Workshop on Establishing a Coordinating Working Party on Aquaculture Statistics (CWP-AS)

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Working Document – A "Coordinating Working Party-like body on Aquaculture Statistics" (CWP-AS)

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Contents:

The paper presents for discussion, comments and recommendations, proposals concerning possible structures of a new group, responsible for coordinating international aquaculture statistics and information, its terms of references, possible membership and its relation with the **Coordinating Working Party** on Fishery Statistics (**CWP**).

A "COORDINATING WORKING PARTY"-LIKE BODY ON AQUACULTURE STATISTICS"(CWP-AS)

I- INTRODUCTION

The Expert Consultation (held in Bangkok, 28-29 February 2000) that led to the establishment in 2001 of the COFI Sub-Committee on Aquaculture (COFI/AQ), identified the aquaculture "statistics, data and information management" as one of the six areas deserving priority attention by the international community[1].

The COFI Sub-Committee on Aquaculture (COFI-AQ), during its First Session in April 2002, identified data collection and reporting (to improve knowledge and management of the sector) as a key priority area for future work. The Sub-Committee considered information needs for aquaculture at the global level and recommended that FAO develop an approach (strategy) for improving reporting on aquaculture status and trends similar to that developed for capture fisheries, with special attention to the quality of the information on which it is based[2].

Following up with this recommendation, an Expert Consultation on Improving Information on Status and Trends of Aquaculture held in January 2004 reviewed and approved, with amendments, a draft Strategy for Improving Status and Trend Reporting for Aquaculture prepared by FAO which includes a recommendation for FAO to consider establishing an inter-regional Coordinating Working Party on Aquaculture Statistics (CWP-AS) with the same terms of reference as the Coordinating Working Party on Fishery Statistics (CWP-FS)[3], i.e. to (a) keep under continuous review the requirements for aquaculture statistics for research, policy-making and management, (b) agree on standard concepts, definitions, classifications and methodologies for the collection and collation of aquaculture statistics, and (c) make proposals for the coordination and stream-lining of aquaculture statistical activities amongst relevant intergovernmental organizations[4].

The draft Strategy together with the establishment of CWP-AS was endorsed by the 3rd session of the COFI/AQ (New Delhi, India, 2006)[5] and then by the 27th Session of the FAO Committee on Fisheries (COFI- Rome, Italy, 5 - 9 March 2007)[6]. Previous to the COFI endorsement the CWP-FS also discussed the proposal of establishing a CWP-like body for aquaculture at its 21st Session (Copenhagen, Denmark, 1-4 March 2005) and 22nd Session (Rome, Italy 27 February-2 March 2007)[7], which supported the idea but felt the existing membership to be inadequate to take an initiative towards establishing a mechanism specified for aquaculture.

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[1] Report of the Expert Consultation on the Proposed Sub-Committee on Aquaculture of the Committee on Fisheries, FAO Fisheries Report No. 623, Bangkok 2000

[2] Report of the First Session of the Sub-Committee on Aquaculture, FAO Fisheries Report No. 674, Beijing, People's Republic of China, 18-22 April 2002

[3] See Appendix 1-The CWP, its origin, evolution and achievements

[4] *In* Towards improving global information on aquaculture, FAO Fisheries Technical Paper 480, Rome, 2005. See also Appendix 2 -Strategy and outline plan for improving information on status and trends of aquaculture

[5] "*The Sub-Committee endorsed the concept of establishing a Coordinating Working Party on Aquaculture Statistics to provide advice on matters related to information for aquaculture and to facilitate the establishment of standardized concepts, methodologies and software for use in data collections* (para 27)". Report of the 3rd Session of COFI/AQ, (New Delhi, India, 4-8 September 2006), FAO Report No. 816, Rome 2006

[6] Report of the twenty-seventh session of the Committee on Fisheries, FAO Fisheries Report No. 830, Rome, 5-9 March 2007

[7] Report of the 22nd Session of CWP, FAO Fisheries Report No. 834, Rome 2007

This document is prepared in order to provide background information and concepts to facilitate the discussions of the Workshop, and to enhance the quality and focus of the discussions towards establishing a Coordinating Working Party for Aquaculture Statistics. The participants are strongly encouraged to explore their views on the most appropriate format and mechanisms for CWP-AS without being constrained with the contents of this document.

II- ISSUES IN ESTABLISHING A CWP-AS

OBJECTIVES AND TOR

The Workshop should address the mandate and terms of reference for a Coordinating Working Party for Aquaculture Statistics. The numerous discussions on the subject, which have taken place at sessions of COFI/AQ or at expert consultations have already broadly shaped the functions of the CWP-AS, and the results expected from a programme of enhancement of data collection. The novelty of the CWP-AS would permit to bring such discussions to the level of regional and other groups, to the definition of a set of data of common use, to be regarded by national statistical offices as a minimum for international reporting. The TORs should however be agreed by the member organizations.

Some potential components are listed below:

- To bring together regional and international agencies with a mandate to monitor the aquaculture sector, at regional or global level, for a single or multiple species, through the collection and analysis of aquaculture data and information
- To set and develop standards related to aquaculture statistics
- To set and develop standards related to aquaculture information
- To make recommendations on issues related to both
- To evaluate and advise on the most suitable methodologies for data collection, including development of standardized tools and capacity-building in their use
- To contribute to the promotion and coordination of aquaculture status and trend reporting in a systematic way from the national to the regional and global levels cooperation on means to improve the quality of statistics and information on aquaculture
- harmonization and/or standardization of concepts, definitions, classifications and terminology used in aquaculture data and information collection and reporting
- to review member's requirements for aquaculture statistics and to establish a common form for data collection
- keep under review requirements for aquaculture statistics and information for research, policy making and management and make proposals for the collection of missing data (especially economic statistics of importance to aquaculture, in particular value and price information, processing and trading sectors of the industry)
- make proposals for the coordination of aquaculture statistical activities among relevant regional and international organizations
- identify effective mechanisms to establish and maintain arrangements for sharing and generating data and information on aquaculture
- assess new technologies to improve information flow and exchange
- develop guidelines on data collection methodologies

- develop standardized tools for data collection and processing and support capacity building in their use
- streamline data collection among different overlapping sectors (e.g. between aquaculture and capture production data, agriculture, socio-economic data, trade and commodity data etc.)
- develop international norms and standards for aquaculture statistics
- promote and coordinate aquaculture status and trends reporting in a more systematic way at national, regional and global levels for easy comparisons among different nations/regions
- revise rules of procedures as deemed necessary and suggest changes taking into account budgetary implications and the interagency nature of the composition of CWP-AS
- establish continued cooperation with the appropriate institutions for matters related to census taking and associated methodological studies, and with the UN Statistical office for matter of more global statistical nature (e.g. definition of aquaculture)
- establish close working relations with the COFI Sub-committee for Aquaculture (COFI-AQ).

Aquaculture is often an activity practised alongside agriculture especially in medium-small scale farms and in rural settings. The statistical system required for efficient and reliable data collection of these sub-sectors is closer to that used for agriculture products, than that in use for capture fisheries data collection. In commercial aquaculture fish is harvested based on market conditions and thus there are critical economic data required for decisions that may not be collected for catches. Many producers associations may hold valuable information on prices and value of production that they would be keen to share and compare.

It is recognized that there are important interactions between capture fisheries and aquaculture, at production and marketing levels, and these interactions require attention to coordination and cooperation also in statistical matters.

