

FAO Fisheries Department
Information Strategy: Supporting
Informed Decisions and Actions

18 September 2000

1. FI'S Goal on Information

1.1 FI's Mission

Article 1 of the Basic Text of the Food and Agriculture Organization of the United Nations (FAO) affirms that FAO has a global mandate to promote and, where appropriate, recommend national and international action with respect to conservation, development and research in the fields of aquaculture and fisheries. The article also affirms that FAO's mandate includes analysis, interpretation and dissemination of information.

Accordingly, **the mission of the Fisheries Department (FI) is to facilitate and secure the long-term sustainable development and utilization of the world's fisheries and aquaculture.**

1.2 FI's Medium-Term Strategic Objectives

In accomplishing its mission, the Fisheries Department plans and implements a variety of programmes in the fields of aquaculture and fisheries to ensure sustainable contribution of aquaculture and fisheries to food security, nutritional requirements, and livelihood of rural and coastal communities. The three medium-term strategic objectives of the Department are:

- ◆ **Promotion of Responsible Fisheries Sector Management at the Global, Regional and National Levels**, with priority given to the implementation of the Code of Conduct for Responsible Fisheries, and particular attention paid to the problem of excess capacity and the provision of advice for the strengthening of Regional Fisheries Bodies. The Department continues to be fully involved in the implementation of important international fisheries instruments.
- ◆ **Promotion of Increased Contribution of Responsible Fisheries and Aquaculture to World Food Supplies and Food Security**. Following on the outcome of the Kyoto Conference on the Sustainable Contribution of Fisheries to Food Security, the Department focuses on reduction of waste in fisheries (particularly discards) and aquaculture (including its promotion in the context of FAO's Special Programme for Food Security).
- ◆ **Global Monitoring and Strategic Analysis of Fisheries**, with priority given to development of databases and analysis of information using modern information systems (e.g. CD-ROM, GIS), and contributing *inter alia* to the publication of the State of World Fisheries and Aquaculture (SOFIA) on a biennial basis and the UN Digital Atlas of the Oceans.

1.3 FI's Goals on Information

In pursuit of the mandates and mission of FAO, FI has established the goals of developing a reliable, comprehensive, integrated information base on fisheries and aquaculture, and facilitating international collaboration and promoting further the role of FAO as an international forum. The FI's functional goals on information are:

1. To develop further the role of FI as a knowledge source and sharing mode for fisheries and aquaculture. Specifically, it aims:
 - ◆ To improve FI data and information collation from all reliable sources, including national agencies, IGOs, NGOs, and apply adequate quality control;
 - ◆ To prepare objective reviews, analysis, prognoses and strategic advice as a source of knowledge;
 - ◆ To exchange information and knowledge with key non-FAO sources; and
 - ◆ To provide all users access to unbiased and integrated FAO information and knowledge of high quality.
2. To improve assistance to member countries and fishery bodies in their efforts to gather and provide reliable information in conformity with international norms and standards.

Since the adoption of Agenda 21 of UNCED in 1992, it is well recognized that effective and efficient application and utilization of information are means of achieving the goals of sustainable development. Sustainable fisheries and aquaculture require informed decisions and actions at all levels, from policy planning to individual fishers and fishfarmers as well as stakeholders and consumers. Decision-making based on the "best scientific evidence" require reliable, relevant and timely information.

1.4 FI's Target Clients

FAO Constitution states that the primary clients of FAO/FI are the Member governments that are responsible for the management and utilization of fisheries resources, and contribution of aquaculture and fisheries to food security, nutritional requirements and betterment of livelihood of the coastal communities. Given the limited resources, it is not possible for FAO/FI to address problems of local fishers and fishfarmers and the broad ranges of general public directly. FI addresses concerns and problems of fishers, fishfarmers and other stakeholders through the FAO/FI's primary clients, i.e., the Member governments and relevant organizations. The primary clients include:

- ◆ The Member Governments, specifically government policy- and decision-makers who are responsible for establishment of fishery and aquaculture policies and management decisions;
- ◆ Professionals in government ministries who advise and recommend fishery and aquaculture policies and management options to senior officials;
- ◆ International organizations and regional fishery bodies that are concerned with development and management of sustainable fisheries and aquaculture;
- ◆ Technical experts such as researchers, economists, policy analysts and other technical personnel who work in the fields of fisheries and aquaculture;
- ◆ Non-governmental organizations that are concerned with the management and development of responsible fisheries and aquaculture; and
- ◆ Educators and media specialists who are interested in the fields of the FI programmes.

Depth and breadth of data and information required by the FI's clients differ somewhat depending on their job functions. To be usable, data and information must be analyzed in the context of user needs, and packaged and presented in forms and media that are more appropriate for each target client group. FI's information programme aims to meet information needs of the target clients.

