



منظمة الأغذية
والزراعة
للأمم المتحدة

联合国
粮食及
农业组织

Food
and
Agriculture
Organization
of
the
United
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Organisation
des
Nations
Unies
pour
l'alimentation
et
l'agriculture

Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

COORDINATING WORKING PARTY ON FISHERY STATISTICS

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Overview

As a part of FAO reform process, the former “Fishery Information, Data and Statistics Unit” of FAO Fisheries Department has changed into “Fisheries and Aquaculture Information and Statistics Service (FIES)” under Fisheries and Aquaculture Economics and Policy Division of FAO Fisheries and Aquaculture Department starting from 1 January, 2007. Accordingly, e-mail addresses for statistics provision and external statistical and information inquiries were changed to FIES-e-Forms@fao.org and FIES-Inquiries@fao.org, respectively.

FIES has maintained the following global statistics based on international classifications and standardized data submission procedures:

- Capture fishery production volume
- Aquaculture production (volume and value)
- Production and trade of fishery commodities
- Fishing fleet (data only available up to 1998)
- Number of fishers, and
- Supply/Utilization Accounts

In addition, FIES compiles and disseminates capture production statistics by subareas/divisions on behalf of three regional organizations: CECAF (Eastern Central Atlantic), GFCM (Mediterranean and Black Sea), RECOFI (part of Western Indian Ocean); and for the Southeast Atlantic fishing area. It also maintains and updates High Seas Vessels Authorization Record (HSVAR) following the requirement by the Compliance Agreement.

Data are usually obtained from national reporting offices and, wherever possible, verified from other sources. Estimates are produced when data are lacking or are considered unreliable. The statistics are stored in databases and disseminated through publications, electronic media, and the FAO Internet site. Those outputs are widely used internally and externally for global analyses and policy and trend studies. External statistical and information inquiries (an average in-flow of 4-5 per day) are handled through a specific e-mail account - FIES-Inquiries@fao.org - on a daily basis.

Support to capacity-building for fishery statistics is mainly provided through FishCode-STF Programme which was launched in November 2004 under the FishCode.

Major activities and improvement in the individual statistics in 2005 and 2006 includes:

- Establishment of capture database in RECOFI region
- Inclusion of culture method into aquaculture statistics
- Development of Strategy for Improving Status and Trends Reporting for Aquaculture
- Revision of conversion factors from product weight to various nutritions by species/product forms toward improving quality of SUAs and FBSs estimates
- Release of FishStat Plus version 2.32 with more flexible and user friendly administration module

Details on individual activities are given in the following sections.

Capture productions including regional database:

The FAO global database on capture fisheries production (closed mid-February 2007) has been updated annually with 2003, 2004 and 2005 data. Number of species items included in the database has grown from 1,347 in 2002 to 1,581 in 2005 (+ 17.4%).

Elasmobranch statistics

Elasmobranch is one of the species groups in which the number of species items included in the FAO database has increased more in recent years thanks to initiatives taken by FAO and other CWP members to raising awareness of the importance of detailed shark statistics. See below in Tables 1 and 2 updated versions of information on shark data in the FAO capture database as presented at the FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks (Rome, Italy, 6-8 December 2005; FAO Fisheries Report no. 795).

Table 1. Breakdowns of FAO capture statistics for the “Sharks, rays, chimaeras” species group

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Species items | 37 | 46 | 55 | 59 | 75 | 73 | 82 | 106 | 113 | 115 |
| Countries | 108 | 107 | 107 | 113 | 114 | 119 | 123 | 124 | 123 | 127 |
| Fishing areas | 17 | 17 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Total number of data series | 341 | 361 | 398 | 425 | 477 | 500 | 539 | 593 | 673 | 686 |
| Percentage of catches at the genus/species level | 18.3% | 18.6% | 19.7% | 19.8% | 23.1% | 22.5% | 23.9% | 23.7% | 25.2% | 24.4% |

Note: only items with at least 1 tonne have been considered; data for years prior to 2003 do not include subsequent revisions.

The number of elasmobranch species items for which catch statistics are available in the FAO capture database has more than tripled in ten years and their share on total species items doubled during period examined (see Table 2).

Table 2. Percentage of “Sharks, rays, chimaeras” on total species items in the FAO database

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| “Sharks, rays, chimaeras” species items | 37 | 46 | 55 | 59 | 75 | 73 | 82 | 106 | 113 | 115 |
| Total species items | 1,035 | 1,073 | 1,142 | 1,205 | 1,255 | 1,291 | 1,347 | 1,445 | 1,538 | 1,581 |
| Percentage of “Sharks, rays, chimaeras” on total | 3.6% | 4.3% | 4.8% | 4.9% | 6.0% | 5.7% | 6.1% | 7.3% | 7.3% | 7.3% |

In 2005, the FAO Species Identification and Data Programme (SIDP) released the “Field Identification Guide to the Sharks and Rays of the Mediterranean and Black Sea” by F. Serena. At its web site (<http://www.fao.org/fi/SIDP>), the SIDP in collaboration with FIGIS has also made available 111 fact sheets of Elasmobranch species.

Regional capture databases compiled by FAO

In 2005, a new regional capture database was added to those already compiled and disseminated by FAO-FIES (i.e. CECAF, GFCM and Southeast Atlantic).

The Third Session of the Regional Commission for Fisheries (RECOFI) held in Doha, Qatar, 9-11 May 2005, agreed on the format and structure of the database as proposed by FAO-FIES. At present, the database includes data for the eight states in the RECOFI region (i.e. Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates) by two statistical divisions (i.e. 51.2.0-Gulf and 51.3.1-Oman Sea) for the 1986-2004 period (an updated version including 2005 data will be available in April 2007).

The Southeast Atlantic database includes data for the "47 - Southeast Atlantic" fishing area in the 1975-2004 period. Data for 1975-1987 are generally those of the International Commission for the Southeast Atlantic Fisheries (ICSEAF, which ceased in 1990). Work on this database resumed around 2000 as it was considered that historical catch data series by divisions may have been useful to the SEAFO Commission that was agreed in 2001 and entered into force in 2003.