CWP-AS would have the advantage to give impetus to progress on the subject, to respond timely to the new information needs of a technological sector evolving dynamically and posing new challenges in the harmonized use of terms (e.g. eco-labelling, certifications of origin of aquaculture products for consumer protection and food safety). Good policy decisions regarding the use of natural resources -like water, land, seed and feed- as well as sound environmental management, necessary to sustain and enhance aquaculture's growth, need sound and reliable information. The need has often been expressed in various fora for a wider array of core data -e.g. value, prices and other economic data- whose absence is more critical for aquaculture than capture fisheries. In this regard the *ad hoc* Working Group of Experts on the FISHSTAT AQ questionnaire (convened by FAO in Rome, Italy on 26-28 January 2004)[8] worked out a more structured questionnaire and proved the efficiency of a focussed group of experts working together for a joint aim.

The fact that FAO world aquaculture statistics have been obtained after a separation of aquaculture production from the global fishery production statistics, has already ensured that standards and concepts have been established in full harmony with the capture fisheries data. Both data collections have referred and made use of to the same classifications for data collation, and other reporting standards (units of measure, type of weight) ensuring full

[8] FAO Fisheries Technical Paper 480: "Towards improving global information on aquaculture", Rome, 2005

comparability of aquaculture and capture production statistics. Due to various limitations, FAO/FI has initially made use of the same system for data recording and processing and this has resulted in some difficulties in incorporating additional data elements for aquaculture.

The future work of CWP-AS will thus focus more closely in areas of specific relevance to aquaculture (though it is understood that overlapping and grey areas will remain in respect to capture fisheries, e.g. the procurement from wild stocks of fry and juveniles, the on-growing/rearing of small specimen caught from the wild), but entirely within the spirit of the CWP-FS.

It is recognized that the aquaculture information/data needs would greatly benefit from the expansion of the system to cover socio-economic information of verifiable quality and across-country comparability. For instance, some essential economic data (e.g. value of production, prices) are discussed occasionally at CWP-FS. The information collected for aquaculture products -which should more closely match that of other "cropped" commodities- does not include market information as trends in prices at farm-gate, wholesale and retail levels. Some of the value/price data submitted to FAO through the aquaculture inquiry probably are not conforming to the suggested standard and may create distortions.

The CWP-AS should concentrate on means to increase the availability of important series for the sector management, which desirably should also be available for capture fisheries but whose absence is more critical for the aquaculture sector management. Prices, value of production, generation of income, contribution to the formation of the Gross Domestic Product, contribution to international trade, generation of employment opportunities, contribution to food intake etc. are areas of potential attention.

The forum should be a great help to the FAO Fishery and Aquaculture Department for preparation of the (biennial) Review of the State of Aquaculture, and the biennial State of Fisheries and Aquaculture (SOFIA).

The TORs of the new body may be expanded to cover discussions on non-statistical information. This should help to get a wide membership and countries' active involvement. The new body may be very important in achieving harmonization of terms and reporting standards such as those that might be linked to 'certification, labelling, organic, mangrove friendly etc.' It can be foreseen that the CWP-AS may play a significant role in getting consensus on what these terms mean and this will be of central importance in resolving some of the current terminology confusion, and help reporting on these subjects, in addition to aquaculture statistical reporting.

MEMBERSHIP

The Workshop should focus some discussion on the potential membership in a CWP-AS. The current CWP has a membership consisting of inter-agency fisheries bodies. There are no national members and no member representing the fishing industry. This may not be the best model for the proposed CWP-AS, where one country, China, produces 70% of the global production of aquaculture. Clearly any attempt to improve global information must include strong participation from China, either as a member or through an organization of which it is a member. However, opening up membership to national agencies may create a risk that an organization becomes too large and unwieldy.

One potential model would be to define Core Membership exclusively of regional /international agencies/bodies with a remit for aquaculture data and information collection /analysis. Selected national offices may be invited at the discretion of the Members to attend sessions of CWP-AS, either to present their experience in dealing innovatively with statistics and information or to foster the establishment of systems for data and information collection when the national system is not adequately addressing the problem. Membership to CWP-AS will be open to all relevant agencies willing to participate. The CWP-AS will co-opt national membership for attending one or more sessions, as deemed essential.

However membership could be expanded beyond the core membership of regional/international agencies which have a role in aquaculture information (including statistics in some, but not all cases) which would work in support of implementation of the proposed Strategy-STAQ. The logical global participants to the CWP-AS might include FAO, NACA, the "NACA-like" bodies being formed in other regions of the world (e.g. NACEE for East Europe), SEAFDEC, Eurostat, OECD, interested Regional Fisheries Bodies (with a remit on aquaculture), and other economic information networks (e.g. the inter-governmental INFO-network of GLOBEFISH, that is INFOFISH, INFOPESCA, INFOSAMAK, INFOYU, INFOSA) and interested international industry/producer organizations (e.g. FEAP).

It is advisable not to start discussions with an unduly large membership as it may hamper smooth proceedings. The difficulty could be overcome by selecting members for particular sessions and restricting the field of topics of the agenda accordingly. It is also advisable to start without national participation, although there may be a case for extending membership to national agencies at a later stage, particularly for countries where there is not a link to an international agency or network for aquaculture. The CWP-AS members should look in future on how to tackle the problem of different data reported to different bodies, and elaborate a policy about data ownership/responsibilities, so as to avoid problems with the provision of contradictory data from national and regional sources.

There are several potential members for the new CWP-AS body. They have been grouped below according to their role (nature of their activities) in fishery and aquaculture statistics.

In approaching institutions for potential membership, a clear distinction should be made between bodies that collect, process and analyze statistics and information, and those which are principally users of data and information. Those organizations falling in the latter group are not entirely suitable for core membership.

Core Members

Bodies with global (=FI + AQ) statistical remit and already members of CWP:

FAO	Food and Agriculture Organization of the United Nations	Global
Eurostat	Statistical Office of the European Communities	27 member countries
OECD	Organization for the Economic Cooperation and Development	30 member countries +
SEAFDEC	Southeast Asian Fisheries Development Center	Southeast Asian region

SPC	Secretariat of the Pacific Community	South Pacific South of the Equator

Inland Waters Commissions/Bodies with *a core/relevant statistical remit for freshwater aquaculture*:

ACRONYM	***NAME***	***AREA OF COMPETENCE***
CIFA	Committee for Inland Fisheries of Africa Sub-Committee for Lake Tanganyika	Inland waters of member countries Lake Tanganyika
COPESCAL	Commission for Inland Fisheries of Latin America	Inland waters of member countries
EIFAC	European Inland Advisory Fisheries Commission	European inland waters
LVFO	Lake Victoria Fisheries Organization	Lake Victoria
MRC	Mekong River Commission	Mekong River Basin
APFIC	Asia-Pacific Fishery Commission	Indo-Pacific area (including inland waters)

Fishery Commissions/Bodies with a geographically global or regional remit (generally for mariculture/brackishwater culture) and with a core/ relevant statistical remit <u>not members</u> of CWP

ACRONYM	***NAME***	***AREA OF COMPETENCE***
BOBP-IGO	Bay of Bengal Programme Inter-Governmental Organization	Bay of Bengal
IBSFC	International Baltic Sea Fishery Commission	Baltic Sea and the Belts
RECOFI	Regional Commission for Fisheries	The Persian Gulf and Gulf of Oman
SWIOFC *)	South West Indian Ocean Fisheries Commission	South West Indian Ocean

Other fisheries/aquaculture related institutions and information networks

NACA	Network of Aquaculture Centers in Asia-Pacific	Pacific area (including inland waters)
NACEE	Network of Aquaculture Centres for Eastern Europe	Eastern Europe

NACLA	Network of Aquaculture Centers in Latin America	Latin America and the Caribbean
ANAF	Aquaculture Network for Africa (?)	Africa
FISH-INFO network	Including the marketing and trade network GLOBEFISH, EUROFISH, INFOFISH, INFOPESCA, INFOYU, INFOSAMAK, INFOSA	Member countries (more than nts support the network)

For instance INFOFISH, since 1987, is an Intergovernmental Organization providing marketing information and technical advisory services to the fishery industry of the Asia-Pacific region and beyond from its headquarters in Kuala Lumpur, Malaysia. Fourteen countries are currently members of INFOFISH (Bangladesh, Cambodia, India, Indonesia, Iran, DPR Korea, Malaysia, Maldives, Sri Lanka, Pakistan, Philippines, Papua New Guinea, Solomon Islands and Thailand).

