports; and a reporting facility provides lists or reports to the country, including standard reports to RFMOs and FAO.

The system is web based, can be deployed on the Cloud or national servers, and can be interfaced to mobile applications (developed through smartForms). The system itself can be created as a mobile application. It embeds strict data access and sharing policies (access to the system by roles).

The first instance is being deployed for Trinidad and Tobago. Final training is planned for late June 2019, including R training.

Eight countries have expressed interest in similar solutions. Assessment missions are on-going for five of them and work is proceeding to develop and secure the model cost for long term sustainability of the system.

2.6 SmartForms

"SmartForms: Support to data collection programs"; a mobile App to collect and review fishery and observer data. The first round of development of the app is completed and it is going to be released as a FAO App within the context of the mobile data collection initiative. The objective is to release a system for the dynamic collection of fishery observers' data on-board fishing vessels or at landing sites by establishing a robust infrastructure to collect, validate, amend, archive and share data. SmartForms is a platform that combines: A mobile App to collect and review fishery data, a Forms builder for mobile App customization, and a Hub for data management. The Forms are: i) Harmonized - based on CWP and other FAO endorsed standards, ii) Autonomous - every organization securely collects fishery data, iii) Replicable - builds on specialized data elements, and iv) Mobile-first - for field, landing sites and on-deck data collection. An open source version is also expected to serve a community of interest. The deliverables include data input forms suitable for use on a tablet or mobile phone that satisfies the requirements of the regional fisheries organizations and other partner organizations in initiatives on sustainable fisheries management and biodiversity conservation.

Case studies were identified including Caribbean billfish project – monitoring recreational fisheries, observations on Sharks and fragile benthos in South Indian Ocean, observations on VME taxa, port inspections forms, and national fisheries reports.

Waiting for final public release, today the SmartForms app is released in the Google Play Store as close beta for testing purpose (limited to Android system for the time being). It is accessible upon invitation, the use of SmartForms App is envisaged to be projects based, hence with specific funds allocation to access and exploit the forms builder and the data hub.

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; and 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 (February 2018, released in May 2019), the ASFIS list included 12 751 species items. The next release of the ASFIS list is planned for May-June 2019 and the updated list will be made available promptly in the webpage[8] and the users will be informed through an e-mail message.

3.2. ISSCAAP groupings

Details are presented as an agenda point at the CWP 26th intersessional meeting of the aquaculture subject group.

3.3. ISSCFG/gear catalogue illustration

The new International Standard Statistical Classification of Fishing Gear (ISSCFG) was implemented within the FAO/FI reference data repository and all fishing gear fact sheets http://www.fao.org/fishery/geartype/search/en have been updated with the new ISSCFG codes and acronyms. In collaboration with the FAO Fishing Operations and Technology Branch (FIAO), a content review is in progress for all fact sheets as well as for gear images and drawings. The work is expected to be completed by the end of 2019.

3.4. ISSCFV – towards the adoption of the revised classification

The updated version of the ISSCFV classification has been under preparation for endorsement at CWP 26. During the last intersessional period two consultations were conducted. For the first round, in April 2018 a questionnaire was sent to CWP members to collect their feedback on use of the classification, any anticipated impacts of changes as well as any other feedback they wished to share. A second round of feedback was requested in September 2019 through the technical working group of the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels – Open-ended Working Group (Global Record) in order to ensure relevant member states were consulted in addition to the first-round questionnaire distributed to CWP members. Initially, a total of 116 experts from 62 Member States, plus the European Union, were invited to provide their comments and changes to the list. Secondly, in addition to national experts, 33 compliance/data analyst experts from 29 Regional Fisheries Bodies (RFBs) were invited at a later stage to the GRCG-DR to enrich discussions with further comments and changes. The remarks made by members have been considered for the category of fishing vessels and the proposed changes/additions to non-fishing vessels await final CWP endorsement

3.5. Classifications of fishery commodities

3.5.1 ISSCFC

[8] http://www.fao.org/fishery/collection/asfis/en

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 2019 version (to be disseminated in July 2019), it includes 1 735 items, of which 1 306 items representing the effective codes, while 429 are at level of Chapter/Division/Group. This 2019 version includes an improved breakdown of species and product forms due to the changes of the 2017 version of the Harmonized System Classification (HS) of the World Customs Organization (WCO).