Area 47 data maintained by FIES do not separate capture productions taken inside and outside EEZs, while the SEAFO convention area exclude areas inside EEZs of coastal nations. Also, boundaries of subdivisions adopt by FAO and SEAFO are not consistent. FIES is seeking advise from SEAFO as well as from other CWP members on the utility of the Area 47 database and possible harmonization of data collection and reporting system, especially to prevent duplication of tasks data and reduce the burden on national reporting offices.

Evaluation and comparison with data of other CWP Members (Agenda 7)

Before finalizing FAO data for dissemination, FIES examined all data reported by comparing with supplementary data as well as with those available in the databases of other fishery organizations. This exercise has actually reduced the discrepancies between the FAO and other databases in recent years. For this purpose FIES has maintained good communication and collaboration with other CWP Members and commits to continue the same efforts.

Catch data in the FAO database for the Southern Ocean fishing areas are fully derived from those compiled by CCAMLR, with the only exception of Japanese catches of southern bluefin tuna from Southern Ocean fishing areas reported for the first time in 2005. The International Whaling Commission (IWC) is the provider of the great majority of whale data included in the FAO database, whereas FAO always forwards to IWC data on whales received by national correspondent that may be of interest to IWC.

Tuna catch data maintained by IATTC, ICCAT, IOTC, and WCPFC (compiled by the Oceanic Fisheries Programme of SPC) are used to supplement, evaluate, and adjust to improve a reliability of the tuna catch data received directly by national correspondents. However, recent discrepancy exercises¹ held together by FAO and ICCAT showed that in specific cases also the data gathered by FAO may be useful to complement data collected by a regional organization.

Following the request put forward by NAFO at the CWP Intersessional Meeting (14-15 February 2006), FAO prepared in August 2006 a brief summary of FAO-NAFO discrepancies in the 1994-2003 period, highlighting particular data missing in one of the two datasets but existing in the other one. Data missing

¹ Garibaldi and Kebe, 2005, ICCAT-SCRS/2004/081 and Garibaldi and Kebe, 2006, ICCAT-SCRS/2005/089

in the FAO database have been supplemented with the NAFO data, which was reflected to the statistics disseminated in 2007.

Relationships with CPPS were resumed with the participation of the FAO Fishery Statistician (Capture fisheries) in the latest CPPS meeting on fishery statistics held in September 2006, Lima, Peru. In addition to the discussion about capture fishery statistics, FIES staff explained CWP activities to the CPPS Member countries.

Recommendations from UNGA (Agenda 6)

The UNFSA Review Conference held in May 2006 in New York specifically recommended that FAO. (a) “establish arrangements for the collection and dissemination of data in accordance with Article 7 of Annex I to the Agreement, where none exists” and (b) “revise its global fisheries statistics database to provide information for the stocks to which the Agreement applies, as well as to high seas discrete stocks on the basis of where the catch was taken.”² The 61st Session of UNGA in November 2006³ reiterated the same recommendations in I-15 and 16 as well as in I-8 in a more indicative way.

The current FAO Statistics System was established to monitor the contribution of fisheries and aquaculture to food security and other socio-economic factors, one of FAO’s key roles. As a consequence, the fishery capture statistics do not contain information of sufficient detail required for stock assessment and fishery management purpose. It is not possible for FAO to risk a deterioration of the existing statistics system including the capture database to accommodate the request from UNGA. However, at the same time, FAO is aware that there is an increasing demand for global capture statistics serviceable for stock assessment and monitoring of fisheries.

The 1995 UN Fish Stock Agreement clearly indicates in its ANNEX I Article 7 that the obligation to compile and disseminate data for stock assessment and management is primarily assigned to RFMOs (including subregional arrangements) who are responsible for management of relevant stocks. In fact, CWP has repeatedly confirmed that the RFMOs who conduct stock assessment generally maintain the most reliable and thorough catch and effort data on relevant stocks.

In order to address this need, FAO believes it preferable to establish a global dissemination system that would make it possible to link and disseminate RFMOs’ data in a harmonized way from one place, where the RFMOs maintain the ownership and responsibility of compilation, evaluation, and analyses for disseminated data. Currently, FAO has assembled and disseminated some stock-related information through FIES compilation of STATLANT data, Tuna-Atlas and FIRMS. All of them have the potential to be a basis to provide mechanisms to assemble global information obtained by RFMOs with commitment among FAO and RFMOs and appropriate level of resource allocation.

FAO is seeking support from Members toward establishing such a global dissemination system of RFMOs’ data and purpose to organize a technical workshop to consider possible mechanisms for global data sharing and harmonized dissemination among RFMOs. Revision of the existing guidelines and handbooks for fishery statistics may be needed to incorporate the additional data needs.

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

² A/CONF/.210/2006/15, Annex, Paragraph 25, 26

³ United Nations A/61/L.38 . General Assembly. 27 November 2006. Sixty-first session. Agenda item 71 (a)

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 continuously updated and new records are assigned for newly reported species or according to requests by CWP Members (mostly CCAMLR and SPC). In its last update (March 2006), the ASFIS list included 10,650 species items. The next update is planned at the end of March 2007 and the updated list will be made available promptly at the ASFIS web page (<<http://www.fao.org/fi/statist/fisoft/asfis/asfis.asp>>).

Aquaculture production:

Strategy for Improving Status and Trends Reporting for Aquaculture (Agenda 8)

The Third Session of the COFI Sub-Committee on Aquaculture was held in September 2006 in New Delhi⁴. The Sub-Committee endorsed the proposed Strategy for Improving Status and Trends Reporting for Aquaculture⁵, as developed by a 2004 Expert Consultation at FAO and previously reported to the CWP. Additionally, they concurred with the recommendation of the Expert Consultation that a body, similar in nature to the CWP that would be responsible for issues related to standards for aquaculture data and statistics, should be formed. Further discussion will be required to better determine the nature, participation and responsibilities of such a group. Preliminary discussions have revealed a wide range of opinion concerning the appropriate scope of, and interest in, the proposed group. While the Sub-Committee endorsed these initiatives, no offers for funding were put forward. FAO will continue to seek funding for these activities through various sources.