Other Potential Members and Collaborating Partners

It is recognized that species-centered associations of producers and industry oriented bodies are in an advantageous position to concur to the improvement of the quality of the global information for species of their concern, especially economic information. Though they may be users of data and information and not be charged formally with statistical data collection, to the extent that their data need an effort for being reconciled with officially collected national data, they may possess a wealth of data –especially prices and other economic data- and knowledge worth being exploited for improving the global data/information base.

Producers/Marketing associations (global or for selected species) and industry-oriented bodies (as an example):

Federation of European Aquaculture Producers (FEAP)
Shrimp Farmers Associations
Trout Farmers Associations
Salmon Farmers Associations
Oyster Farmers Associations

Other centers of Excellence

World Aquaculture Society
European Aquaculture Society
WorldFish Center

and advocacy centers

Global Aquaculture Alliance
Aquaculture without frontiers

Recognising a common interest in knowledge promotion and complementarities with agricultural statistics as far as mixed agri-aqua farm operations are concerned there are

opportunities for calling occasionally ad hoc joint meetings and/or workshops especially to deal with methodology, surveys and agricultural census taking

FAO Regional Commissions for Agricultural Statistics

APCAS-Asia-Pacific Commission for Agricultural Statistics
AFCAS Africa Commission for Agricultural Statistics

COMPOSITION

The CWP-AS will be composed by a representative each of its member agencies/bodies with any number of participating advisors (i.e. one vote per agencies/bodies but no limit on number of participants). The participation should preferably include experts in charge of data and information (statistician, economist, information analyst). National experts may be co-opted as deemed opportune by members.

FUNCTIONS

(a) to coordinate the statistical work of specialized agencies dealing with data, statistics and information related to aquaculture;
(b) to promote mainly through methodological studies the development/improvement of national aquaculture statistics and contribute to the improvement of their international comparability;
(c) to advise on general statistical questions and methodologies relating to the collection, analysis and dissemination of aquaculture statistics and information.

RULES OF PROCEDURE

The Coordinating Working Group CWP-AS will meet periodically (biennially, for a 2-3 day period). One potential scenario would involve planning the sessions in conjunction with the COFI Sub-Committee on Aquaculture. This would have the advantage of reducing travel costs for participants, as many of the members interested in CWP-AQ would already be attending COFI-AQ. Additionally it would provide a strong link between the two bodies. CWP-AS will report to CWP for ensuring full consistency and compatibility with capture fishery data in matters of common interest. CWP-AS will report to the COFI-Sub-Committee for Aquaculture for matters of an institutional nature that require the COFI/AQ endorsement.

As a measure of cost containment, similarly to what has been done by CWP-FS, it is suggested that meetings are held in English, an international communication language in most bodies. This would permit to spare the high cost of interpretation at meetings.

ORGANS

The Workshop should discuss potential scenarios for establishing this body and its potential structure and way of operating. One potential plan is outlined as follows.

The Secretariat to CWP-AS could be provided by FAO. A Chair could be nominated/selected from Members in turn. The Secretary and the Chair, in consultation with members, would be responsible for drafting the agenda of the meetings sessions, convening the meetings, preparing documentation and the session report.

POSSIBLE STRUCTURE – Relation with CWP-FS

The Workshop is invited to consider possible relationship with CWP-FS, although this is not necessarily critical issue to be decided at this early development phase. This section briefly describes the competence of current CWP-FS relating to aquaculture issues, and then provides an overview on pros and cons for two scenarios, CWP-AS to be independent body and to be integrated body of CWP-FS, although those should not be considered as exhaustive options.

The CWP-FS, in place since 1960, with a membership of regional fishery bodies, has developed statistical standards, definitions, classifications and methodologies for international fishery statistics, including aquaculture alongside with capture fisheries, fishery commodities and trade, fish consumption, fishing fleets, and employment in fishery. It was also involved in designing a single inquiry undertaken by FAO on recreational fisheries, intermittent inquiries on technical conversion factors and the compilation of a handbook of international statistical standards. CWP has efficiently responded not only to the requirements of its member agencies, but also to the need to minimize the burden of national statistical offices in statistical reporting to international bodies. Its deliberations have had a positive trickle-down effect on national fishery statistical systems, raising the statistics to a more satisfactory level in terms of harmonization to international standards, improvement of quality, refinement of the data series collected and thus bringing national systems closer to meeting international reporting requirements. The rationale behind this effort is that the most important use of international statistics is for the benefit of individual countries.

Though CWP-FS's remit was global in scope, most of its original members (e.g. the Atlantic regional fishery bodies) were interested mainly in mariculture aspects of aquaculture, and as a consequence deliberations in its earlier sessions have been restricted to statistical aspects of marine aquaculture practices. Since the early 80s, with the gradual world-wide spreading of aquaculture operations and their increasing share to food fish supply, CWP-FS has contributed to the elaboration of an internationally accepted statistical definition of aquaculture, which has permitted FAO to separate global production statistics into capture and culture production. The CWP-FS also agreed a common questionnaire (FISHSTAT AQ) for the reporting of aquaculture statistics to FAO and to relevant regional fishery organizations. CWP-FS Sessions agendas have typically included an item on aquaculture statistics.

The CWP-FS shifted its main focus in 1995 to strengthen global coordination and harmonization especially corresponding to the needs in the light of the outcome of the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks. This reflected the expansion of its membership in the latest 15 years being mostly tuna agencies. Of the current 16 agencies members of CWP-FS in 2007, only FAO, Eurostat, OECD and SEAFDEC systematically collect, process and disseminate statistics on the combined production of inland, brackish and marine aquaculture (either global or in respect of their member countries). Some members have interest in the statistical treatment of limited areas of on-

growing practices (e.g. tuna-farming, cod) with mechanism (typically as a committee or a department) mandated to monitor aquaculture component, generally in marine waters. Some members have no direct involvement in aquaculture.

The CWP-FS has noted its inadequacy of expertise and interests in being a leader of aquaculture statistical matters. The CWP-22nd Session welcomed the initiative taken by aquaculture experts, and recommended that FAO and the CWP Secretariat ensure close collaboration and monitoring in aspects of data needs shared by capture fishery and aquaculture sub-sectors and in maintaining the consistency of standards and concepts.

All questions related to aquaculture should be the remit of the CWP-AS. However, the CWP-AS should advise CWP-FS on special measures to take for harmonizing and improving aquaculture statistics, reporting its deliberations to the full session of the parent body to which it is affiliated, regardless its relationship with CWP-FS. Also, CWP-AS will have its unique membership with special interests in aquaculture statistical issues, regardless the relationship with CWP-FS.

Advantage of CWP-AS as a body independent of CWP-FS

1) The establishment of a new body focussing exclusively on aquaculture statistics (and information) would allow speedy decision making and implementation on statistical problems relevant to aquaculture.
2) The novelty of the body may arise stronger interest in countries and push them to enhance national data collection to meet the international reporting standards.

Disadvantage of CWP-AS as a body independent of CWP-FS

1) There maybe a risk of duplicating discussions on general statistical matters or to diverge on opinions/courses of action in areas of mutual interest to aquaculture and general fishery statistics.

2) Its establishment may entail more bureaucratic steps for FAO, as it would be a body of higher visibility. Depending on what kind of formality is envisaged, this may be the biggest and potentially single substantial difference between two Options.