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 forms. At the moment of the creation of ISSCFC 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.

3.5.2 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, HS2017, and the previous one, HS 2012, 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**, entered into force on 1 January 2017 for all Contracting Parties to the Harmonized System Convention, included 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 is nearly finalized and FAO did not submit any additional proposal for revision of the codes and worked mainly with WCO to reply to technical questions received

from WCO Secretariat as well as to avoid the deletion of code on fish and fishery products covering an amount of trade lower than the set threshold (USD 50 million for sub-headings)

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

In past years 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. The 2013 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. During more recent years, collaboration with UNSD on CPC was mainly linked to reply to technical questions received from UNSD on fish and fishery products. FAO data on global production (capture and aquaculture) and trade and production of fisheries commodities have now a link to CPC in the datasets disseminated through FishStatJ since March 2016.

3.6. List of farming systems

Details are presented as an agenda point at the CWP 26th intersessional meeting of the aquaculture subject group.

4. Proposals and Revision of the CWP website and CWP Handbook

4.1.1 Updates and new section in the revised CWP website

A new set of draft pages (password protected) for sharing protocols/practices has been developed and made available for participants of the CWP 26. The proposal includes subsections on:

- Reference harmonization
- CWP catalogue
- GIS recommended standards
- Data exchange formats

Regarding the CWP website as a whole, its content has been updated by the CWP Secretariat during the intersessional period. However more effort is needed by the CWP community to ensure more frequent updates of the ‘Highlights’ and ‘Did you know’ sections of the homepage in all languages.
The Secretariat will present at CWP-26 a proposal for further evolution of the CWP website.

4.1.2 CWP Handbook updates

Following the proposal for a new CWP Handbook user interface (CWP-IFS meeting, Namibia, Feb. 2015), the new CWP website and Handbook were implemented and published in 2017. The new website was presented at CWP Fifth Intersessional Aquaculture and Fishery Subject Groups Meetings (Denmark, 19 - 22 June 2017) where participants had the opportunity to provide their feedback.

Based on group agreements and actions required, the following additional developments for the CWP handbook were implemented and published:

1. A “general search” shortcut is available from the CWP website home page pointing users to the CWP handbook Search page. Categories shortcuts are also available, opening the search page with pre-selected options.
2. Concepts category list of results is now available in alphabetical order.
3. Results are now associated with hashtags indicating keyword(s) selected with improved colouring code to distinguish categories from tags
4. A notification banner has been maintained to mark contents to be further developed.

Among future developments for the CWP web interface, here it is recalled the following:

1. PDF print facility for the full Handbook
2. Improve tags searching and content browsing mechanism
3. CWP Tag cloud
4. Agrovoc terms indexing

4.2 Revision of the CWP handbook and new section on Logbook

During the last CWP intersessional meeting held in Copenhagen in June 2017, the CWP group was informed about the Western Central Atlantic Fisheries Commission (WECAFC) modular approach to develop Logbooks (presentation available at CWP-IS/2017/Pr.3). The group agreed to consider developing a global standard-based and modular approach to building logbooks. At the same meeting, discussions concerning the on-going draft of a CWP Reference Harmonization standard also stressed the need for CWP to address the Logbook domain. The CWP Secretariat led the development of global guidelines for logbooks. The work was formulated as a proposal of a section on logbooks to be included in the CWP handbook.