2. Objectives of FI's Information Strategy

2.1 Requirements for integrated and timely data and information

One of the reasons for slow pace of actions on Agenda 21 of UNCED and the international fisheries instruments is the lack of integrated, reliable and timely data and information on the status and trends of fisheries and aquaculture at global, regional and national levels. Lack of a reliable and timely knowledge base costs the world economically and socially due to continued inadequate and suboptimal management and utilization of aquatic and fishery resources.

Several internal and external movements affect the operations of FI. There are growing concerns about management and development of fisheries and aquaculture. As the demands for fish and aquatic products increase faster than supplies, and the capacity of aquaculture and fishery resources to sustain the level of exploitation deteriorates, actions for responsible and sustainable fisheries and aquaculture become evermore urgent. The governments are urged to pay increased attention to management of aquaculture and fisheries, and strengthen decision-making and management capacity. In view of the need for new approaches to aquaculture and fisheries management that incorporates conservation and environmental considerations, various international fisheries instruments (e.g., UNCLOS, Compliance Agreement, Code of Conduct for Responsible Fisheries and International Plan of Actions) have been adopted and developed. These international fishery instruments stress the necessity of compilation, exchange and dissemination of reliable and timely data and information, so that management decisions can be made based on scientific or best available evidence.

There is an urgent need to organize the scattered but huge volume of the existing data and information into integrated databases that can be accessible to many and to add value to the data by analyzing and integrating them in the context of the management problems that the aquaculture and fisheries sectors have to address. For instance, the Twenty-fourth FAO Regional Conference for Asia and the Pacific held in Myanmar, 20-24 April 1998 highlight the need for information analysis in the context of policy issues and management problems. Key recommendations of the Conference¹ included (a) harmonization of national fishery policies with view to attaining the sustainability of aquatic and fishery resources, and (b) translation of research results into effective management options for the region.

¹ Report of Twenty-fourth FAO Regional Conference for Asia and the Pacific, Yangon, Myanmar, 20-24 April 1998. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. APRC/98/REP, 42pp.

Furthermore, the First Session of the Advisory Committee on Fisheries Research held in Rome, 25-28 November 1997 pointed out that there is a high demand for information from policy makers, environmentalists who are increasingly concerned about aquaculture and fisheries. The Committee also noted that current aquaculture and fishery status and trends reporting relied heavily on traditional production and trade statistics, where "there is a critical need for data relevant to fleet capacity, participation in fisheries, economic performance and distribution".

Aquaculture and fisheries sectors had a credibility problem. Lack of objective and integrated information resulted in inconsistent conclusions on the status and trends of world aquaculture and fisheries by different organizations. Management advice and interventions that are not based on objective and reliable information are not credible. Awareness on the issues and problems in aquaculture and fisheries management can be raised by presenting objective and reliable information on the status and trends in health of aquatic resources and rate of utilization, and by highlighting where and when thresholds are approached.

Compilation and collation of data and statistics from various sources and many countries are tremendous undertaking. In spite of many years of collaborative efforts by FAO/FI and related organizations in establishing international norms and standards for compilation of fishery data and information², there is a need for further harmonization and standardization of methodologies for data and information handling and promote use of internationally agreed and/or compatible methodologies. This is needed to facilitate exchange of data and information among related organizations and programmes, and ensure meaningful integration and analysis of data and information compiled, thus furthering their utility.

There is an indication that FI's data and information products are underutilized by the FAO/FI's primary clients and in some cases, the information products do not reach to the target clients. In the past, FI operated without a departmental information policy that guides development and implementation of a coherent information programme. With the absence of the departmental information policy, there was lack of definition of the primary clients of FI. Because of the past development and management practices that favored technological solutions for the fisheries and aquaculture management problems, scientific and technical experts in the developed regions of the world have been the main users of the FI data and information services. Consequently, the active users have been misunderstood as the primary clients of FI. A good majority of the primary clients of FI received "passive and static" information services.

Meanwhile, FAO has taken initiatives to promote a "new" institutional image as a global agency mandated to promote sustainable food production and availability, and a global knowledge base on agriculture, fisheries and forestry. Efforts were made to systematize many activities that have grown out without coherent plans and redefine the target clients and programme priorities. To improve efficiency and effectiveness, some functions are decentralized and some functions are consolidated. To enhance the effectiveness and impact of FAO's communication and information activities, WAICENT (World Agricultural Information Centre) and the Corporate Communication Policy and Strategy have been implemented.

² In this document, fishery data and information means data and information for both culture and capture fisheries.

Needless to say, the FI's operating environment is changing rapidly, particularly with respect to its information activities. To meet the current and future challenges for better information, FI has taken various initiatives to ensure systematic and coherent approaches in planning and managing the departmental activities relating to compilation, analysis and dissemination of data and information.