Advantage of CWP-AS as a integrated body of CWP-FS

1) The formation of a subsidiary body within CWP-FS to specifically deal with aquaculture is in line with the power entrusted to CWP-FS (e.g. in the past when the special needs of an increasing number of tuna agencies led to consider the establishment of a CWP-Tuna)
2) The administrative process for establishing the CWP-AS statutes as a formal body should be easier given the existing CWP procedures. There would not be a need to go through the more complex process of establishing a new body, as long as CWP-FS agrees on the TOR of CWP-AS.

Disadvantage of CWP-AS as a integrated body of CWP-FS

1) The lack of interest (also due to their mandate) of many CWP-FS members in aquaculture matters could be a hindrance and would discourage expansion of membership to relevant potential partners

2) After nearly 50 years of existence the CWP-FS appears to have lost its aspiration and energy to face expanded changes and to develop opportunities given to it by the international community at the time of its reconstitution in 1995. However, there is also the possibility that a change of structure to incorporate aquaculture component would help revitalize the role and participation of the CWP.

III- ADMINISTRATIVE AND BUDGETARY REQUIREMENTS AND LONG-TERM SUSTAINABILITY

The establishment of a new working party has some administrative and financial implications for FAO and for the Regional Bodies/Networks/Organizations participating in the work of the CWP-AS as members. However, the aquaculture sector is sufficiently important to justify some additional expenditure of funds, taking into account that Members of FAO and of the Regional bodies/networks/ organizations would be better served by such additional expenditures.

The administrative and budgetary requirements of either Option 1 or 2 would be very similar as far as FAO is concerned**.** However, if a CWP-AS is intended to be established as an independent body under the umbrella of Article VI-2 of the FAO Constitution (see Basic Text accessible at http://www.fao.org) , the formal clearance by Conference may be needed.

As far as actual tasks taken by FAO staff are concerned, there is no need for requesting its governing bodies an additional allowance for the establishment and operation of CWP-AS. Most of the activities associated to the CWP-AS fall under the regular programme of work of relevant FAO staff members.

For FAO, the convening and servicing of sessions of the CWP-AS, as well as the preparation, processing and distribution of documentation and follow-up work, will involve additional staff time, travel costs (and possible contractual services). It can be roughly estimated that, depending on the items covered in the Agenda, approximately two person/months per year of professional staff time and one person/month of general service staff time would be required and should be reflected in the divisional Programme of Work and Budget.

Costs of meeting facilities and staff time are omitted from these considerations as they will change depending on venue. It should be recognized that during the course of the Sub-Committee's work, extra costs may arise from time to time, for example to write review papers or methodological documents by individual experts.

The administrative and financial implications for CWP-AS members would be born by the concerned agency, which should obviously find a merit and benefit in participating to the deliberations and discussions of CWP-AS.

At each meeting a report will be written and published at least in English -but possibly FAO should consider translation in French and Spanish- to ensure maximum knowledge and understanding at national level.

The long-term sustainability of the new body would not be affected by financial considerations. It would be exclusively based on the perceived usefulness of the new body and on its achievements. It is recognized that the standardization and harmonization of terms for aquaculture would not pose the same huge task that faced capture fisheries statisticians, thus a Working Party focussed on aquaculture does not necessarily need of being continuing. It could be called to work for a definite period of time (e.g. 6 years), assess its achievements at the end of an established period and evaluate possible options for its future.

It is proposed that the first formal preparatory session of CWP-AS should best be called in conjunction with the forthcoming session of the COFI-Sub-Committee on Aquaculture. That is to say if work proceeds speedily the first CWP-AS should be convened immediately before the 4th Session of the COFI Sub Committee on Aquaculture which will be held in October 2008. This would permit

- To ensure cost-effective and numerically good participation from international bodies with interest in aquaculture data, statistics and information and
- To test their interest in becoming members and thus participate to future discussions and deliberations.

IV- PLAN OF IMPLEMENTATION

A potential plan of implementation is presented here. The Workshop participants should discuss whether the proposed timing should be evaluated for efficiency and realism.

The Meeting of Expert (January 2008) proposes draft TOR and plan for structure to an *ad hoc* group meeting, the formal preparatory session for CWP-AS, to be convened in October 2008 (when COFI-AQ is convened)

FAO either to draft the Statutes of either CWP-FS or FAO Statutory Body, according to its option for the relationship with CWP-FS and structure of CWP-AS, for the discussion and approval in the appropriate forum at 2009-2010 Session. In the latter case, the clearance by legal Office (FAO) would be needed in preparation for seeking formal approval from FAO Governing Bodies.

Following to the approval by appropriate forum, FAO to send a letter to all potential members, informing of the establishment of the CWP-AS and to sound their willingness to apply for membership. Members to inform their constituencies of their application to CWP-AS.

FAO to convene the first meeting of the CWP-AS, either in 2009 or in the same venue and back-to-back with the 5th Session of COFI/AQ in 2010 (Thailand)

Appendix 1 -The CWP, its evolution and achievements

The **Coordinating Working Party** on Fishery Statistics (CWP) is a FAO statutory body. It provides a mechanism to coordinate fishery statistical programmes of regional fishery bodies and other inter-governmental organizations with a remit for fishery statistics.

Functional since 1960, when it was named **Continuing Working Party** on Atlantic Fisheries Statistics reflecting its limited geographical remit, the CWP was reconstituted in 1995 and its remit was extended beyond the Atlantic to all marine water bodies. Such changes occurred to better respond to the increasing demands for reliable fishery statistics (such as those resulting from the 1995 UN Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, as well as the 1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas and the Code of Conduct for Responsible Fisheries)

With the remit of the re-constituted CWP no longer limited to the Atlantic, several additional regional fishery bodies became participating organizations of CWP: SPC and IWC joined in 1997, CCSBT in 1998, IOTC in 1999, IATTC in 2000, SEAFDEC in 2004 and NEAFC in 2006.

There are currently (2007) 16 participating organizations in the CWP:

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Food and Agriculture Organization of the United Nations (FAO)
- General Fisheries Commission for the Mediterranean (GFCM)
- Indian Ocean Tuna Commission (IOTC)
- Inter-American Tropical Tuna Commission (IATTC)
- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- International Council for the Exploration of the Sea (ICES)
- International Whaling Commission (IWC)
- North Atlantic Salmon Conservation Organization (NASCO)
- Northwest Atlantic Fisheries Organization (NAFO)
- Northeast Atlantic Fisheries Commission (NEAFC)
- Organisation for Economic Cooperation and Development (OECD)
- Secretariat of the Pacific Community (SPC)
- Southeast Asian Fisheries Development Center (SEAFDEC)
- Statistical Office of the European Communities (Commission of the EU/Eurostat)

The FAO provides the CWP Secretary as its normative work.

The CWP purpose is to:

- continually review fishery statistics requirements for research, policy-making and management;
- agree on standard concepts, definitions, classifications and methodologies for the collection and collation of fishery statistics;

- make proposals for the coordination and streamlining of statistical activities among relevant intergovernmental organizations.

The CWP has strongly facilitated improved data collection through standardized statistical reporting systems and is now looking ahead to more efficiently coordinate and exchange this data with participating organizations.

The CWP agreed concepts, definitions and classifications for all series of data considered essential for the economic/biological management of the sector. In its earlier Sessions, the CWP devoted a considerable amount of attention to concepts, definitions and classifications for fishing fleets, fishery commodities production and trade statistics, as well as statistics on the disposition of catches, employment in fisheries, food balance sheets for fish and fishery products. However, after extending its role to cover global fisheries, corresponding to the results from the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks in 1995, the emphasis shifted more towards coordinating the statistical systems of the regional fishery organizations. Commodity, trade and disposition statistics have been considered less despite the Edinburgh Conference having emphasised their importance and the fact that they can often be used for verification of catch statistics, as was stressed by the Technical Consultation on High Seas Fishing (Rome, 7-15 September 1992; paragraph 28). Although commodity, trade and disposition statistics have not recently been the subject of much consideration by the CWP, issues in relation to consumption statistics based on food balance sheets which utilise those statistics, have been addressed. Some organizations (e.g. ICCAT) are using trade data in conjunction with certification of origin to verify catch data for certain species, and NASCO has considered the value of certificates of origin in relation to the problem of fishing for salmon in international waters by non-contracting Parties.