Census activities

FAO Fisheries has collaborated with the FAO Statistics Division on the World Programme for the Census of Agriculture 2010⁶. The programme includes options and guidance for different levels of inclusion of aquaculture and inland fisheries data collection, depending on the national importance of these sectors and the national priorities and resources. This inclusion can range from a single question to determine the presence of aquaculture in the agriculture holding (as the basis for future surveys), to the conduct of a full “agri-aqua” census where all aquaculture holdings would be enumerated, including those not within agricultural holdings. In September 2006, FAO Fisheries and Aquaculture staff attended the 21st Session of the Asia-Pacific Commission on Agriculture Statistics to facilitate a discussion among members regarding the inclusion of fisheries and aquaculture data collections in their planned national census activities.

Analysis of method of culture

For many years the FAO aquaculture questionnaire has asked for many data elements (method of culture, hatchery production and structural information) that have been sporadically reported by the countries, and have not been regularly analyzed by FAO. Efforts have been made to improve this situation. Starting from 2005 data, the aquaculture production data have been compiled according to the method of culture, based on reported information when this was available; and based on estimations, assumptions and expert knowledge, when the method of culture was not reported. This exercise has revealed the flaws of some of the categories used on the FishStat AQ questionnaire. For example, combined categories such as “ponds and tanks” should be separated into individual components. It is anticipated that preliminary estimates of aquaculture production data according to method of culture will be

⁴ FAO Fisheries Report No. 816, available at: <ftp://ftp.fao.org/docrep/fao/009/a0922t/a0922t00.pdf>

⁵ FAO Fisheries Technical Paper 480, available at: <http://www.fao.org/docrep/008/a0066e/a0066e00.htm>

⁶ FAO Statistical Development Series No. 11, available at: <http://www.fao.org/es/ess/census/wca2010.asp>

available in early 2007 through the FAO Fisheries website. It is hoped that continued progress can be made in this area and that the dissemination of more information on aquaculture will encourage more countries to report these items, thus improving the quality of information available.

Tuna farming

In March 2005, the *ad hoc* GFCM/ICCAT Working Group on Sustainable Bluefin Tuna Farming/Fattening Practices in the Mediterranean concluded its work with the publication of the “Guidelines on Sustainable Bluefin Tuna Farming Practices in the Mediterranean”⁷. While recognizing the inherent reporting difficulties, the Working Group reaffirmed previous recommendations of the CWP that the final harvested weight should be separated according to the original capture fisheries component and the aquaculture component representing the weight gained in captivity. In particular, this is important in attempting to enforce ICCAT-mandated national quotas for the catch of bluefin tuna in the Mediterranean.

Some countries have begun reporting aquaculture statistics according to these standards. In most cases, the proportion attributable to aquaculture has been estimated based on an assumed percentage of growth after capture. This estimated growth has been obtained through direct conversations between data providers and FIES staff. However, there are still some cases where FIES cannot determine exactly what the reported aquaculture tuna production represents. Although the progress is rather slow, an increasing number of FAO member countries have now accepted this concept of separating aquaculture and capture components of production in the case of capture-based aquaculture. It remains essential to better communicate the existing guidelines and conventions regarding the separation between capture fisheries and aquaculture.

More generally, capture-based aquaculture extends to species other than tunas. It may be necessary to develop specific guideline to better cover particular situations of fishing activities such as capture-based aquaculture of eels.

Production and trade of fishery commodities:

The FAO International Standard Statistical Classification of Fishery Commodities classification (ISSCFC) has continued to be regularly revised and expanded in light of changes in patterns of international trade and national classifications. It now contains about 900 items containing data, with an increase of about 100 items during the last two years.

The FAO Yearbook of fishery commodities has also continued to be regularly upgraded with the introduction of table A5 “International exports of fishery commodities by FAO ISSCAAP”. This table shows export data (with quantities converted into live weight equivalent) classified according to the main groups of species used to collect fishery production (capture and aquaculture).

HS-Classification of commodities

A new revision of the classification on the Harmonized Commodity Description and Coding System, commonly referred to as the Harmonized System (HS) is in force since 1 January 2007 (HS, edition 2007). HS is used as a basis for the collection of Customs duties and international trade statistics by more than 190 countries and economies. Over 98% of the merchandise in international trade is classified in terms of the HS. It comprises about 5 000 commodity groups, each identified by a six digit code, of which about 130 cover fish and fishery commodities. This classification has been developed, introduced and maintained by the World Customs Organization (WCO), whose mission is to enhance the effectiveness and efficiency of Customs administrations.

⁷ FAO Fisheries Report No. 779, available at: <http://www.fao.org/docrep/008/y8870e/y8870e00.htm>

Besides the renumbering of a few already existing codes, the main changes for fish and fishery products refer to the introduction of the following new subheadings in HS 2007:

- 0301.94 Bluefin tunas (*Thunnus thynnus*), live;
- 0301.95 Southern bluefin tunas, live (*Thunnus maccoyii*);
- 0302.67 Swordfish (*Xiphias gladius*), fresh or chilled;
- 0302.68 Toothfish (*Dissostichus* spp.), fresh or chilled;
- 0303.61 Swordfish (*Xiphias gladius*), frozen;
- 0303.62 Toothfish (*Dissostichus* spp.), frozen;
- 0304.11 Swordfish (*Xiphias gladius*), fresh or chilled fillets or meat;
- 0304.12 Toothfish (*Dissostichus* spp.), fresh or chilled fillets or meat;
- 0304.21 Swordfish (*Xiphias gladius*), frozen fillets;
- 0304.22 Toothfish (*Dissostichus* spp.), frozen fillets;
- 0304.91 Swordfish (*Xiphias gladius*), frozen meat;
- 0304.92 Toothfish (*Dissostichus* spp.), frozen meat;

Furthermore, code 0509.00 “Natural sponges of animal origin” has been deleted due to low volume of trade. This content has been transferred to code 0511.00. Notwithstanding these amendments, the classification codes for fish and fishery products in the HS still need improvement to enable the monitoring of economic trends and include a wider range of products. Following the instructions of the 25th Session COFI, and of the 9th and 10th Sessions of COFI Sub-Committee on Fish Trade, FAO is working on a proposed revision to be submitted to WCO.