2.2 Objectives of FI's information strategy

The principal role of FAO in relation to fisheries is to advise and promote national and international actions for sustainable availability of fish as food for all. Accomplishment of this role requires FI to have a sound knowledge base on national and regional aquaculture and fisheries requirements and their capacities to meet such requirements, and regional and global concerns and issues, as well as the capacity of aquaculture and fisheries resources to sustain the demands placed on them.

Achievement of the mission of FI depends on how effectively and efficiently the Department compiles and collates fishery data and information; and analyzes and integrates the data and information compiled; generate new information products that are relevant and usable; and channel and disseminates the information products to the FI's clients. Therefore, effectiveness of the FI programmes can be measured by the efficiency, relevancy and utility of the information activities of the Department.

The purpose of this strategy is to give a focus to the information activities of the Department, i.e., to facilitate coherent and coordinated approaches to various departmental activities that relate to compilation, analysis and dissemination of fishery data and information. To meet the current and emerging demands for improved information services, particularly to support formulation and implementation of fisheries and aquaculture policies and management interventions, FI has made a commitment to harmonize and integrate various information initiatives of the Department that grew out without careful coordination and planning, and improve flow of data and information compiled by FAO/FI.

2.3 FI's Strategic Partners

In fulfillment of its mission, FI cooperates and collaborates with a diverse range of national, regional and international institutions and organizations, including civil society organizations. In fact, FI information programme cannot function without cooperation and collaboration with its strategic partners. The strategic partners compile and share data and information, collaborate in the establishment of internationally agreed norms and methodologies for data and information handling, share their resources and expertise, and work toward to improved accessibility and availability of accurate, reliable and timely fishery data and information. FI's strategic partners fall into five broad categories:

- ♦ *National aquaculture and fishery data and information programmes* - They are the main partners as one of the key operating principles of the FI information programme has been that the member countries will ensure availability of reliable and timely fishery data and information.

- ◆ ***International and Regional fishery bodies and organizations*** - They compile, analyze and share data and information in the areas of their competence. They are one of the key users of data and information compiled by FI, as well as providers of data and information. They also collaborate in streamlining statistical activities of the organizations through harmonization of methodologies for data compilation.
- ◆ ***Peer institutions for advanced fishery research*** - They provide complementary skills and expertise.
- ◆ ***Partners in capacity building*** - They are the funding and development agencies that collaborate with FI in development of tools and methodologies for data and information handling and provision of assistance for provision of tools and methodologies to national programmes, thus facilitating capacity building.
- ◆ ***Private sector organizations*** - They are partners in information compilation and dissemination.

FI will continue to cooperate and, when it is necessary, strengthen collaborative relationships with the strategic partners, particularly with the national programmes and international and regional fishery bodies and organizations, as well as benefiting from the knowledge and experiences of the FAO regional offices and country representatives. In collaboration and cooperation with these partners, FI strive for improved accessibility and availability of reliable, timely and usable data and information.

2.4 FI's Comparative Advantages

Although there are international and regional organizations that are concerned with compilation of data and information on specific species, specific aspects of fisheries or specific geographical areas, FAO/FI is the only organization that compiles and analyzes basic fishery data and information globally, and monitors global fisheries and aquaculture productions, utilization and management, emphasizing sustainable development and utilization of aquatic and fisheries resources and ensuring aquaculture and fisheries contribution to food security.

FI has several comparative advantages in provision of data and information services in the fields of fisheries and aquaculture. In particular, FAO/FI has:

- ◆ Clearly stated mandates;
- ◆ Established organizational and coordination mechanisms;
- ◆ Internationally-agreed norms and standards for fishery and aquaculture data and information handling;
- ◆ Global databases on fisheries and aquaculture;
- ◆ Experiences and expertise in collation, compilation, analysis and interpretation of data and information on fisheries and aquaculture; and
- ◆ International recognition.

Over the past 50 years, FI has been providing basic data and information that are required for monitoring status and trends of global aquaculture and fisheries, assessing conservation and management practices, and monitoring implementation of the various international fishery agreements and arrangements. Working closely with its strategic partners, FI takes actions to harmonize methodologies for handling fisheries data and information and promotes use of

internationally agreed or compatible methodologies. FI serves as a Secretariat for ASFA (Aquatic Sciences and Fisheries Abstracts) which is produced through the support of four United Nations agencies (FAO, IOC, UN-DOALOS, UNEP) and a network of 32 national and international partners. FI analyzes data and information, highlights status and trends of global fisheries and aquaculture, prepares various management and policy guidelines and provides policy and technical advice. FI also provides technical assistance to the national programmes to strengthen their capacities in management and analysis of fishery data and information and provision of data and information to FAO/FI according to internationally agreed norms and standards.

Accordingly, the twenty-second session of COFI³ noted that the compilation, analysis and dissemination of information on the world fisheries and aquaculture are the core activities of FI. Similarly, the twenty-first session of COFI recognized the FAO/FI's unique and essential role as a centre for the collection and analysis of world fisheries data⁴.