As to aquaculture, in its earlier sessions CWP discussed specific items related to aquaculture only at the request of its members (see for instance FAO Fisheries Report n. 274 XI, Session of CWP- dealing with data to be captured by the STATLANT for ICES). However, starting in the 80's CWP has contributed to the elaboration of a definition of aquaculture and agreed a common questionnaire (FISHSTAT AQ) for the reporting of aquaculture statistics to FAO and to some of the regional fishery organizations.

CWP undertook several inquiries on the conversion factors used for the estimation of live weight from landed weight and it was involved in designing a single inquiry undertaken by FAO on recreational fisheries.

The CWP has also considered ancillary issues such as standard formats to facilitate the exchange of data using electronic media, preparation of the Handbook of Fishery Statistics which is published in English, French and Spanish, and collation by FAO of conversion factors for the estimation of live weight from landed weight. An updated web-based version of the handbook is accessible at http://www.fao.org/fi

Achievements

Since 1960 the CWP, supported by participating organizations, has served as the premier international and inter-organizational forum for agreeing on common definitions, classifications and standards for the collection of fishery statistics. The CWP has strongly facilitated improved fishery data collection through a standardized statistical reporting system, based on common procedures responding to the basic data needs of its members, thus

not only streamlining statistics collection and collation, but also reducing the burden on national fisheries statistical offices. It has provided technical advice on fishery statistical matters to participating organizations and has facilitated the publication of methodological and reference documents. In the process the CWP has shaped the statistical programmes of all participating organizations to some extent - and those of **FAO** in particular - while leaving organizations with complete autonomy in their area of responsibility.

There are however other organizations, not members of CWP, which would be interested in work on statistical standards for aquaculture. Given the mandate of CWP, such organizations have no incentive/interest to participate to CWP deliberations largely focussed on capture fisheries.

For instance a notable exclusion from CWP and related statistical debates is that of regional inland fisheries organizations. The freshwater sector, including aquaculture operations based on it, is generally under exclusive national jurisdiction (with the exception of some great lakes and rivers whose waters are shared by more than one country) and thus the deliberations of an international body like CWP seem to be less critical. Yet it has been recognized that the lack of systematic information on the production of small scale operations may lead to a gross underestimation of the contribution to food and economic output of such activities.

The Coordinating Working Party on Fishery Statistics: Its origin, role and structure, FAO Fisheries Circular. No. 903. FIDI/C903, Rome, FAO. 1995. 14 p.

Edeson, W.R. Legal aspects of the collection of fisheries data. FAO Fisheries Circular No. 953. Rome, FAO. 1999. 18p.

And information accessed at http:// www.fao.org

Appendix 2- Strategy and outline plan for improving information on status and trends of aquaculture

This document presents a strategy for improving information on aquaculture status and trends based on that developed for capture fisheries through an FAO Technical Consultation convened in March 2002 and approved by the FAO Council in 2003. The basic structure and guiding principles of the fisheries strategy are retained and selected revisions made in contents as necessary to meet the specific needs of aquaculture.

The draft strategy for aquaculture was reviewed and approved with amendments by the FAO Expert Consultation on Improving Information on Status and Trends of Aquaculture in January 2004. The present document represents the final draft of the strategy for aquaculture, which incorporates amendments suggested by the Expert Consultation.

1 INTRODUCTION AND RATIONALE

The need for aquaculture data and information collection is embedded in the Code of Conduct for Responsible Fisheries, and some data needs are further elaborated in the associated FAO Technical Guidelines. The Code recognizes that reliable and timely data are required for the competent authorities of national governments to effectively discharge their general responsibility in the promotion of sustainable aquaculture practices that are well integrated into rural, agricultural and coastal development.

The collection, analysis and presentation of reliable evidence of current achievements at the local and national levels are the basis for monitoring the structure, production and performance of the aquaculture sector, and for analyzing trends over time. These practices also contribute to the calculation of indicators that provide evidence of meaningful and sustainable impact of good policies.
In recent years the demand for reliable data and information and for reporting on aquaculture has greatly increased, driven not only by the need to formulate and monitor sound policies and development plans, but also by new information and reporting requirements of international agreements and initiatives, and by the increasing public demand for transparency and accountability.

Changing perspectives in fisheries and aquaculture management are also changing the requirements for information. Now, managers must take a wider range of issues into account in decision-making, including consideration of aquaculture within the full scope of the environment; approaching sustainability through application of the Precautionary Principle, as embodied in the CCRF; and considering information from and between all sectors to ensure transparency and the likelihood that compliance can be understood, accepted and implemented.

Though aquaculture has been practiced for centuries in some countries, management of the sector is a fairly new concern. In fact, aquaculture was recognized only recently (March 2001) as an independent economic activity by the United Nations Statistical the sector and to adapt to current demands for management information. Aquaculture statistics of many countries presently do not meet the information demands of management for sustainability, and there are a number of technical constraints in the compilation of regional and global aquaculture statistics related to standardization, completeness and reliability of data reported by some countries, and by institutional problems at the national and global levels. The need to resolve

these constraints is made more urgent by the increasing demand for information at all levels by a variety of data users.

The Working Party on Status and Trends of Fisheries of the FAO Advisory Committee on Fisheries Research (ACFR:STF), on the request of the ACFR, prepared a draft International Plan of Action (IPOA) for improving the Fishery Department's data collection and assessments of status and trends of capture fisheries, which was presented to the twenty fourth session of the Committee on Fisheries (COFI) in March 2001. The IPOA was subsequently reviewed and amended to a Strategy by a Technical Consultation convened in March 2002, on the request of COFI. The Strategy and related project profile for Improving Collection and Processing of Data and Information on the Status and Trends of Capture Fisheries were adopted by COFI during its Twenty-fifth Session, February 2003.

The COFI Sub-Committee on Aquaculture (COFI/AQ), during its First Session in April 2002, identified data collection and reporting (to improve knowledge and management of the sector) as a key priority area for future work The Sub-Committee considered information needs for aquaculture at the global level and recommended that FAO develop an approach (strategy) for improving reporting on aquaculture status and trends similar to that developed for capture fisheries, with special attention to the quality of the information on which it is based.

In follow-up to this recommendation, the FAO convened, in January 2004, an Expert Consultation on Improving Information on Status and Trends of Aquaculture, which reviewed and approved, with amendments, a draft strategy for aquaculture prepared by FAO. This document represents the final draft of the strategy which incorporates the recommendations and suggestions of the Consultation and those of the Working Group of Experts on the FAO Aquaculture Questionnaire, "FISHSTAT AQ", which immediately followed the Expert Consultation.

2 NATURE AND SCOPE

2.1 Nature of the Strategy

This Strategy has been elaborated within the framework of the Code of Conduct for Responsible Fisheries (the Code), as envisaged by Article 2 (e), and as it relates to national and regional mechanisms for cooperation to compile and exchange data (Article 7.4.7 and Article 9.2.4), and the publication and dissemination of results, as it relates to aquaculture (Article 12.3, 12.4). It is also within the remits of the Strategic Framework for FAO 2000-2015 (Chapter II. Corporate Strategies, Section E - Improving Decision-making through the Provision of Information and Assessments and Fostering of Knowledge Management for Food and Agriculture). The provisions of Article 3 of the Code apply to the interpretation and application of this document and its relationship with other instruments. All concerned Members and non-members of FAO and aquaculture entities are encouraged to support its implementation.