Other classifications - ISIC/CPC/SITC/ISCO

FAO actively participated in the consultation process on the revision of the International Standard Industrial Classification (ISIC rev. 3.1), the Central Product Classification (CPC v. 1.1), the Standard International Trade Classification (SITC rev. 3) and International Standard Classification of Occupations (ISCO 88) related to the agricultural products and activities. Inside FAO, FIES was the responsible unit for the revisions related to the fishery sector.

The revision process for ISIC and CPC classifications, with target date of end 2007, was conducted as a multi-stage process, in which subsequent rounds of discussion focus on general and then more detailed aspects of the revision process. For the ISIC revision, FIES was particularly active to ensure that proposals to place aquaculture directly under the division of Agriculture were not accepted, and to continue to identify aquaculture as a separate activity, not included under fishing. The draft of ISIC rev. 4, related to the fishery sector is the following:

ISIC rev. 4

A. AGRICULTURE, FORESTRY AND FISHING

01 Crop and animal production, hunting and related service activities

(...)

02 Forestry and logging

(...)

03 Fishing and aquaculture

031 Fishing

0311 Marine Fishing

| | |
|-----------------|-----------------------------|
| 032 Aquaculture | 0312 Freshwater Fishing |
| | 0321 Marine aquaculture |
| | 0322 Freshwater aquaculture |

The text of this classification will still undergo an editing process, but no structural changes are expected.

Main work and discussions on CPC was focused on increasing the comparability of the CPC to ISIC (with the desire to link each CPC product to a single ISIC industry) and the HS. As for version 1.1, the CPC structure should not mirror the HS structure. The detail of the CPC goods part will remain based in terms of complete HS headings/code. There may be some exceptions, where more detail is necessary than that which can be provided in the HS. This relates to cases where domestic production is significant, but the products are not internationally traded. Potential areas include agricultural products and waste products. The proposed revision for the CPC v.2 related to fish and fishery products is attached as Appendix 1. The text of the CPC classification will still undergo an editing process, but no structural changes are expected.

The process for the revision of the UN Standard International Trade Classification (SITC, rev. 4) has been completed in 2006. The revision was implemented to have a complete comparability of the basic headings with HS subheadings, taking into account changes introduced in the HS since 1988. Changes were kept to a minimum as SITC is now recommended only for analytical purposes. SITC, Revision 4, retains the overall structure of SITC, Revision 3, and consists of the same number of sections, divisions and groups. The implemented changes were done at the level of basic headings and some subgroups with no modifications for codes of fish and fishery products.

The International Labour Organization (ILO) is in the process of updating the current version of the International Standard Classification of Occupations (ISCO 88) with 2008 as deadline. The ISCO classification has been developed to facilitate international comparisons of occupational statistics and to serve as a model for countries developing or revising their national occupational classifications. At present, the proposed new structure for for the classification of occupations in agriculture, forestry and fisheries in ISCO-08 is in the Appendix 2.

Fishing fleets and HSVAR:

Fleet Statistics

Due to the delay in recruiting the fleet statistician, the compilation, evaluation and dissemination process for fleet statistics has been suspended since the last dissemination of data up to 1998. Data for 1999-2003 was compiled without evaluation nor with an attempt to fill gaps and missing data, which were not comparable with historical data. FIES decided not to publish them. Fleet questionnaires have been sent to member countries as previously but response rate is very 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.

Corresponding to the increasing demands on fleet related information, especially estimates of global and national fishing capacity and their historical trends, FIES initiated an investigation with the help of consultants on a suite of existing fleet-related information and availability and/or restriction of data use with a view to re-establish fleet statistics and data collection system. FAO has also recently reviewed the feasibility to develop a global vessel list, corresponding to the request from the Ministerial Meeting held in Rome, in 2005, and should report to the forthcoming COFI. Once this would be approved, FIES wishes a strong coordination between developing efforts for a global vessel list and those for fleet statistics to establish simplified streamlined data flow in a harmonized way.

HSVAR

Since the CWP-21, Albania, Angola, Belize, Cape Verde, Cook Islands, and New Zealand have joined the Compliance Agreement and 34 countries⁸ and 1 entity (EC) are the member. 14 countries independently and 12 countries through EC have provided authorized vessel data. As at 31 December, 2006, HSVAR database contains total 6,059 vessel records, among which 228 records were removed from the authorized list by reporting States. Those who have provided data during 2005-2006 period, either as new provision or as a update, are Belize, Japan, and New Zealand. In an attempt to improve submission rate, the FAO Circular to encourage provision and revision of information requested under the Agreement was sent to all member States in February 2007.

The major problems of current HSVAR include an access limitation that is only allowed to member States and RFMOs, a coverage of vessels only over 24m in LOA, and lack of staff and budget allocation which has caused low maintenance and lack of evaluation of data. Lloyds/IMO number is quite useful as a unique identifier because of its coherence to the vessel itself and Lloyd's Register data supplied by Fairplay with charge seems to track vessel transaction reasonably well and with acceptable timeliness. Currently, Lloyds/IMO number is not a mandatory information for many of the vessel lists and registration systems, including HSVAR. FIES is now requesting this information systematically and would like to ask for other Members' cooperation.

Global vessel list

In its Declaration, the Ministerial Meeting on Fisheries held in March 2005 called for the development of a comprehensive record within FAO for fishing vessels and support vessels including refrigerated transport vessels and supply vessels, as they are often involved in transshipments from IUU vessels. In response, FAO has prepared a feasibility study, which reviewed existing information systems at national, regional, and global levels and examined legal and practical considerations involved in creating a global record. It confirmed that there is no complete record of the number of fishing vessels in the world and that there is also no complete, single source of information from which it would be possible to trace individual vessels and ownership. Also, there is no single source of information on the particulars of merchant ships, of all sizes, and their ownership.

After thorough analysis of relevant factors, FAO's feasibility study concluded that:

- The development of such a record is technically feasible;
- Flag States and economic entities would have to provide detailed information regarding vessels and their ownership in a complete and accurate manner as requested by FAO to ensure a useful system;
- A unique vessel identifier system would need to be introduced so any vessel could be identified permanently, irrespective of change of vessel name, ownership or flag;
- A phased approach for inclusion in the system would be desirable; and
- The costs of development and maintenance would be significant.