This work provided also an opportunity for a careful review of other CWP handbook sections relevant to Logbook, and as a result the CWP secretariat revised the CWP handbook to improve the language (document’s readability), enhance consistency and update the terminology and definitions where necessary. The proposed changes apply to three sections of the CWP Handbook: Introduction; General concepts; Capture fisheries statistics. The proposal on global guidelines for logbooks addresses the needs for data types and definitions for logbook implementation at national and regional levels.

The document containing the draft of additions and amendments was sent for a remote review by the CWP community on 18th February 2019. The feedback incorporated and the comments of support received from CWP parties will be presented at the CWP 26th session.

4. CWP-FS call on standards for data and metadata exchange

Following the call on Metadata standards made by the Capture Fisheries sub-group (Namibia March 2015), FAO has developed proposals for consideration by CWP-26.

4.1. Task group on GIS

The CWP 25 plenary meeting held in FAO headquarters (Rome, 2016), adopted the intersessional work plan for the Fishery Subject Group (FS-Group). Amongst the tasks in this work plan, the further refinement of the GIS section was one of the first priority tasks concurring to the broader goal of develop and publish the CWP handbook. The development of the GIS section should build on the Concept Note presented and agreed during the FS-Group and that has been jointly reviewed by the CWP Members. For this purpose, a technical working group on GIS was created, which terms of references are primarily based on the content and recommendations circulated as concept note at the last CWP 25 Plenary session (part of the CWP 25 meeting report), with the objective to expand and develop a GIS Section of the CWP Handbook. The working group terms of reference were split into three activities including:

- Activity 1: Spatial gridded systems for fishery data reporting
- Activity 2: Strengthening promotion and implementation of geographic information standards and best practices
- Activity 3: Establish a list of GIS reference datasets and layers relevant for fishery and aquaculture data

A tentative structuring of the GIS Section of the CWP Handbook was drafted and presented at the CWP Fifth Intersessional meeting (Copenhagen, 2017) under the item *Further elaboration of GIS data and geospatial presentation section of the handbook.* Discussions were oriented on the distinction to be done between:

1. References to *classifications and metadata standards* (GIS working group activities 1 and 2), for insertion into the CWP handbook, concluding need for further discussions on how to refer to GIS metadata standards for data exchange (ISO, OGC),
2. References to *GIS catalogues* (GIS working group activity 3), not be included in the CWP handbook but rather be available from a dedicated 'best practices' area of the CWP webpage.

Further discussions occurred at the CWP Tuna Workshop on Global Harmonization of Tuna fisheries Statistics (Rome, 2018) with active participation of eight CWP members namely CCSBT, FAO, GFCM, IATTC, ICCAT, IOTC, SPC and WCPFC. The group acknowledged the importance and value of this work and didn't express any concern regarding proposed recommendations (Use of ISO/OGC and CWP standards and provide mapping / the CWP grid as a reference given its flexibility for mapping). Recommendations proposed were supported by the group. GIS Resources of interest were made available through the CWP website, such as the list of GIS CWP grid layers, for use by CWP members.

4.2. Ad-hoc task group on reference harmonization

The teleconference kick-off meeting ad-hoc task group took place on March 23rd 2017. Following the terms of reference, an inventory was conducted to collect capture and aquaculture data structures (e.g. reporting forms) and associated reference metadata (e.g. concepts, terminology) used by CWP members.

Proposals of the CWP standard were presented (document and presentation) at the CWP intersessional meeting that was held in Copenhagen, 19-22 June 2017. The meeting's feedback entailed revising terminology and expanding the scope of the data structures

domains to data collection and dissemination and to cover nominal catch, catch and effort, logbook. Remarks and actions to be carried out are summarized in the meeting report[9].

On November 1st 2017, the version 2.0 of this document has been circulated to the TG's members. Comments were provided offline (see annex 2b) by January 19th 2018 and through e-meetings between FAO-CWP members.