3. ACTIONS FOR IMPROVED INFORMATION SUPPORT

The existing information activities of the Department such as compilation and dissemination of basic statistics on fisheries; global and regional analysis of status and trends of aquaculture and fisheries; highlights on international fisheries agreements; global and regional concerns on aquaculture and fisheries, including press release and fact sheets; compilation and dissemination of research information through the ASFA partnership; integration of databases and streamlining flow of data and information through implementation of FIGIS⁵ (Fisheries Global Information System) Project and the information services provided by the Fishery Branch Library, will be continued.

Our approach for enhancing the effectiveness and efficiency of the existing information initiatives and paving the future directions of FI's information is to establish departmental information policy; assess and monitor information needs of the target clients; promote development and establishment of internationally acceptable information handling methodologies and tools; and provide proactive and targeted information services. Specific strategic responses listed under each of the FI's information goals cover both the tasks that the Department will carry out to address information needs of the primary clients and the ways in which the Department will carry out the tasks. The strategic responses, which are closely interrelated, give particular attention to the fact that information programme must be targeted and need-driven, and the application of the rapidly advancing information technology.

³ FAO. The Report of Twenty-second Session of the Committee of Fisheries. Rome, 17-20 March 1997. FAO. Fisheries Report. No. 562. FAO, Rome. 1997.

⁴ FAO. Report of the twenty-second session of the Committee on Fisheries. Rome, 10-13 March 1995.

⁵ Fisheries Global Information System (FIGIS) is a 5-year project to transform the existing systems of databases and information systems into an integrated world-wide system of information of aquaculture and fishery resources and production systems. FIGIS project became operational in January 1999.

Functional Goal 1: To develop further the role of FI as a knowledge source and sharing mode for fisheries and aquaculture

Issues of information cut across all programmes and activities of FI. A strategy to achieve this functional goal requires attention to positioning of FI to meet current and emerging challenges for better data and information, and development and implementation of a coherent information programme that is designed to serve information needs of the target clients. A set of interrelated principles, guidelines, regulations and procedures is essential to facilitate development of a coherent, rational and need-driven information programme.

3.1 Establishment of the FI information policy

A clear policy framework is a prerequisite to formulation of holistic and coherent programme and coordination and harmonization of information related activities of the Department. Taking into account the mandate and missions of FAO, the departmental goals and objectives, and the related functions and policies of other departments, the FI information policy will outline the programme missions, goals and objectives, target clients and beneficiaries, guiding principles, and criteria and procedures for decision making, as well as collaborators and coordination mechanisms, including their authorities and responsibilities. The FI information policy will be reviewed from time to time, particularly when there is a major policy shift within FAO and/or FI.

3.2 Assessing and monitoring data and information needs of FI's clients

FI information programme will be need-driven. Systematic assessment and monitoring of information needs of the FI clients are fundamental to the formulation of a need-driven programme. In collaboration with the FAO regional offices, assessment of information needs will be carried out, using a common methodology and coordination facilitated by the headquarters. The need assessment will cover such aspects as the sources of data and information being used; and information seeking and using behaviors of the FI clients, including the active users, and potential and non-users; effectiveness of FI information programme and issues in effective and efficient compilation and dissemination of fishery data and information. Additionally, fishery data and information programmes and services of the related international organizations and regional fishery bodies will be reviewed in the context of the information needs of the FAO/FI's clients, thus identifying gaps in data and information services, as well as FI's comparative advantages. Outcome of such assessment will be used to guide the development and refinement of the FI information programme, thus preventing ad hoc and reactive approaches in the programme formulation and delivery.

3.3 Establishing and strengthening feedback mechanisms

Feedback on FAO/FI information services will be sought through both formal and informal channels such as regular contacts with the FI clients and the cooperating national, regional and international fishery information programmes; simple survey seeking feedback on usefulness of FI information products and services; monitoring discussions and

recommendations of various fishery meetings; and monitoring inquiries received and/or organizing special meetings on fishery data and information.

FI will also consider utilization of such mechanism as *an international advisory group on fishery information*. An advisory group on fishery information should provide advise on the directions of the FI information programme, including feedback on the effectiveness of the programme effectiveness, and act as a support group that promotes global cooperation and coordination.

The actions outlined above are prerequisites to enhancing effectiveness and efficiency of the FI information programme and positioning FI as a global data and information source on aquaculture and fisheries. Once these basic steps are taken, the tasks outlined below can be undertaken in a manner that is consistent with the FI's objectives and policies and needs of FI's clients, thus pulling available expertise and resources together for the common purposes.

Specific Goal 1: To improve FI data and information collation

There is increasing pressure to improve the methods and mechanisms for collection of fishery data and information in response to global concerns over sustainable management and development of fisheries and aquaculture. In spite of many years of efforts and experiences, collection of accurate, reliable and relevant fishery data and information in a timely manner remains as one of the main challenges. Furthermore, utility of data and information compiled is undermined due to fragmented, dispersed, uncoordinated and/or incompatible handling and organization.