Although the proposed global vessel list has many duplications for data collected, no presumption should be made on future relationship between HSVAR and global vessel list.

⁸ Cyprus and Sweden had participated to the Agreement prior to joining the EC, then counted as Member countries.

Number of fishers:

At present, work for the 3rd revision of the FAO Fisheries Circular No. 929 (“Number of fishers, 1970-200x”), is still in progress, pending the recruitment of the Fishery Statistician dealing with fishers (and fleet) statistics.

Supply/Utilization account:

In 2006, updating to 2003 of the Supply Utilization accounts (SUAs) and Food Balance Sheets (FBS) for fish and fishery products has been finalized. Work for the 8th revision of the FAO Fisheries Circular No. 821 (“1961-2003. Fish and fishery products. World apparent consumption statistics based on Food Balance Sheets”) is in progress.

Review and update of nutrition conversion factors

At present FIES calculates the Supply Utilization Accounts (SUAs) and Food Balance Sheets (FBS) for fish and fishery products for eight main groups of species and specifically:

- freshwater and diadromous fish;
- demersal fish;
- pelagic fish;
- other marine fish n.e.i.;
- crustaceans;
- cephalopods;
- molluscs excluding cephalopods;
- aquatic animals n.e.i.;

In order to obtain a better picture of actual utilization pattern of fish and fishery products, it was decided to separate “freshwater fish” and “diadromous fish”, as well as to divide “pelagic fish” into “small pelagic fish” and “large pelagic fish”. It is anticipated that these splits will be applied from the release of 2004/2005 data. In view of this modification, a consultant was hired to review and update the nutrition conversion factor used in FBS for main groups of fish and fishery products by product form (fresh, frozen, fillets, cured, etc.). The consultant is preparing a database on calories, proteins and fats, calcium, iron, retinol, Beta Carotene, Thiamine, Riboflavine, Niacin, Ascorbic Acid and Refuse by species/product form.

Change in SUA/FBS estimation procedure in FAOSTAT and its impacts on fish and fisheries component

Although FIES is responsible for the estimation of SUAs and FBS for fish and fishery products, the FAO Statistics Division prepares SUAs and FBS for agricultural products and both of them are disseminated together through the framework of “FAOSTAT” also managed by the FAO Statistics Division. In 2006 the FAO Statistics Division launched new “FAOSTAT” system that covers the whole process from data input, data processing and evaluation, to estimation of SUAs and FBS and dissemination. The new “FAOSTAT” system intends to resolve possible relative reliability of basic trade and production information by adjusting data automatically, and estimating SUAs and FBS through multi-variables error minimization process. Due to a limitation of data handling capacity as well as low reliability of historical records, the FAO Statistics Division decided to apply the new “FAOSTAT” system only for the data from 1990 onwards.

After thorough examination of behaviours of new “FAOSTAT” system through collaboration with the FAO Statistics Division, it was decided to maintain, at least for the time being, an independent working system for apparent consumption of fish and fishery products and provide new FAOSTAT system with already standardized data for dissemination. The rationals for this decision include:

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- The new FAOSTAT module often results in unreasonable estimates especially when dealing with small islands and countries with low population level, which could not be fixed even with ad-hoc modifications to the programme.
 - The new system removes the information on forms of processed product by converting all commodities into live-weight equivalent at the beginning of the process. On the other hand, in the current procedure, the data are standardized and converted into their primary equivalent only at the end of the balancing process for each commodity. The contribution of fish and fishery product to human food consumption varies largely depending on form of products and the loss of this information is expected to introduce substantially higher uncertainties in the final estimates.
 - FIES places high values on long-term consistency of disseminated statistics and it is hard to accept the idea of cutting off the historical series from 1961 as well as giving up a consistency among estimates disseminated in different years.
 - FIES cannot confidently agree that the newly introduced module and procedures were sufficiently examined and reviewed among all users, to be accepted as automated routine system.

Data exchanges and dissemination:

FishStat plus

At CWP21 in Copenhagen, the project for an upgrade of windows based FishStat Plus version 2.3 was presented. The upgrade on the end-users module intended to resolve a few problems reported by users, with a special focus to on improving the multi-language feature. The real change envisaged concerned the administration module which handles the creation of new data sets and the update of existing ones: the demand was to make this module more flexible, user friendly, and better documented so that agencies who were interested in using FishStat for the dissemination of their data sets need not to depend on FAO's assistance.

During the intersession, this new version was developed. The enhanced end-users module was tested by FAO staff against expected improvements and is officially being released as version 2.32 in February 2007. A beta version of the new administration module was presented to information managers of several CWP agencies during a training session organised in April 2006. The module enables flexibility in defining new data sets and their associated "data import" format for regular updates. The trainees were taught how to define a new data set, and how to use the "data import" feature. The final version of the administration module was delivered together with the relevant documentation in December 2006. It has not yet been tested by FAO information managers. Such testing is scheduled to occur before the end of the first 2007 semester.

It is worth mentioning that the developer could not further FAO's request to adapt FishStat Plus to specific requirements for the dissemination of the Food Balance Sheet data set. This is due to the fact that the FishStat Plus system was never designed to handle multiple time-series. The fundamental architectural changes necessary to facilitate this are substantial and would be better served with a planned redesign of the system, which has to be considered for the medium term.

Electronic questionnaires

The number of national correspondents utilizing electronic questionnaires to return fishery statistics to FAO has continued to increase significantly, and for the 2005 capture statistics inquiry only **12 countries** reported their data by paper questionnaires, among which **10 countries** returned completed STATLANT paper questionnaires (in particular, only one country used the STATLANT 21A paper questionnaire and two countries reported data by the STATLANT 27 paper questionnaire).

Starting with the dispatch of questionnaires for the 2004 inquiry (April 2005), CCAMLR and FAO agreed to no longer include the STATLANT 08 A-B paper forms but to add in the "Note for Completion" paper sheet a reference to the CCAMLR web page from which the electronic questionnaire

can be downloaded. This helped to alleviate a bit the overall dispatch of paper questionnaires, which is a time-consuming and costly task for FAO-FIES.

In light of the very low number of countries still reporting data by paper questionnaires as mentioned above, FAO would encourage other CWP Members to consider if the dispatch of the paper questionnaires for the STATLANT form under their responsibility could be discontinued provided that national correspondents are fully informed about the availability of electronic questionnaires.