From 19th to 22nd of March 2018, FAO organized in Rome a technical workshop on global harmonization of tuna fisheries statistics. Eight CWP parties attended the meeting namely CCSBT, FAO, GFCM, IATTC, ICCAT, IOTC, SPC and WCPFC and contributed to the proposals of the CWP standards with a focus on tuna fisheries statistics. The workshop proposed additional changes on the data structures taking into account the essence of the work's rationale, the terminology used in the second version of the document, and precedent feedback from other CWP members.

CWP parties were informed of the main updates through the version 3.0 of the document (annex 2c) and were requested to provide feedback (annex 2 d).

The version 4.0 compiled feedback and comments from the TG's members and was sent to parties on 7th March 2019. The consolidated data structures (version 5.0) of the CWP standard for reference harmonization, namely Capture, Catch (or Nominal Catch), catch and effort, and logbook, are submitted to the CWP 26th Session for endorsement. The data structure on aquaculture production require further developments of classifications (e.g. Classification of farming type or environment types).

4.3. Collaboration with the Flanders Marine Institute (VLIZ) on the Marine Regions database

FAO continues its collaboration with VLIZ regarding implementation of CWP standard coding systems for Country and Territories in the Marine Regions database, which disseminates maritime boundaries and marine areas and locations.

4.4. Data Collection Reference Framework and Guidelines for Regional Logbooks (WECAFC), main activities of the statistical WG including data policy and sharing

In 2016, a regional data workshop was organized under the WECAFC-FIRMS project phase 1, funded by DG MARE. Main recommendations were 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.

Three documents were prepared as a follow-up of this workshop:

- Data Collection Reference Framework, aiming to define minimum data requirements in support to fisheries management and stock assessment: 6 tasks were defined for main groups of data or statistics
- Regional Data Access and Sharing Policies, aiming to define policies in the process of sharing and exchanging data in the WECAFC region, depending on the type of data.

[9] CWP intersessional meeting report http://www.fao.org/3/a-i7805e.pdf

- Regional Logbook guidelines, aiming to develop a modular approach to logbook creation and implementation for WECAFC members in the need for logbook implementation

During WECAFC 16 in Guadeloupe, May 2016, the WECAFC joint Fisheries Data and Statistics Working Group was established. WECAFC-FIRMS phase 2 project developed and financially supported by DG MARE operationalized the FDS-WG by drafting its ToR and organizing its first meeting in May 2018. As major output, the Meeting generated the first version of the WECAFC Data Collection Reference Framework (DCRF) that was submitted for endorsement to WECAFC 17 in July 2017. The design of the WECAFC DCRF got inspired from the similar GFCM DCRF. Other outputs include Regional Logbook guidelines for a context of small scale fisheries, and a Data Access and Sharing Policy.

The next version of DCRF and logbook guidelines will be handled by the second meeting of FDS-WG planned by the end of 2019 or early 2020.

4.5. Data exchange standards SDMX and UN/FLUX

Based on the project SEIF2 (SDMX for Eurostat, ICES and FAO) that was presented at CWP-25, the Ad-hoc task group on reference harmonization presented in the intersessional meeting in 2017, a proposal of global standard of data structure definition. The proposal was deep-rooted following the SDMX guidelines for building codelists and data structures. Based on the CWP parties feedback, the proposal evolved towards a more conceptual scheme positioned upstream and split from implementation concerns such as SDMX. The implementation of the CWP Reference Harmonization standard is likely to build on existing Metadata standards such as SDMX, FLUX or OGC.

At corporate level through the efforts of its Inter-Departmental Working Group on Statistics, FAO is contemplating the use of SDMX as standard and registry for the purposes of data dissemination, through the FAO corporate statistical standard series. An internal FAO standard series will be established on the metadata of statistical products (e.g. codelists, data sets) to be disseminated in various platforms.

FAO is a member of the SDMX-SDGs group[10] under the Inter-agency and Expert Group on Sustainable Development Goal Indicators. The group aims to develop, pilot, and establish data exchange mechanisms for SDGs data (including specific code lists, and structures for SDGs)[11].