3.4 Integrating and harmonizing methodologies and dispersed data and information

To enhance accessibility, availability and utility of the data and information compiled by FI, the independent and dispersed databases in the department are being integrated, both physically and functionally whenever it is appropriate, through FIGIS. Consolidation and harmonization of the existing databases of the Department improves not only their accessibility and availability, but also their utility and reduce unnecessary duplication of efforts. In developing FIGIS, special attention has been given to the following aspects:

- ◆ Harmonization of data and information handling methods, including definitions, classifications and nomenclature;
- ◆ Consolidation and integration of database functions, systems and tools, thus streamlining flow of data and information;
- ◆ Development of policy-based information system;
- ◆ Consistency and compatibility with the FAO-wide systems and tools;
- ◆ Equitable accessibility and availability; and
- ◆ Determination of databases that are essential and should be maintained and/or developed further, including FAO's comparative advantages in maintaining databases.

FIGIS is a means to enable information compilation and dissemination. FIGIS, in the long-term, will enable information sharing and exchange in all the diversity. We are seeking inputs of a wide range of potential partners of FIGIS to realize the value of FIGIS as an up-

to-date, high quality, monitoring system on the status and trends of world aquaculture and fisheries.

3.5 Developing and improving data and information compilation methods and tools

FI continually explores a possibility for further simplification of collecting and reporting methods and procedures for routine fishery statistics. For example, simplification of forms; further clarification and harmonization of definition and data elements; development and provision of standard tools and methods that can be adopted for national data compilation (e.g., ARTFISH family); and easy data submission or transmission (e.g., use of automated survey form or electronic communication methods) are some of the areas that will be further examined.

In coordinating and streamlining statistical reporting activities both at national, regional and international levels, FI will continue to work through the Coordinating Working Party on Fishery Statistics (CWP) and relevant working parties of regional fishery organizations. An example of the recent work is development of guidelines for the routine collection of capture fishery information⁶ that recommends methods for the development of data collection strategies and methods, and data management and information system planning and implementation. Furthermore, such consultation as the SEAFDEC-FAO Ad Hoc Expert Consultation on Variables and Terminology for Aquaculture Monitoring in Asia, held in Bangkok, Thailand, 13-16 September 1999, could lead to more harmonized approaches to data collection both on national, regional and international levels. It is expected that these activities will provide some of the key guidelines to enable the development and adoption of internationally agreed standards that are now being demanded for management of fishery data and information.

3.6 Improving timeliness, accuracy and reliability of data and information

FAO/FI relies on the member countries for the provision of accurate and reliable fishery data and statistics in a timely manner. That is, the data supplied to FAO/FI are the country data and as such their quality is primarily a national responsibility. Therefore, improvement of timeliness, accuracy and reliability of the data and information compiled by FI depends on such factors as:

- ◆ Cooperation and collaboration of the national fishery data and information programmes;
- ◆ Willingness of the Member countries to share and provide fishery data and information; and
- ◆ National capacity to collect and compile accurate, reliable and timely fishery data and information.

To identify and resolve constraints of the national programmes in providing accurate, reliable and timely fishery data and information, FI will maintain dynamic working relationships with

⁶ FAO. Guidelines for the routine collection of capture fishery data. Prepared at the FAO/DANIDA Expert Consultation. Bangkok, Thailand, 18-30 May 1998. FAO Fisheries Technical Paper. No. 382. Rome, FAO. 1999. 113p.

the national programmes through regular contacts, including periodic consultation meetings among the managers of the national programmes and utilizing such mechanisms as meetings of working parties of regional fishery organizations.

FI will continue to work toward to establishment and provision of internationally agreed data and information compilation methods and tools that are compatible and comparable with the national methodologies, and streamlining of reporting procedures to assist the national programmes to meet their obligations. FI will also continue to provide technical assistance to the national programmes in assessing data needs and improving data quality (see the section on national and regional capacity improvement).

In future, efforts will be made in promoting use of common and compatible aquaculture and fishery statistics survey forms by international organizations and regional fishery bodies. Such a move will help to reduce the time and efforts spent by the national programmes in responding to the requests made by many regional and international organizations for similar data and statistics. It should be noted that FIGIS, when it is fully functional, will include a module that will allow the member countries to update their own data and statistics which they wish to share with FI and other partners.

3.7 Filling in data and information gaps

Poor knowledge base on aquaculture and fisheries socioeconomics and infrastructure has undermined FI's ability to monitor, analyze and interpret biological and production data and statistics in a form that is useful for policy- and decision-making. Special efforts will be made to compile and disseminate data and information on economics, infrastructures, policies, legislation and regulations, and on-going programmes and projects. Information on these areas is a prerequisite for formulation of coordinated policies and management interventions that are fundamental for conservation and management of aquatic and fisheries resources. Furthermore, improved availability of infrastructure information will facilitate enhanced coordination and linkages between related agencies and programmes, thus minimizing unnecessary duplication of efforts and inconsistency in management interventions.