This Strategy applies to the assembly and dissemination of information on the status and trends of aquaculture. Data collection needs for monitoring the status and trends of aquaculture are established by existing obligations of states to report fisheries statistics to FAO under Article XI of the FAO Constitution. The Strategy proposes to significantly improve data collection and related research and provide impetus for fulfilling those that already exist. This impetus should include additional support from relevant international

organizations, whether governmental or non-governmental, and financial institutions (development partner agencies) for capacity building in developing countries. In this Strategy, the reference to states includes the European Community in matters within its competence.

2.2 Scope of the Strategy

The Strategy is global in scope and is designed to cover all aquaculture in fresh, brackish and marine waters, including all commercial and subsistence aquaculture. It addresses issues concerning national capacity for the collection, processing, analysis and dissemination of data and information; quality, completeness and scope of data and information; timeliness of data and information collection and dissemination; national and international institutional frameworks for coordination of data and information collection; and participation and transparency in the preparation of global status and trends reports.

The main focus of the Strategy is on information concerning the primary food producing sector (as opposed to supporting industries) and its contribution to national food security, including socio-economic information.

3 OBJECTIVE

The overall objective of the Strategy is to provide a framework for the improvement of knowledge and understanding of aquaculture status and trends as a basis for policymaking and management, and for sector development that is compatible with good stewardship of resources and the environment.
The Strategy will be implemented through arrangements between states, directly or through their participation of regional fishery organizations, and FAO. These arrangements should be established at various geographic scales, ranging from local, to national, to regional, and they should be linked to form a global system under the auspices of FAO. Wherever, and whenever, possible, existing organizations should be used as the basis of the arrangements.

FAO efforts to assemble and disseminate comprehensive information on the global status and trends of aquaculture (through its annual statistical yearbooks, periodic *FAO Fisheries Circulars* and the FAO Fisheries Global Information System (FIGIS)) are hindered by a number of institutional and technical constraints at the national, regional and global levels. The Strategy seeks to provide a framework for addressing these key constraints.

Consistent with Article 5 of the Code, the capacity of developing countries will be duly taken into account in implementing the Strategy. The Strategy will seek to enhance the capacity of states whose data collection systems are in a critical condition, so that they can improve sector management at the national level and fulfil existing commitments to collect aquaculture statistics, thus allowing them to more fully participate in the Strategy.

4 GUIDING PRINCIPLES

The arrangements for implementation of this Strategy should be based on the six guiding principles highlighted in the paragraphs that follow.

4.1 Sustainability of information systems

Arrangements for assembling and disseminating information on the status and trends of aquaculture should be viable in the long term. As a consequence: (a) adequate funding should be provided at the national, regional and global levels, taking into account the resources available to countries, regional aquaculture/fishery organizations/mechanisms and FAO; and (b) the programme should consider the particular needs of developing countries which may require large investments in training and capacity building, to facilitate the formulation of appropriate national programmes or strategies.

4.2 Best scientific evidence

Arrangements for assembling and disseminating information on the status and trends of aquaculture should contribute to the best scientific evidence available. Protocols for assuring the quality of scientific information should be applied wherever and whenever practicable and appropriate. Such protocols should take account of the need to consider knowledge of participants in the sector, as well as traditional knowledge.

4.3 Participation and cooperation

Arrangements for assembling and disseminating information on the status and trends of aquaculture should adopt mechanisms for inclusion of all relevant participants in the preparation, analysis and presentation of aquaculture information. Relevant participants may include, *inter alia*, government experts, producers, industry representatives and non-governmental organizations. States should, in accordance with international law, cooperate with other states in developing and maintaining such aquaculture information, as appropriate, either directly, or through appropriate intergovernmental organizations, including regional fishery organizations/mechanisms. States should provide feedback on the status and trends of aquaculture to all relevant participants.

4.4 Objectivity and transparency

Arrangements for assembling and disseminating information on the status and trends of aquaculture should contribute to providing the best scientific evidence available (paragraph 26), and to transparency, in support of Article 6.13 of the Code of Conduct, while respecting any confidentiality requirements. Uncertainty associated with status and trends information should be expressed.

4.5 Timeliness

Arrangements for assembling and disseminating information on the status and trends of aquaculture should result in information being provided in a timely manner. Specific tools should be adopted or developed to ensure this outcome.

4.6 Flexibility

Arrangements for assembling and disseminating information on the status and trends of aquaculture should be flexible enough to permit adjustments as necessary to ensure that they effectively support aquaculture policy-making and management through the provision of appropriate information.

5 REQUIRED ACTIONS

5.1 Capacity-building in developing countries

States, relevant intergovernmental and non-governmental organizations, and financial institutions, should address developing country needs for financial and technical assistance, technology transfer, training and scientific cooperation, in order to build capacity to implement cost-effective and sustainable aquaculture data collection, data processing, analysis and reporting, and exchange information. Capacity building is critical to fulfil national needs, the needs of regional aquaculture/fishery organizations, existing obligations for reporting aquaculture data to FAO, and to ensure that developing countries can more fully participate in, and benefit from, the Strategy.

States, particularly major aquaculture producers, should incorporate the collection of aquaculture statistics as an integral part of the policy-making and sector management process, both at the local and central levels.

States should, with support from development partner agencies and assistance from FAO, where necessary, enhance their capacities to collect data (including the capacity to determine data needs of target users, identify the data to be collected, and clearly define the expected output), to ensure that the coverage of aquaculture information is as complete as possible and encompasses all sectors.

States should improve national inter-agency communications and coordination to make best use of all data collection schemes to obtain aquaculture data and reduce costs, particularly with regard to socio-economic data on small scale and subsistence aquaculture, employment and similar information that is often collected by government agencies unrelated to fisheries or aquaculture. The establishment of working groups comprising aquaculture and other statisticians should be promoted.

States should cooperate through their regional fishery organizations and regional programmes, with the cooperation of FAO if necessary, to develop and adopt effective and pragmatic standards and systems for collection of aquaculture statistical data, which should be compatible with FAO systems in order to enable reliable compilation of data on aquaculture at the regional and global levels.

5.2 Global methodologies and standards

5.2.1 Addressing gaps and constraints in the FAO statistical database on aquaculture

States, particularly major aquaculture producers, with assistance from FAO and relevant regional aquaculture/fishery organizations/mechanisms, should place special emphasis on the periodic collection of information on structural aquaculture statistics to enable the design of appropriate frame surveys, in the interest of more reliable and representative statistics, and for calculating resource use indicators as needed.

States should make greater efforts to specify aquaculture production by species and not aggregate them into species groups. In some instances, preparation of local taxonomic field guides for enumerators might help improve species details in aquaculture statistics.

States should seek to reduce delays in the collection, processing, analysis and reporting of statistical data by adopting information technology tools and investing in computers.

Prolonged delays reduce data benefits in the decision-making process and may lead to poor decisions (due to dated information) and attendant loss of confidence and support for statistical systems.

FAO, in cooperation with states, regional fishery/aquaculture organizations/mechanisms and development partner agencies, should develop a standard software package for the compilation, processing and analysis of aquaculture statistics, and promote its adoption and application at the national and regional levels to ensure timely delivery of information to users. FAO should further expedite the processing and reporting of global aquaculture statistics by developing and adopting electronic tools and procedures for the collection of statistics from states.

FAO should review and revise the FAO aquaculture questionnaires as necessary to meet information needs and should improve the accompanying instructions. FAO should also seek to improve harmonization of priority terms and definitions where confusion may result in submission of incorrect information by states.

5.2.2 Data collection systems for aquaculture in rural development

States, relevant intergovernmental and non-governmental organizations, and financial institutions should recognize that many small-scale and subsistence aquaculture holdings, particularly in developing countries, are not well monitored and awareness needs to be raised on the importance of monitoring these activities. They are probably under-estimated and therefore under-represented in current aquaculture status and trends information. Consequently they are not adequately considered in the development of plans and policies for aquaculture, particularly for improving rural food security and livelihoods.