FAO/FI is also contemplating the UN/FLUX (Fisheries Language for Universal Exchange) as another potential standard for the exchange of fisheries [aggregated] data. FAO was invited by the UNECE and participated at the first meeting of the UN/CEFACT Team of Specialists on Sustainable Fisheries, which is tasked to promote, develop and implement the FLUX standard. The team will present the work progress in the CWP 26th session.

4.6. Master Data Management

Master Data Management (MDM) enables the organization to maintain master data as an authoritative source. An MDM architecture consists of: setup reference data flow throughout

[10] https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-07/3.%20Update%20SDMX%20Working%20Group.pdf
[11] https://unstats.un.org/sdgs/files/Working-Group-ToR--SDMX.pdf

data imputation, curation, management to dissemination. The later step will allow the exchange of reference data with CWP members or national institutions through MDM tools, catalogues, registries, and websites. MDM tools allow third party owned reference data (e.g. regional, national classifications) to be made interoperable and stored in other infrastructures.

FAO deployed an MDM solution (EBX5) that offers the capability of maintaining a central repository of master data within FAO (including standard terms, concepts and classifications authorized by CWP). It coordinates, curates and manages the lifecycle of master data. It provides a single source of truth of CWP and FAO maintained classifications and code-lists to be used by countries and RFBs for data exchange and reporting. Final steps are being undertaken with the support of FAO's IT Division for the release in production of EBX5. The publication capacity for master data is currently being finalized.

The MDM will facilitate the dissemination and interoperability of the international standard classifications and the electronic data-exchange in a CWP catalogue, where any system can automatically load and use the classifications. With support of the BlueBRIDGE project, FAO developed a concept project of CWP catalogue[12] to operationalize the outputs of the ad-hoc task group on reference harmonization. The catalogue is conceived to expose through web services (in the CWP website) CWP standards and reference data used by CWP parties.

In order to guide FAO's efforts in further developing the CWP catalogue and repository through case studies, CWP will be requested feedback on:

- The type of services CWP members think are necessary
- Governance of the CWP catalogue management
- Any relevant points regarding CWP members policies

4.7. 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

[12] The CWP Catalogue is under testing and not open to public. Access requires authorization request. https://bluebridge.d4science.org/web/cwp_secretariat/home?p_p_state=maximized&p_p_mode=view&saveLastPath=false&_58_struts_action=%2Flogin%2Flogin&p_p_id=58&p_p_lifecycle=0&_58_redirect=%2Fgroup%2Fcwp_secretariat%2Fcwp_secretariat

when exchanging information about the characteristics of fishing vessels, refrigerated transport vessels and supply 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 FAO's Committee on Fisheries recommendation, the Global Record has established working groups to guide the implementation of the policy and technical aspects of the strategy.

The second meeting of the Global Record Working Group was held at FAO Headquarters, 21-23 March 2016. All FAO Members and Observers were invited. The outputs of the Working Group will served to guide the Secretariat on the continued development of the Global Record, and was presented at the 32nd session of FAO's Committee on Fisheries (COFI32) in July 2016.

The COFI32 expressed strong support for the Global Record and its continued development, and recognised its importance as a tool to combat IUU fishing, including through its supporting role in the implementation of the Agreement on Port State Measures (PSMA) and other complementary international instruments.

On 21 April 2017, the first working version of the Global Record Information System was launched and made available to all FAO Members to submit their information and access the records submitted on the system, with restricted access for this initial phase. On 9 July 2018, the Global Record Information System was launched to the general public. The public launch was commended by COFI33 and it reaffirmed the importance of its role in the fight against IUU fishing, such as through supporting the implementation of the PSMA and other international instruments, and national and regional initiatives, and further encouraged Members to submit information to the Global Record and provide regular updates. The Committee recommended that the Global Record Information System be further developed, in particular to allow for automatic uploading of information.