In view of their mandates and functions, FI will collaborate with the FAO regional offices, regional fishery bodies and other relevant organizations for improvement of availability and accessibility of fishery socioeconomic and infrastructure information. For example, FI collaborate with SIFAR (Supporting Unit for International Fisheries and Aquatic Research) to enhance accessibility and availability of information necessary for identification of more relevant research and formulation of more effective research policy, including coordination of donor supports for aquaculture and fishery research. FI will accelerate its efforts to mobilize global initiatives to fill in data and information gaps in fishery socioeconomics.

Specific Goal 2: To prepare objective reviews, analysis, prognoses, and strategic advice

Compilation and collation of data and information are not an end by themselves. To be useful, data and information compiled must be analyzed and interpreted in the context of the issues and problems in hand, and be presented in a form that is usable by their users.

3.8 Analyzing and synthesizing in the context of the needs of the target clients

While FI's focus on data and information analysis is likely to continue to be on global normative themes, more attention will be given to the regional and national fishery policy and management issues. In view of the needs expressed by the member governments and the directions given by ACFR in translating fishery status and trends reports into actions at all levels, future analysis of data and information will give a priority to generation of information products that can be used by the member countries in formulating and implementing appropriate management policies and strategies, thus ensuring sustainable contribution of fisheries to food security, nutritional requirements, and generation of income and employment opportunities.

Information presented should be usable both in contents and presentation, removing possible professional and communication barriers. It is known that policy-makers have to make decisions with or without thoroughly analyzed information and with or without accurate data. Any analysis or information that can help them to make better decisions will clearly be beneficial. Also, it is known that policy- and decision-makers at high level has limited time to digest information. Attention will be given to the fact that policy- and decision-makers often requires a broad range of analyzed information that encapsulates issues and causes, and presents options for management policies and interventions, including potential impacts of suggested interventions under a given socioeconomic, political and cultural circumstance. Efforts will be made that the information provided to policy-makers and managers is appropriately presented and timely, both in the sense of predicting what could happen if certain policy interventions are changed and in the sense that it is what the policy-maker needs to know at a given time.

It should be noted that analysis and synthesis of data and information in the context of policy and management issues and problems will help not only to bridge the communication gap between the scientific and technical community and the policy- and decision-making bodies, but also facilitate policy- and decision-making based on the best available scientific evidences and knowledge. This approach will also facilitate the functional integration and cooperation among related units/divisions within FAO as well as other related bodies such as regional fishery bodies.

Tasks that the national governments have to undertake to implement various international fisheries instruments are substantial. In order to facilitate implementation of various international fisheries instruments, the guidelines for implementation of the international fishery instruments, as well as potential impacts and implications of the international fishery instruments on specific fisheries and on the regional and national fisheries, will be produced and disseminated. Attention will be given to preparation of case studies of management options and series of guidelines on characteristics and expected performances of different fishing and aquaculture systems, and methodological guidelines.

Additionally, to maximize multiplier effects and benefits from past experiences in else where, management experiences with analysis of the causes of failures and successes, including lessons learned, will be compiled and disseminated.

Similarly, highlights of emerging fishery management issues, new information products and services and outcomes of various international fishery meetings will be regularly compiled and disseminated utilizing appropriate communication media, particularly through news media and the FAO/FI web site.

FAO regional offices and regional fishery bodies will be encouraged to prepare regional and national fishery fact sheets with highlights of the issues requiring management attention. They may also produce geographically targeted information materials or repackage information produced by the headquarters in the context of needs of their region. Such service demonstrates importance of accurate and reliable fishery data and statistics, while highlighting the gaps in and quality of the national fishery data and statistics.

Specific Goal 3: To exchange information and knowledge

No single information programme can be self-sufficient. Cooperative and coordinated approach in information compilation, analysis, synthesis and dissemination among the related programmes and organizations help to maximize mutual benefits and reduce unnecessary duplication of efforts. It also helps users by improving accessibility and availability of related data and information.

3.9 Promoting shared responsibility

In view of FAO's decentralized structure, special attention will be paid to the need for organization-wide communication and consultation, both horizontally and vertically. In the short-term, further collaborative actions with the FAO regional offices, regional fishery bodies and country representatives are foreseen in the following areas:

- ◆ Facilitating contacts with national and regional agencies that are responsible for compilation and dissemination of fishery statistics and information;
- ◆ Updating FI's mailing list for their perspective regions and identification of potential collaborators and partners;
- ◆ Assessment and monitoring of national and regional fishery issues and requirements as well as national and regional needs for fishery data and information;
- ◆ Analysis, interpretation and packaging of data and information in the context of national and regional issues and requirements;
- ◆ Coordination of regional initiatives on compilation, exchange and dissemination of fishery data and information, including regional fishery information networking; and
- ◆ Provision of feedback and identification of opportunities for further interventions by FI.