The Statistical Working System has been developed within FIES. Whenever a new file arrives, this system will compare its content with data maintained in the FAO database and indicated updated and revised records as well as consistency of all references for either further analysis by statistician or for final confirmation before uploading data into the database. Currently, this system is only available for capture and aquaculture questionnaires but plans are set to cover all statistics. The same system is expected to become a basis for developing coordinated data compilation between multiple organizations as requested by SEAFDEC.

New FAOSTAT

The new “FAOSTAT” was launched in 2006 for external users. The methodological framework, processing and dissemination systems of “FAOSTAT” were redeveloped together with its coverage, revised standard international commodity classifications, statistical and meta databases.

The new “FAOSTAT” consists of an integrated core database with satellite databases feeding and supporting it. The core database basically contains information estimated through “FAOSTAT” SUAs and FBS estimation process that was explained in the section above. Then, all the data disseminated in the Core are those already adjusted and converted into live weight equivalent since 1990, which are not the same as those disseminated through the old FAOSTAT, especially in the case of trade and commodities data. Most of the data disseminated through the old FASTAT seems to be now available at satellite databases.

“FAOSTAT” remains the FAO corporate database working system and it is currently the world’s largest and most comprehensive statistical database on food and agriculture. Aquaculture and fisheries statistics have been provided to the FAO Statistics Division as previously. However, probably due to the priority toward developing “FAOSTAT” interfaces and systems, the updates of provided data as well as requested correction of errors have not necessarily been reflected in the web-site dissemination promptly. Although FIES plans to establish its own satellite for dissemination of aquaculture and fishery statistics using the same interface as new “FAOSTAT” during 2007, the users who need fishery related information are encouraged to use the FIGIS web-site in Fisheries and Aquaculture Department <http://www.fao.org/figis/servlet/static?dom=root&xml=tseries/index.xml>.

Capacity building (FishCode-STF):

Recommendations and follow up actions of CWP - FishCode STF workshop of February 2005 [83-84] – Agenda 5.3

The FishCode-STF Project and FAO should assist RFBs in increasing the awareness of the importance of the implementation of the STF Strategy.

- In March 2005 all FAO regional fisheries officers were briefed on the FAO STF strategy and the FAO FishCode STF project. The implementation of FAO STF strategy was discussed at the third Session of the Regional Commission for Fisheries (RECOFI) and at a meeting of CPPS in 2006. An awareness brochure on the FAO strategy and the FishCode STF project has been prepared and is distributed
- An awareness brochure on the importance of inland fisheries monitoring has been prepared. Once printed they will be provided to all RFBs for distribution

- The FishCode STF website providing background information on the importance of the Strategy and activities of the FishCode STF project was launched in May 2005

The FishCode-STF Project and FAO, together with the RFBs, should stress the importance of and promote actions on transparent and complete national data collection of fisheries.

- Since its start in November 2004, The FishCode STF project has organised a regional workshop in South East Asia in Collaboration with SEAFDEC and a regional workshop in Central America in collaboration with OSPESCA, a regional workshop in the Pacific in Collaboration with SPC and two workshops in China in collaboration with CFS For 2007-2008 Regional workshop in West Africa are planned in collaboration with CECAF

The FishCode-STF Project should cooperate with RFBs on the carrying out of inventories of data collection systems and status of stocks, in particular in supporting their contribution to FIRMS

- Fisheries and marine resources inventories in the FishCode STF project are building upon the already advanced work of the Fishery Resources Monitoring System (FIRMS) partnership. During 2005, inventories were completed for Australia, the USA and Namibia through the use of official governmental sources. During 2006, South Africa and Angola were nearly completed, a version was developed for Pacific Island countries with the available information, and work is well advanced for some Southeast Asian countries such as Thailand, Indonesia, the Philippines, or with Central American countries such as Nicaragua or Honduras. The Project has supported the development of the fisheries module based on case studies provided by FIRMS partners as well as the Fishcode-STF inventories. The module will be used both by FIRMS and Fishcode-STF.

FishCode-STF Project should seek collaboration with interested RFBs for the development of monitoring systems for small-scale fisheries in developing countries. All RFBs may assist with the identification of expertise for technical assistance.

- It has been recognized by COFI that small-scale fisheries (SSF) have not been given due attention and that SSF in developing countries are not well monitored. FAO has begun to address these concerns by developing technical guidelines on small-scale fisheries, and by collaborating with the WorldFish Center on an initiative to develop a project for the interdisciplinary assessment of small scale fisheries. FishCode-STF embraced this initiative and in September 2005 organised, in association with the WorldFish Center, an “agency stakeholders” workshop on the role of SSF in food security, poverty alleviation and sustainable resource use, and on the development of simple and appropriate methods for collecting data in such fisheries. The Workshop constituted a first step in developing a collaborative project towards capacity-building for small-scale fisheries assessment in developing countries. Forty-five participants took part. They represented various international and national agencies and academic institutions as well as private firms, and were invited on the basis of their extensive experience in SSF either from a natural or social science background. The Workshop through its plenary and working group sessions addressed three main tasks: (i) preliminary development of a framework for interdisciplinary assessment of small-scale fisheries; (ii) identification of appropriate approaches, methods and research needs to help fill small-scale fisheries information gaps; and (iii) preparation of an outline implementation strategy for a collaborative project on small scale fisheries. Two steps have been taken as immediate follow up to the workshop. (i) The creation of a “Virtual Office on the Assessment of Small Scale Fisheries”. The virtual office will serve as a contact point for persons/institutions dedicated to work on integrated assessment of small scale fisheries. www.OneFish.org. (ii) Establishment of a “Small-Scale Fisheries Assessment Global Working Group E-Forum”. The Group aims to: (a) develop a comprehensive, multidisciplinary and cross-sectoral approach to small scale fisheries assessment and related management advice; and (b) assemble related assessment methodologies and tools for use by fisheries researchers, planners, administrators, practitioners and other stakeholders. The proceedings of the workshop are published as an FAO Fisheries Report (no 787). In 2006 funds were obtained to follow up on the

recommendations of the workshop and the development of a draft assessment frame work for integrated assessment of SSF is being prepared and will be carried out in 2007

- The Regional FAO FishCode-OSPESCA Workshop identified improvement of Small Scale Fisheries monitoring as a priority. As follow up of this workshop the following activities are being implemented in Central America:
 - Establishment of the OSPESCA Working group on fisheries statistics
 - Establishment of the OSPESCA working group on Queen conch monitoring
 - Increasing the profile of SSF in the national policies of Nicaragua.
 -

The FishCode-STF Project should consider developing guidelines for the establishment of data exchange protocols based on the CWP handbook on fisheries statistical standards

FIGIS FISat working system software components handling the aspects of domain, collection and formats, identified as central to protocols for statistical data exchange, were developed and successfully tested. The web based application could now be examined by CWP agencies regarding new potentials offered to for streamlining data exchange, data quality control, and comparisons across data bases (regional and global).