The fifth Meeting of the Global Record Informal Open-Ended Technical and Advisory Working Group will be held in Seoul, 13-14 May 2019. Among the points to be considered by the Working Group:

- Consider adopting the amended 2016 ISSCFG (gear type) as a reference list for use within the Global Record Information system;
- Review the amended ISSCFV (vessel type) list currently being proposed for adoption at the 27th session of the CWP;
- Consider whether to adopt the UN/LOCODE as the reference code list for ports within the Global Record Information System.

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. During the 2016-2019 period and through various projects, 26 countries and 5 RFBs have received capacity building support

from FAO the majority of which on methodologies for data collection in small scale marine fisheries and supporting information system. Some capacity building was also initiated on Aquaculture Statistical data collection during a workshop held in collaboration with Lake Victoria Fisheries Organization (LVFO) in November 2018.

5.1. Capture fisheries - WECAFC region

The Bahamas project was closed in December 2016 with the delivery of FiSMIS, a national integrated fishery statistics and management information system.

After the closure of the WECAFC-FIRMS phase 1 project, financial support for phase 2 was secured with EU/DG-MARE funding. It targeted the operationalization of the Fisheries Data and Statistics Working Group, created during WECAFC 16. The first meeting of the FDS-WG was organized in May 2018. The meeting generated as major output the first version of the WECAFC Data Collection Reference Framework (DCRF) which will be submitted for endorsement to WECAFC 17 in July 2017. The design of the WECAFC DCRF got inspired from the similar GFCM DCRF. Other outputs include Regional Logbook guidelines for a context of small scale fisheries, and a Data Access and Sharing Policy. The third project phase has been secured with DG MARE, it will start in June 2019 and will support the second meeting of the FDS-WG and will support one or two countries in the reinforcement of their capacity to produce fisheries statistics. It will also aim at operationalizing the Regional Database.

A first instance of the SSFK platform (see paragraph 2.5) developed under the Japanese trust fund JPN/228 is being piloted for deployment in Trinidad and Tobago, final implementation is planned for June 2019.

The Billfish Caribbean Project supported Grenada to improve their reporting to ICCAT with technical support from improved reporting (using SmartForms).

Several assessment missions have been conducted under the WECAFC-FIRMS phase 1 project, the Climate Change project and the CLME+ project to evaluate the needs for support to reinforce national capacities for statistics production and reporting. St Lucia, St Kitts and Nevis, Suriname, Guyana, Grenada and Panama have been assessed and follow-up activities will start mid-2019

5.2. Capture fisheries - CECAF region

Under the general "*pan-African Strategy on the improvement of fisheries and aquaculture data collection, analysis and dissemination*[6]", few projects funded by FAO's Technical Cooperation Programme (TCP) were held between mid-2015 and end 2018 including 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), with focus on statistical data collection for small scale fisheries. As a result, several countries (Gabon, Equatorial Guinea, Nigeria -Lagos Province as pilot-, Togo, Benin, Ghana, Côte d'Ivoire, and Liberia are producing statistics following the OpenARTFISH methodology, which now implements collection, transmission and storage using mobile phones or small tablets based on the free Open Data Kit (ODK) software. Thanks to these efforts, the FCWC has set-up a Regional database now completed with 2016 and 2017 data.

The EU funded PESCAO project, which was kicked-off in April 2019 for 3 years, is aiming at improved regional governance for the generation and sharing of data and information, across

national, sub-regional, regional and global levels. Specific activities will aim at strengthening data harmonization capacities.

5.3. Capture fisheries - Indian Ocean region

In the SWIOFC under the South West Indian Ocean Fisheries (SWIOFISH) World Bank funding, capacity building projects are on-going to improve national statistics following the *pan-African Strategy* guidelines to improve national statistics in Comoros, Madagascar, Mozambique and Tanzania.