FAO/HQ will continue to provide technical expertise and facilitate global coordination, while sharing responsibilities, authorities and resources with the regional offices and regional fisheries bodies.

To ensure benefits of multiplier effects, collaboration and cooperation among the FAO regional offices and regional fishery bodies will also be encouraged. Although regional and national aquaculture and fishery requirements may differ, lessons in one region would be

invaluable to other regions. When it is appropriate, interregional cooperation in exchange of fishery data and information will be facilitated, particularly in technology transfer and the South-South cooperation.

3.10 Promotion of division of labor, specialization and cooperation

Many organizations at all levels are involved in collection and compilation of fishery data and information. Compilation and collection of data and information are costly and time-consuming undertaking, and information resources should be shared. In view of the FAO's mandate and mission, FI will continue to take an initiative in reviewing fishery data and statistics that are required on a regular basis by the regional and international organizations and promote exchange and sharing of data and statistics.

Coordination of compilation of routine fishery data and statistics through CWP that comprises 11 inter-governmental organizations⁷ is an excellent example of the cooperation among intergovernmental organizations. FAO/FI functions as a secretariat for CWP. On behalf of CWP, FI dispatches the statistical survey questionnaires - STATLANT - to relevant national authorities, thus streamlining statistical activities of the intergovernmental organizations.

Most of the regional fishery bodies and organizations compile data and information in their areas of competence and exchange the data and information with other relevant organizations. FAO/FI compiles and manages data and statistics for two FAO regional fishery bodies (i.e., CECAF and GFCM). When it is appropriate and required, FI will undertake a function of a depository of routine fishery data and statistics for other international and regional organizations and fishery bodies, and provide data and information services to them. Such arrangements enhance the role of FI in monitoring status and trends of aquaculture and fisheries, and advising and promoting international, regional and national actions necessary for sustainable aquaculture and fisheries.

FI will continue to support and collaborate with special information initiatives of the related organizations. For example, FI collaborates with NACA (Network of Aquaculture Centres in Asia) in compiling and disseminating data and information on fish pathology in Asia. For the compilation of information on on-going aquaculture and fishery research projects, FI will collaborate with SIFAR. Development of FIPIS (Fishery Project Information System) database will be renewed under the ONEFISH Community Directory that is being developed by SIFAR.

FI is fully committed to the improvement of accessibility and availability of research information through ASFA partnership that consist of 4 UN agencies, 32 national and international institutions and a commercial publisher, CSA (Cambridge Scientific Abstracts). FAO/FI as the ASFA Secretariat facilitate the development of ASFA and coordinates the input of the ASFA partners. A major effort is underway to promote access to ASFA in low-income food-deficient countries in Africa and expand geographic coverage of ASFA partners.

With the development of FIGIS that integrates and streamlines flow of data and information, FI is better equipped to facilitate global sharing of aquaculture and fishery data and

⁷ CCAMLR, CCSBT, FAO, ICCAT, ICES, IWC, NASCO, NAFO, OECD, SPC and Eurostat.

information. A strategic framework for the establishment of FIGIS's partnerships with international organizations and regional fishery bodies has been developed. FIGIS network development will eventually include the national centres of excellence.

3.11 Establishing partnerships with the like-minded organizations

Collaboration and cooperation with the like-minded organizations, including donor agencies, will be continued. Partnerships are established in four main areas, i.e., (a) compilation of databases (b) development and establishment of common and compatible data and information handling methodologies and tools noted above, (c) exchange and sharing of data and information and (d) improvement of national and regional capacities for fishery data and statistics management.

Partnership with the private sector organizations is not new to FAO/FI. FI's partnership with CSA and collaboration with commercial publishers (e.g., Blackwell Scientific Publishing and John Wiley & Sons) could serve as a model for future collaboration with the private sector. Establishment of partnerships with private sector organizations will actively be considered if such partnership helps to improve availability and accessibility of aquaculture and fishery data and information. Given the financial and personnel resource constraints encountering FI, contracting out or out-sourcing of certain operations, e.g., arrangements with competent organizations to provide certain service functions, will also be considered. However, careful consideration will be given to determination of onetime or specific tasks that can be out-sourced vis-à-vis the core functions that must be maintained and carried out within the Department. Furthermore, special attention will be given to conformity with the FAO/FI's mandates and mission, consistency with FAO's policies and procedures, ownership of data and information, and maintaining corporate or institutional memory as well as equitable availability and accessibility.