Publications:

FAO-FIDS, 2005 *FAO yearbook. Fishery statistics. Capture production 2003.*, Vol. 96/1.

FAO-FIDS, 2005 *FAO yearbook. Fishery statistics. Aquaculture production 2003.*, Vol. 96/2.

FAO-FIDS, 2005 *FAO yearbook. Fishery statistics. Commodities 2003.*, Vol. 97.

FAO, 2005 *Guidelines for designing data collection and sharing for co-managed fisheries. Part 1: Practical guide*, FAO Fisheries Technical Paper 494/1.

FAO, 2005 *Guidelines for designing data collection and sharing for co-managed fisheries. Part 2: Technical guidelines*, FAO Fisheries Technical Paper 494/2.

FAO-FIDS, 2006 *FAO yearbook. Fishery statistics. Capture production 2004.*, Vol. 98/1.

FAO-FIDS, 2006 *FAO yearbook. Fishery statistics. Aquaculture production 2004.*, Vol. 98/2.

FAO-FIDS, 2006 *FAO yearbook. Fishery statistics. Commodities 2004.*, Vol. 99.

FAO-SPC, 2006 *Improvement of fishery information and data collection systems in the Pacific region: Proceedings of the FAO SPC regional workshop on the improvement information on status and trends of fisheries in the Pacific region, Apia, Samoa, 22-26 May 2006.* Volume 1: Report of the Workshop, **FishCode-STF-WP2006/3.**

FAO-SPC, 2006 *Improvement of fishery information and data collection systems in the Pacific region: Proceedings of the FAO SPC regional workshop on the improvement information on status and trends of fisheries in the Pacific region, Apia, Samoa, 22-26 May 2006.* Volume 2: Regional synthesis and country reviews. **FishCode-STF-WP2006/4**

FAO-CSF, 2006 *Improving fisheries and aquaculture statistics in China: Proceedings of the second FAO/CSF workshop on Chinese fisheries and aquaculture statistics, Kunming, Yunnan Province, China, 12-15 September 2006.* Volume 1: Report of the Workshop. **FishCode-STF-WP2006/5**

FAO-CSF, 2006 *Improving fisheries and aquaculture statistics in China: Proceedings of the second FAO/CSF workshop on Chinese fisheries and aquaculture statistics, Kunming, Yunnan Province, China, 12-15 September 2006.* Volume 2: Working documents. **FishCode-STF-WP2006/6**

FAO-CSF, 2006 *Improving fisheries and aquaculture statistics in China: Proceedings of the second FAO/CSF workshop on Chinese fisheries and aquaculture statistics, Kunming, Yunnan Province, China, 12-15 September 2006.* Review of fishery information and data collection systems in China. **FishCode-STF-WP2006/7**

Appendix 1. The proposed revision for the CPC v.2 related to fish and fishery products

| CPC v. 2 | | | | | | |
|--------------------|-------|----------|---|---------------------------|---------------------------|-------------|
| Group | Class | Subclass | Description | Correspondences | | |
| | | | | HS 2007 | ISIC Rev.4 | CPC Ver.1.1 |
| Section 0 | | | Agriculture, forestry and fishery products (...) | | | |
| Division 04 | | | Fish and other fishing products | | | |
| 041 | | | Fishes, live, fresh or chilled | | | |
| | 0411 | | Fish, live | | | |
| | | 04111 | Ornamental fish | 0301.10 | 0322 | 04110* |
| | | 04112 | Other live fish | 0301.91 - .99 | 0311, 0312, 0321, 0322 | 04110* |
| | 0412 | 04120 | Fish, fresh or chilled | 0302.11-.70 | 0311, 0312, 0321, 0322 | 04120 |
| 042 | | | Crustaceans, not frozen; oysters; other molluscs and aquatic invertebrates, live, fresh or chilled | | | |
| | 0421 | 04210 | Crustaceans, not frozen | 0306.21 - 29 | 0311, 0312, 0321, 0322 | 04210 |
| | 0422 | 04220 | Oysters | 0307.10 | 0311, 0321 | 04220 |
| | 0429 | | Other mollusc and aquatic invertebrates, live, fresh or chilled | | | |
| | | 04291 | Other molluscs, live, fresh or chilled | 0307.21, .31, .41, .51 | 0311, 0312, 0321, 0322 | 04230* |
| | 9 | 04299 | Other aquatic invertebrates, live, fresh or chilled | 0307.91 | 0311, 0312, 0321, 0322 | 04230* |
| 049 | | | Other aquatic plants and animals | | | |
| | 0491 | 04910 | Coral and similar products, shells of molluscs, crustaceans or echinoderms and cuttle-bone | 0508 | 0311 | 04910 |
| | 0492 | 04920 | Natural sponges of aquatic animal origin | 0511.99* | 0311, 0321 | 04920 |
| | 0493 | 04930 | Seaweeds and other algae, fresh, frozen or dried, whether or not ground | 1212.20 | 0311, 0321 | 04930 |
| | | | (...) | | | |
| Section 2 | | | Food products, beverages and tobacco; textiles, apparel and leather products | | | |
| Division 21 | | | Meat, fish, fruit, vegetables, oils and fats (...) | | | |
| 212 | | | Prepared and preserved fish, crustaceans, molluscs and other aquatic invertebrates | | | |
| | 2121 | 21210 | Fish, frozen (excluding fish fillets and fish meat) | 0303.11 -.79 | 1020 | 21220* |
| | 2122 | | Fish fillets and meat; fish livers and roes | | | |
| | | 21221 | Fish fillets and fish meat (whether or not minced), fresh or chilled | 0304.11, .12, .19 | 1020 | 21210* |
| | | 21222 | Fish fillets, frozen | 0304.21, .22, .29 | 1020 | 21220* |