Three FAO TCPs are likewise supporting strengthening of fishery statistics in Myanmar, Djibouti and Eritrea.

5.4. Capture fisheries - Socio-economic field activities

Following the methodology described in in the document, 'Handbook for fisheries socio-economic sample survey – principles and practice' (http://www.fao.org/3/a-i6970e.pdf) field implementation has been on-going in several countries. In Oman a project establishing a socio-economic data collection programme will be successfully concluded in July 2019. Further work is on-going in Iran and Eritrea with a new project in the initiation phase in Costa Rica. Smaller, project-based data collection efforts have been conducted in Samoa and the Marshall Islands. This work has been led by FIAS and is in complement to work being conducted throughout the Mediterranean using our methodology and questionnaire as led by GFCM.

5.5. Aquaculture - field activities in Africa

A capacity building workshop on aquaculture statistical data collection was held in collaboration with Lake Victoria Fisheries Organization (LVFO) in November 2018. An African Development Bank funded project is being kicked-off in May 2019 to strengthen the aquaculture statistical data collection system in Zambia.

5.6. Compilation of capacity building material

One of my main roles in FAO FIAS is to support the formulation and management of capacity building field projects in fisheries and aquaculture statistics and information matters. For this reason, in 2018 a collation of FIAS capacity building materials developed by all the FIAS staff and consultants for the various training/workshops organized during the last years started. Any kind of material is being collated, from power point presentations, excel sheets, surveys, evaluation forms, including case studies, handouts, multimedia tools as videos, photos, radio posts, through to the links to relevant manuals, guidelines and booklets. The objective is to get an overview of FIAS existing capacity building material and the scope of the capacity building conducted until now. With the aim to position FIAS capacity building activities in a logical framework to move towards developing categories of standardized training programs, which will facilitate and enhance the implementation of the capacity building projects.

[1] http://www.fao.org/3/a-i3639e/index.html

6. Methodologies and tools – organized according to their contributions to SDGs

6.1 SDG 14.4.1

6.1.1. Global monitoring and reporting strategy, e-learning

SDG14.4.1 ‘Proportion of fish stocks within biological levels’ is a Tier I indicator currently based on FAO’s SOFIA stock status indicator which covers a time series starting in the 1970s and relies on regional estimates. SDG14.4.1 requires countries to report on their national indicator and FAO, as custodian agency for the indicator, to provide a framework for consistent and comparable national reporting as well as to estimate regional and global indicators. An e-learning course aimed at providing guidelines to stakeholders for the reporting of SDG14.4.1 is in development and expected to be published during summer 2019. The course addresses various audience and explains the practical significance of the indicator, reviews the existing assessment methodologies, teaches new methods applicable in data limited context, and explains how to calculate the indicator and meet the reporting requirements. The driving principles to the guidelines include transparency, consistency, communication and collaboration with RFBs, and timeliness and adherence to international standards in their data and statistical production. Reporting will occur through a specific questionnaire, and monitoring will benefit from the issuing of unique identifiers for stocks through FIRMS/GRSF, which are built upon CWP standards.

SDG14.4.1 is an opportunity for FAO to improve the granularity of reference stocks upon which the SOFIA regional and global indicator is based.

6.1.2 AIS publication

FAO is coordinating since early 2018 a work with partners Global Fishing Watch, AZTI and Seychelles Fishing Authority to write an Atlas Publication describing the potential, status and limitations regarding use of Automatic Identification System (AIS) data to track fishing vessels’ activity and footprint. AIS offers the ability to create a global, high-resolution map of fishing footprint. The ‘Atlas of AIS-based fishing footprint and effort’ will take advantage of this unique dataset to create a more detailed understanding of fishing footprint, fill in gaps in knowledge, and validate existing datasets. The Atlas describes the strengths and limitations of using AIS-based fishing activity as metric of fishing footprint or even effort in each FAO region. A regional section is dedicated to a review in each FAO Area focusing on the apparent strengths and limitations of AIS data in different contexts. Two case studies (Seychelles tuna fleet in the Indian Ocean and the Spanish fleet in the Bay of Biscay) compare fishing effort calculated through AIS algorithms with those of VMS and logbooks, which provide advice over how to interpret AIS-derived fishing activity and describe how far AIS can be used for estimates of fishing effort. The publication will be released during fall 2019.