States should participate in and support the development of cost-effective methods for acquiring and validating data on small-scale and subsistence aquaculture, including rapid appraisal methodologies and other approaches for data-poor situations and participatory processes that closely associate the farmers and their organizations to the data collection schemes. Where possible and appropriate, these surveys should be integrated with agricultural surveys and surveys of small-scale fisheries.

FAO, with support from member states and development partner agencies, should address the special data collection and assessment needs for small-scale and subsistence aquaculture, including the use of meetings of experts to develop innovative approaches and guidelines.

5.2.3 Expanding the scope of information on status and trends of aquaculture

States should approach the implementation of the Code of Conduct, in particular as this relates to Article 9 (Aquaculture Development), and other articles applicable to aquaculture [e.g. Article 7.4.4 and 7.4.5 (Data Gathering and Management Advice) and Article 12.9 (Fisheries Research)], by considering ways to expand the scope of status and trends reporting to meet the responsibilities recommended therein.

States, directly or through participation in regional fisheries organizations, should consider broadening the collection of information on the status and trends of aquaculture to support further development of aquaculture management, by incorporating, *inter alia*, socio-economic, environmental and resource use considerations.

FAO should seek to include the following data in its annual questionnaire (FISHSTAT AQ):

(a) Volume of production by species by method of culture,
(b) aquatic environment and area,
(c) production in volume,
(d) production in value,
(e) area under culture,
(f) volume of water,
(g) hatchery production released to the wild,
(h) hatchery production put in controlled environment,
(i) number of farms/hatcheries,
(j) employment in full time equivalent,
(k) production by intensity level,
(l) environmental indicators ,
(m) input of fry/juveniles from the wild.

FAO, with support of Members, and with full participation of regional organizations should further address the issue of indicators of sustainable aquaculture development (ecological, social, economic and institutional), including cost-effective methods for their derivation, to facilitate management of aquaculture, resources and the environment.

Any increase in the scope of collected statistics, to be practicable, must be considered in the context of national needs and priorities, data collection costs and national capacity, as well as the trade-off between the scope of coverage and data accuracy.

5.3 Improving institutional mechanisms and procedures for aquaculture statistics and status and trends reporting

5.3.1 Coordination and scientific advice

FAO, with support of its Members, either directly or through regional aquaculture/fishery organizations/mechanisms and arrangements, should consider establishing an inter-regional Coordinating Working Party on Aquaculture Statistics (CWP-AS) with the same terms of reference as the Coordinating Working Party on Fishery Statistics (CWP-FS), i.e. to

(a) keep under continuous review the requirements for aquaculture statistics for research, policy-making and management,
(b) agree on standard concepts, definitions, classifications and methodologies for the collection and collation of aquaculture statistics, and
(c) make proposals for the coordination and stream-lining of aquaculture statistical activities amongst relevant intergovernmental organizations.

5.3.2 Participation

FAO should consider establishing an appropriate participatory mechanism for the involvement of national experts, centres of excellence and regional aquaculture/fishery organizations/mechanisms in the preparation and analysis of information on status and trends in aquaculture. Relevant participants may include, *inter alia*, government experts, producers,

industry representatives and non-governmental organizations. The mechanism would provide greater transparency, consensus building at the national, regional and global levels.

5.3.3 Oversight

FAO, with support from its Members, either directly or through regional fishery organizations, should also consider establishing a process for scientific oversight of the global reviews of aquaculture status and trends, including those prepared for the biennial State of World Fisheries and Aquaculture (SOFIA).

5.3.4 FIGIS participation, structuring and capacity building

States should support, both directly or through participation in regional fisheries organizations, the development of Fisheries Global Information System (FIGIS) by:

- providing national user requirements for outputs from and inputs to the system;
- participating in national, regional and international processes to define the protocols for information exchange, quality assurance or quality rating, and transparency provisions to be specified in partnership agreements;
- contributing timely information to FIGIS;
- facilitating a systematic synthesis of information on aquaculture status and trends from national to regional and global levels;
- participating in complementary information and communication technology initiatives aimed at improving the generation and dissemination of research-based knowledge relevant to sustainable development;
- providing FIGIS with the best scientific information available where the assurance of information quality could be established by review processes at the national or regional level;
- supporting FAO and other FIGIS partners, as appropriate, in the organization of and participation in pilot projects and workshops, to further develop and implement FIGIS, to develop training materials, and to conduct training; and
- FAO's continued development of FIGIS, using modern information and communication technology, as a partnership between FAO, regional fisheries organizations and national organizations, and other organizations that can make a positive contribution to the system.

5.3.5 Criteria and methods for ensuring information quality and security

States should participate in the development and application of criteria and methods to ensure information quality and security for the purposes of best scientific evidence, in accordance with internationally agreed standards and practices, through mechanisms for data verification, and in a manner consistent with applicable confidentiality requirements.

FAO, with support of, and participation by Members should facilitate the development of practical guidelines for quality assurance, transparency and security of aquaculture information.

5.3.6 Arrangements for the provision and exchange of information

States, directly or through their participation in regional fisheries organizations, should seek and agree on arrangements to facilitate the provision and exchange of information on the

status and trends of aquaculture with FAO, as appropriate. These arrangements should address the roles and entitlements of the partners, including in relation to information quality, transparency and confidentiality.

Working groups composed of aquaculture experts and set up by countries or regional fishery organizations that meet to assess the status and trends of aquaculture and which conduct their work according to terms of reference which specify the scope of their activities, are an important mechanism for enhancing the quality and transparency of scientific information. They can also provide important opportunities for capacity building.

States, directly or through participation in regional fishery organizations, in their respective jurisdictions and regional programmes, should formalize arrangements for working groups to analyse aquaculture data and information towards the evaluation of their status and trends. The periodicity of these working group meetings would depend on available human and financial resources and the characteristics of the aquaculture sector.

States should seek to make use of all national information systems by improving coordination and sharing of information among government agencies and integration of information collection where possible (e.g. with agricultural and artisanal fisheries surveys, agriculture census, etc.).

States and development partner agencies should work with FAO to ensure the participation of fishery experts from around the world in working groups, particularly where these working groups contribute to capacity building in developing countries. The TCDC and other FAO programmes could be used for this purpose.

5.3.7 Sustaining data collection, information on the status and trends of aquaculture

States should monitor their systems for data collection, analysis and reporting to ensure the sustainability of these systems to meet the needs of aquaculture policy-making and management and the agreed requirements of regional fishery organizations and FAO, and take corrective actions as appropriate.

FAO and development partner agencies should assist states identify minimum data requirements and frequency of collection to meet management and reporting needs, and to elaborate cost-effective methods, tools and institutional arrangements for this purpose.

6 PROMOTION AND IMPLEMENTATION MECHANISMS

6.1 General call for improving information on the status and trends of aquaculture

States, regional aquaculture/fishery organizations and international institutions should develop and implement mechanisms for the improvement of aquaculture information, the application of research to enhance the availability of best scientific evidence, and the adoption of a continuing process for the enrichment of aquaculture status and trends information to support sustainable development and management at local, regional and global levels.

6.2. The role of States

States should evaluate the actions they need to take to improve information on the status and trends of aquaculture, address these needs on a priority basis, and report on the improvements they make, as part of their biennial report to FAO on the Code of Conduct.

States should allocate adequate resources in order to ensure sustainable and timely collection, processing and dissemination of information needed to enable rational management of national resources and responsible aquaculture development. Sound national information systems are the basis of a sound global information system.

6.3 The role of regional fishery organizations

Regional fishery organizations/mechanisms, within the limits defined by their conventions and to the extent mandated by their members, should participate in the implementation of this Strategy, by providing support to their members, participating in global programmes and decisions on the development and adoption of standards and guidelines for information on the status and trends of aquaculture.