Specific Goal 4: To provide all users access to FAO information

The whole purpose of compilation and analysis of data and information is to put usable information in the hands of users, thus facilitating problem solving and informed decisions and actions. Presently, FI's data and information products are accessible and available through various media, i.e., paper publications and electronic mediums such as CD-ROM and FAO/FI web site. Paper and CD-ROM publications are mainly disseminated through FAO Quota Distribution system, using the departmental mailing list or distribution on request. FAO/FI web site that contains much of FAO/FI data and information products, including full text of many documents, is accessible to all who has access to Internet.

3.12 Improving distribution and dissemination methods and mechanisms

Experiences have shown that passive approach, i.e., we have data and information, come and use it if you wish, resulted in underutilization of FI data and information by the FI's primary clients. FI will take a proactive approach in dissemination of its data and information products, focusing on the FAO/FI's primary clients. A good and up-to-dated list of the target clients is central to coordinated and targeted dissemination and delivery of information

products and services. To ensure that FI's information products reaches to the target clients, the departmental mailing list has been revised and updated. Further efforts will be made to update the mailing regularly. It is expected that active and targeted dissemination will help to increase awareness of the Member governments that effective utilization of data and information is an essential means of achieving the goals of sustainable fisheries, thus ensuring their political commitment to compile and share reliable and timely data and information on aquaculture and fisheries.

Equitable accessibility and availability will be ensured by selecting communication mechanisms and methods appropriate for the target audiences. FI will ensure appropriate utilization of rapidly advancing information and communication technologies. At the same time, FI will take into account the information capacities and communication infrastructure of the countries, and use medium and means that are appropriate for the national capacity. All communication media and medium, both paper prints and electronic forms, will be considered in disseminating and delivering information products and services.

One of the key features of FIGIS is integration of FAO data and information based on management and policy issues. It is expected that accessibility and availability of FAO/FI's data and information will be improved further when FIGIS becomes fully operational on the Internet and CD-ROM.

The Fishery Branch Library, in collaboration with the technical units, will initiate a proactive reference services on major fisheries issues, e.g., adoption and implementation of various international agreements/initiatives and their implications and impacts on national fisheries and/or specific fisheries, for the use by national policy-planners and sector managers. Topics or subject matters will be determined by monitoring the national, regional and global fisheries issues and concerns.

Capitalizing on special events and when the need arises, e.g., major fisheries concerns/issues, FI will undertake public awareness campaigns in collaboration with the Information Division, Department of General Affairs and Information.

Functional Goal 2: To improve assistance to member countries and fishery bodies

FI will continue its long established tradition of providing technical assistance to national programmes, so that they are able to provide accurate, reliable and timely fishery data and information in conformity with internationally agreed standards.

3.13 Strengthening regional capacity and training of trainers

To ensure sustainability, special attention will be given to regional capacity building and minimizing a long-term dependence of some countries on FI for their national capacity development. Taking into account the capacities already developed by many countries and the limited availability of resources, future FI's efforts will be focused on few selected countries at a time. Once the selected countries acquire optimum capacity, they, in turn, would serve as regional training or back-up centres in their perspective regions. In this manner, FI will be able to concentrate its efforts on regional capacity building through

“training-of-trainers”, and development and provision of standard tools and methods. At the same time, the regions will acquire “self-help” capacity, thus facilitating and promoting regional and the South-South cooperation and collaboration. Whenever it is possible and appropriate, FI will continue to utilize and work with the existing regional data and information programmes (e.g., RECOSCIX-WIO, ALCOM and NACA).

We recognize that national and regional capacity building is an area that renders the opportunities to pursue collaborative actions with funding agencies. The on-going project in Africa is an example of such collaboration with the funding agencies. FI, in collaboration with SIFAR, will intensify its efforts in mobilization of international interests in building national and regional capacities in management of aquaculture and fishery data and information.

4. SUMMARY

FAO/FI is mandated to compile, analyze and disseminate fishery data and information and provide advice and objective information services to the Member governments to promote responsible aquaculture and fisheries.

Among the reasons for the slow response to implementation of various international fisheries instruments and agreements is the lack of integrated, reliable and timely data and information to support management decisions. In responding to growing demands for better information for policy-planning and informed actions at all levels, FAO/FI will take measures necessary to enhance the effectiveness and efficiency of the Departmental activities relating to compilation, analysis and dissemination of fishery data and information. The main tasks to be accomplished in the immediate future are:

- ◆ Formulation of FI's information policy;
- ◆ Systematic assessment and monitoring of information needs of FI's clients and effectiveness of FI's information programme;
- ◆ Development and implementation of FIGIS;
- ◆ Implementation of the revised departmental mailing list;
- ◆ Provision of proactive and targeted information services; and
- ◆ Improved accessibility of ASFA to the developing regions of the world and expansion of ASFA national partners.

As the information programme is an on-going activity, enhancement of the programme is a continuous task. The programme priorities and strategies for enhancing effectiveness and efficiency of the programme may have to be adjusted from time to time according to the changing circumstances. Nevertheless, our commitment to formulate and implement a need-driven information programme and work with our strategic partners will remain unchanged.