At this stage, it can be said that AIS shows good potential for supporting the separation of fishing activity by fleet between High Seas and EEZs for the industrial fleet segment (i.e. the segment mostly concerned by this issue), and from there infer estimates for the separation of catches between EEZs and High Seas. AIS is still poorly used in the developing world and hardly used by small scale vessels. In certain context, AIS might contribute good support to improve analysis of certain fish stocks.

6.2 SDG 14.6.1

This indicator is dedicated to monitor the Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated (IUU) fishing.

A framework of international instruments have been developed addressing different aspects of fisheries management which together provide a powerful suite of tools to combat IUU fishing. The FAO Agreement on Port State Measures, the first international binding Agreement developed expressly to combat IUU fishing, since its coming into force in June 2016, currently has 58 Member Parties, including the EU representing its 28 Member States.

The indicator is based upon responses by States to a certain sections of the questionnaire for monitoring the implementation of the Code of Conduct for Responsible Fisheries and related instruments (CCRF).

Most countries have taken measures to combat IUU fishing, however over 30 percent of countries still show very low to medium level of implementation of these instruments.

6.3. SDG indicator 14.b.1 – SSF activities, and data / standards implications

6.3.1 Status of SDG indicator 14.b.1

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.

The SDG Indicator 14.b.1 measures policy progress of SSFs towards access to resources and markets. The indicator is built on the responses from countries, regional organizations and observers to a dedicated section of the Questionnaire of the Code of Conduct for Responsible Fisheries, which is collected on a biennial basis by FAO. The Indicator has been upgraded as a Tier II indicator. It is expected to provide an improved understanding of the SSF sector and to support the monitoring of the implementation of the SSF Guidelines. An e-learning course on the Indicator has been developed in 6 languages and can be accessed from the SDG14.b.1 webpage.

6.3.2 Towards statistical definition of SSF

Among the objectives of SSF guidelines 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). Complementary to the policy oriented SDG Indicator 14.b.1, better statistical monitoring of SSFs will contribute to such objective.

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 that relies on simple cut-off definition, 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.

6.4 SDG indicator 14.7.1

6.4.1 Upgrade to tier I

In March 2019, the SDG indicator 14.7.1 "Sustainable fisheries as a percentage of GDP in Small Island Developing States, least developed countries and all countries" has been reclassified[13] and upgraded to Tier1 at the he ninth meeting of the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs). This indicator expresses the value added of sustainable marine capture fisheries as a proportion of GDP. Efforts of FAO and CWP Parties to collect the monetary value of Capture fisheries, starting with publishing this socio-economic dimension as a global standard in the CWP handbook, will contribute to enhance national GDP estimates. The sustainability is evaluated based on the FAO monitoring of stocks and estimates will be enhanced with the implementation of national level SDG indicator 14.4.1, which tracks progress towards more fish stocks within biologically sustainable levels at national, regional (across FAO Major Fishing Areas) and global level.

6.4.2 Value of capture production

In 2019 FAO is planning to carry out an ad-hoc collection of the value data on capture fisheries, which are currently not collected by FAO, to evaluate the typology and quality of the available data at country level. The results will provide a basis to decide on the approach to be followed to regularly collect this kind of data. Suggestions from CWP members on the best approach to be followed is encouraged. For example on how to structure the level of collection for species (by each single species vs major groups of species), typology of price (ex-vessel, at landing site, wholesale, prices).

[13] https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-09/7b.%2014.7.1%20FAO.pdf