6.4 The role of FAO

FAO will, to the extent directed by its Conference, and as part of its Regular and Field Programme activities, support states and regional aquaculture/fishery organizations in the implementation of this Strategy.

FAO will, to the extent directed by its Conference, support member states' implementation of this Strategy, through in-country technical assistance projects using Regular Programme funds and by use of extra-budgetary funds made available to the Organization for this purpose. For more sustainable management of aquaculture development and conservation of resources and the environment, FAO should prepare a specific programme for establishing effective and sustainable systems for data collection, processing and analysis in developing countries, including in particular the least developed among them.

FAO will report biennially, through COFI/AQ and COFI on the state of progress in the implementation of the Strategy.

6.5 Role of development partner agencies and non-governmental organizations

International and national development partner agencies should give priority to the provision of financial and technical assistance to developing countries, in particular the least-developed among them and small-island developing states, and countries whose data collection systems are in a critical condition, for capacity building and information system development, as necessary for implementation of this Strategy.

Non-governmental organizations (national, regional and international) concerned with aquaculture, fish-farmers and the aquatic environment and research into these, should encourage implementation of the Strategy through appropriate support, information methods development and capacity building and participation.

NOTE: The Strategy was endorsed at the 3rd Session of the COFI/AQ (in 2006) and by the 27th Session of COFI (in 2007) cf.

“The Committee underscored the need for better information and data on aquaculture in support of the sustainable development of the sector and endorsed the draft strategy and Outline Plan for Improving Information on Status and Trends of Aquaculture. It also endorsed the concept of establishing a Coordinating Working Party on Aquaculture Statistics and called for speedy implementation of the Strategy”.

Appendix 3- The COFI Sub-Committee on Aquaculture - COFI/AQ

Established by the Committee on Fisheries (COFI) at its Twenty-fourth Session in 2001 in accordance with Rule XXX-10 of the General Rules of the Organization and Rule VII of the COFI Rules of Procedure.

Membership:
Open to all Member Nations of the Organization. Non-Member states of the Organization that are members of the United Nations, or any of its Specialized Agencies or the International Atomic Energy Agency, may be admitted by the Council of the Organization to membership in the Sub-Committee.

First Session:
18-22 April 2002, Beijing, China P.R.

Second Session
3-8 August 2003, Trondheim, Norway

Third Session
September 2006, New Delhi, India

Fourth Session (planned)
October 2008, Puerto Varas, Chile

Fifth Session (planned)
2010, Thailand

Main Functions:
The Terms of Reference of the Sub-Committee on Aquaculture, based on the recommendations of the Expert Consultation (February 2000), are as follows:

"The Sub-Committee shall provide a forum for consultation and discussion on aquaculture and advise COFI on technical and policy matters related to aquaculture and on the work to be performed by the Organization in the subject matter field of aquaculture. In particular the Sub-Committee shall:

1. identify and discuss major issues and trends in global aquaculture development;
2. determine those issues and trends of international importance requiring action to increase the sustainable contribution of aquaculture to food security, economic development and poverty alleviation;
3. recommend international action to address aquaculture development needs and, in this regard:
    1. to advise on mechanisms to prepare, facilitate and implement action programmes identified, as well as on the expected contribution of partners;
    2. to advise on the liaison with other relevant groups and organizations with a view to promoting harmonization and endorsing policies and actions, as appropriate;

3. to advise on the strengthening of international collaboration to assist developing countries in the implementation of the Code of Conduct for Responsible Fisheries.

4. advise on the preparation of technical reviews and of issues and trends of international significance;
5. address any specific matters relating to aquaculture referred to it by its Members, the Committee on Fisheries or the Director-General of FAO".

Appendix 4- Report of CWP 22nd Session (27 February- 2 March 2007) on AQUACULTURE STATISTICS (Agenda Item 7)

12. FAO introduced the Agenda Sub-item on *General aquaculture statistics and the need for defining standards and cooperation*. 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. 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. FAO envisaged that this information would soon be available on the FAO website and hoped that the dissemination of these data would stimulate better reporting by FAO member countries. It was noted that these data elements are consistent with those requested by Eurostat, SEAFDEC and the GFCM.

13. FAO reported that the COFI Sub-Committee on Aquaculture held in New Delhi in 2006 endorsed the establishment of a CWP-like body for aquaculture statistics as included in the Strategy for Improving Status and Trends Reporting for Aquaculture which was developed by the Expert Consultation on Status and Trends Reporting for Aquaculture in 2004. FAO sought advice from CWP-22 on the possible scope, participation and funding of such an rrangement.

14. The meeting welcomed the initiative taken by the aquaculture experts. The extent of interest in aquaculture statistics varied largely among CWP members. While several members are directly involved in aquaculture statistics, some have no interest and others have only a limited interest in the specific issue of tuna farming. On the other hand, there are other organisations, not members of CWP, which would be interested in work on statistical standards for aquaculture.

15. However, the meeting noted that many aspects of data needs for fish and fishery products are shared by the capture fishery and aquaculture sub-sectors and consistency of standards and concepts should be maintained. While the meeting encouraged the aquaculture experts to continue their efforts to establish a CWP-like body for aquaculture, the CWP recommended that FAO and the Secretariat ensure close collaboration and monitoring of this development and regularly report to the CWP. The appropriate form of the relationship between the current CWP and a CWP-like body for aquaculture should be discussed at the later stage.

16. Eurostat presented the status of their revision of legislation on aquaculture statistics. The Commission adopted a new proposal of Regulation on Aquaculture at the end of the year 2006. This proposal has been submitted to the co-decision procedure with the European Parliament and the European Council. The first meeting of the ad hoc Working Group of the Council will take place on 16 April 2007 and the new Regulation could enter into force during 2007. The main differences with the former regulation No 788/96 include:

- Annual data submission on the production **and the value** of the production of aquaculture with breakdown by **species, environment and technology;**
- Annual data submission on **capture-based aquaculture** (the volume and value of fishery products taken from the wild and placed in aquaculture units for on-rearing to a marketable state);
- Annual data submission on the **production of hatcheries** supplying material (e.g. eggs or young fish) for release to a controlled environment or to the wild; and

• Triennial data submission on the **structure** of the aquaculture holdings giving information on the technology used and the size of the holdings.

FAO fishing areas are included as requirements in the reporting guidelines. The full proposal can be found on the Eurostat CIRCA site and Eurostat would be pleased to supply access information to interested CWP-22 participants.

17. ICCAT informed that the "*Guidelines on sustainable bluefin tuna farming in the Mediterranean*" had been finalised and published as an Annex in FAO Fisheries Report No 79 on the 3rd meeting of "the ad hoc GFCM/ICCAT Working Group on Sustainable Bluefin Tuna Farming/Fattening in the Mediterranean", held in Rome on 16-18 March 2005. While recognising the inherent reporting difficulties, the guidelines reconfirms earlier recommendations of CWP that the final harvested weight should be separated according to the original capture fisheries component and the aquaculture component representing weight gained in captivity.

18. The meeting noted the difficulties in separating the capture fisheries component and aquaculture components of tuna cage culture. The methods actually used for estimating input to cage were explained. IATTC uses information from observers as the basis for estimates of tuna caught for cage culture and CCSBT reported that in Australia the number of southern bluefin tuna is counted from a video camera recording of the transfer of fish from tow cages to static farm cages. Australia is also investigating the use of a stereo video camera to record the size of each fish on transfer. GFCM suggested to use well known biological parameters, such as growth rates and feed conversion ratios, to estimate the biomass entered into the cages at the time of capture, knowing the biomass at harvest, period of fattening and the average size of individual fish caught. It remains essential to communicate the existing guidelines as well as to review and update them as appropriate and the meeting agreed this issue to be kept in agenda for the next session. It was noted that the capture-based aquaculture extends to species other than tuna and specific guidelines may be needed for other fishing activities.