CPC v. 2

| Group | Class | Subclass | Description | Correspondences | | |
|-------|-------|----------|---|---------------------------|------------|-------------|
| | | | | HS 2007 | ISIC Rev.4 | CPC Ver.1.1 |
| | | 21223 | Fish meat, whether or not minced, frozen | 0304.91, .92, .99 | 1020 | 21220* |
| | | 21224 | Fish fillets, dried, salted or in brine, but not smoked | 0305.30 | 1020 | 21230* |
| | | 21225 | Fish livers and roes, fresh or chilled | 0302.70 | 1020 | 21210* |
| | | 21226 | Fish livers and roes, frozen | 0303.80 | 1020 | 21220* |
| | | 21227 | Fish livers and roes dried, smoked, salted or in brine | 0305.20 | 1020 | 21230* |
| | 2123 | | Fish, dried, whether or not salted, or in brine; smoked incl. fillets; edible fish meal | | | |
| | | 21231 | Fish, dried, whether or not salted, or in brine | 0305.51 -.69 | 1020 | 21230* |
| | | 21232 | Fish including fillets, smoked | 0305.41 -.49 | 1020 | 21230* |
| | | 21233 | Edible fish meal | 0305.10 | 1020 | 21230* |
| | 2124 | | Fish, otherwise prepared or preserved; caviar and caviar substitutes | | | |
| | | 21241 | Prepared dishes and meals based on fish, molluscs and crustaceans | 1604.20* | 1075 | 21240* |
| | | 21242 | Fish, otherwise prepared or preserved | 1604.11 -.20 | 1020 | 21240* |
| | | 21243 | Caviar and caviar substitutes | 1604.30 | 1020 | 21240* |
| | 2125 | 21250 | Crustaceans, frozen | 0306.11 -.19 | 1020 | 21250* |
| | 2126 | | Molluscs and other aquatic invertebrates, frozen, dried, salted or in brine, smoked | | | |
| | | 21261 | Molluscs, frozen, dried, salted or in brine, smoked | 0307.29, .39, .49, .59 | 1020 | 21250* |
| | | 21269 | Other aquatic invertebrates, frozen, dried, salted or in brine, smoked | 0307.99 | 1020 | 21250* |
| | 2127 | 21270 | Crustaceans, otherwise prepared or preserved | 1605.10-.40 | 1020 | 21260* |
| | 2128 | 21280 | Molluscs and other aquatic invertebrates, otherwise prepared or preserved | 1605.90 | 1020 | 21260* |
| | 2129 | | Flours, meals and pellets, inedible, and other products n.e.c., of fish or of crustaceans, molluscs or other aquatic invertebrates; dead fish, crustaceans, molluscs or other aquatic invertebrates unfit for human consumption | | | |
| | | 21291 | Flours, meals and pellets, inedible, of fish, crustaceans, molluscs or other aquatic invertebrates | 2301.20 | 1020 | 21291 |
| | | 21299 | Products n.e.c. of fish, crustaceans, molluscs or other aquatic invertebrates; dead fish, crustaceans, molluscs or other aquatic invertebrates unfit for human consumption (...) | 0511.91 | 1020 | 21299 |

CPC v. 2

| Group | Class | Subclass | Description | Correspondences | | |
|-------|-------|----------|---|-----------------|------------|-------------|
| | | | | HS 2007 | ISIC Rev.4 | CPC Ver.1.1 |
| 215 | | | Animal and vegetable oils and fats (...) | | | |
| | 2152 | | Animal fats and oils, rendered | | | |
| | | 21521 | Lard | 1501.00* | 1010 | 21611* |
| | | 21522 | Poultry fat, rendered | 1501.00* | 1010 | 21611* |
| | | 21523 | Tallow | 1506.00* | 1040 | 21612* |
| | | 21524 | Fish-liver oils and their fractions | 1504.10 | 1040 | 21612* |
| | | 21525 | Fats and oils and their fractions, of fish, other than liver oils | 1504.20 | 1040 | 21612* |
| | | 21526 | Fats and oils and their fractions, of marine mammals | 1504.30 | 1040 | 21612* |
| | | 21529 | Other animal fats, rendered, n.e.c. | 1503,1506.00* | 1010, 1040 | 21612* |

*= part of

Appendix 2. The proposed new structure for the classification of occupations in agriculture, forestry and fisheries in ISCO-08.

| ISCO 08 | | |
|---------------------|---|---------------------|
| ISCO-08 code | | ISCO-88 Code |
| 1 | Managers, senior officials and legislators | |
| 131 | Farm, forestry and fisheries managers | |
| | (...) | |
| 1319 | Farm, forestry and fisheries managers | 1221, 1311 |
| | (...) | |
| 3 | Technicians and associate professionals | |
| 312 | Engineering production supervisors | New group |
| | (...) | |
| 3145 | Fishery technicians | 3212 part |
| | (...) | |
| 6 | Skilled agricultural and fishery workers | |
| 61 | Market-oriented skilled agricultural and fishery workers | |
| | (...) | |
| 615 | Fishery workers, hunters and trappers | |
| 6151 | Aquaculture workers | 6151 |
| 6152 | Inland and coastal waters fishery workers | 6152 |
| 6153 | Deep-sea fishery workers | 6153 |
| 6154 | Hunters and trappers | 6154 |
| 62 | Subsistence agricultural, fishery and forestry workers | |
| 621 | Subsistence agricultural, fishery and forestry workers | |
| 6210 | Subsistence agricultural, fishery and forestry workers | 6210 |
| | (...) | |
| 9 | Elementary occupations | |
| 92 | Agricultural, fishery and forestry labourers | |
| 921 | Agricultural, fishery and forestry labourers | |
| | (...) | |
| 9216 | Fishery and aquaculture labourers | 9213 |
