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ADVISORY COMMITTEE ON FISHERIES RESEARCH

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THE WORK OF FAO IN FISH UTILIZATION AND TRADE, WITH SPECIAL FOCUS ON RESEARCH

INTRODUCTION

1. The FAO mandate in fish utilization and trade is to i) promote the improved utilization of fish resources and the reduction of waste by increasing product yield, the efficiency of the operations which take place between harvesting the fish and its ultimate purchase and use by the consumer; ii) develop codes, standards and guidelines related to fish utilization, marketing and responsible trade; iii) monitor and assist in their implementation.

2. In a broad sense, Fisheries Research comprises all knowledge-generating activities leading to a better understanding of fisheries resources, their environment and the ways in which they are exploited, managed, processed and traded. As part of its wider range of activities, the Department therefore promotes broad-based research programmes focused on development, capacity building and management issues and concepts necessary for the elaboration of policy advice, guidelines, codes and capacity building instruments.

3. The immediate objectives for FAO research on fish utilization and trade are to:

- Undertake analyses of priorities and emerging issues on fish utilization and trade, identified by the Secretariat, by the FAO SubCommittee on fish trade or other advisory bodies, as a means to better understand the evolution of the sector and keep FAO members fully informed of policy, market governance, developments options and needs for new regional or global initiatives.
- Inform FAO's constituency and partners of the results of the above activities through a flow of publications in the form of background papers for meetings, formal publications in or outside FAO, newsletters, participation and communications at conferences, workshops and training activities, CD-ROMS or other electronic media and websites.

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4. The Fisheries Department cooperates with national, regional and international institutions and organizations in the execution of its research related activities. The national institutions comprise fish utilization research and trade promotion institutions. At the regional level, FAO collaborated with institutions and organisations such as ASEAN, Fundacion Chile, the Networks of Fish Inspectors in Latin America and Africa, WEFTA, IAFI, etc, and at the international level it collaborates with UNIDO, WTO, WHO, OECD, UNEP and UNCTAD. Such short- or long-term partnership arrangements are implemented in a contractual, collaborative, cooperative or collegiate mode depending on the activity concerned, the type of relationship between FAO and the partners and their capabilities and strengths.

5. In addition, FAO has established, progressively since the late 70s, a network of regional fish marketing information and technical advisory services (FishInfo Network) in the developing and developed countries. This network collects and disseminates regularly up-to-date information on markets and price strength on internationally traded fishery commodities. The Network comprise Infopesca (Latin America), Infofish (Asia and Pacific region), Infopeche and its subregional center IFOSA (Africa), Infosamak (Arab region), Infoyu (China), Eurofish (Central and Eastern Europe) and Globefish (based in Rome and dealing with developed countries markets). These six InfoCenters started as FAO executed regional projects to support the development of the fish industry of developing countries in the area of post-harvest fisheries, especially fish processing technology, fish safety and quality, trade and marketing. After a period of 5 to 8 years (17 years for INFOPESCA), they became intergovernmental organisations, for which the FAO Director General is the depositary of the legal agreement.

MAIN THRUSTS OF CURRENT AND FUTURE RESEARCH-RELATED ACTIVITIES

6. A number of investigations, studies and expert consultations have been conducted in the area of fish utilization and trade. They cover normative work, marketing analysis and promotion, trade promotion and governance, fish utilization, safety and quality.

i) Normative Work

7. Through its normative work, FI provides a neutral global forum to discuss and make policy decisions on issues relevant to fish utilization and trade, many of which are apprehended through research, investigative studies and consultations, as well as the preparation of relevant technical guidelines, normative documents and papers. These papers are in turn debated during the sessions of the COFI SubCommittee on Fish Trade (COFI:FT) (held every 2 years, 6 to 12 months before the COFI sessions), during the sessions of the *Codex Alimentarius* Commission (CAC) and the sessions of other relevant *Codex* Committees, meetings or consultations on improved fish utilization, and trade.

8. COFI-FT- COFI has mandated COFI:FT to provide a forum for consultations on technical and economic aspects of international trade in fish and fishery products including pertinent aspects of production and consumption and report to COFI for decision making. In particular, the work of the Sub-Committee includes:

- periodic reviews on the situation and outlook of principal fishery commodity markets covering all factors influencing them;
- on the basis of special studies, discussion of specific fish trade problems and possible solutions;

- discussion of suitable measures to promote international trade in fish and fishery products and formulation of recommendations to improve the participation of developing countries in this trade, including trade-related services;
- in conjunction with the FAO/WHO *Codex Alimentarius* Commission, formulation of recommendations for the promotion of international quality standards and the harmonization of quality control and inspection procedures and regulations;
- consultation and formulation of recommendations for economically viable fishery commodity development (e.g. value addition), including processing methods, the upgrading of products and production of final products in developing countries.

9. Over the years, the issues discussed at COFI:FT have evolved and address safety and quality regulations, HACCP implementation, implications of the Uruguay round of negotiations for fish trade, responsible fish trade and the CCRF, implications of SPS/TBT agreements for fish trade, fish trade and food security, fishmeal and BSE, CITES listing criteria, eco-labelling, harmonization of catch documentation, impact of subsidies on fish trade, traceability in the fish industry, access of small scale fisheries to international fish trade, promotion of fish value addition technology and know how projects in developing countries.

10. The 10th session of COFI:FT was held in Santiago di Compostella, Spain from 29 May to 2 June 2006. It was attended by 125 delegates from 61 Member countries and 25 observers representing 20 NGOs/IGOs. During this session, the Sub-Committee took note of recent developments concerning international trade in fishery products. More specifically, it considered particular issues related to international trade and sustainable fisheries development, namely safety and quality of fishery products; traceability and labelling of fishery products; draft Technical Guidelines for Responsible Fish Trade; fish trade and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); harmonization of catch documentation; fish trade and small-scale fisheries; fish trade and food security; rehabilitation and reconstruction of fisheries in tsunami affected countries; achievements and future projects in fisheries value addition funded by CFC.

11. Matters related to CITES appeared for the first time in the agenda of the COFI:FT during its Fourth session in 1993, following the request by the FAO Conference in 1992 to examine the links between environmental policy and international trade. There were concerns on the impact of the application of the new CITES criteria to fishery resources, especially:

- by-catch and species on which the protected species feed;
- trade in products derived from protected species and look-alike species.

12. Since then, FAO has convened an *ad hoc* Expert Group meeting (1998), 2 Technical Consultations (2000 and 2001), an *ad hoc* Expert Advisory Panel on CITES (2004), 2 expert consultations (2004), respectively on the implementation issues and on the legal issues related to CITES and commercial aquatic species, and prepared reports on the suitability of CITES criteria for listing commercially exploited aquatic species as well as for developing a work plan to explore CITES issues with respect to international fish trade.

13. A work plan for the Fisheries Department on CITES and commercially-exploited aquatic species, and the terms of reference for an *ad hoc* Expert Advisory Panel for the assessment of proposals to CITES for such species were finalized in 2004. Likewise, a FAO/CITES Memorandum of Understanding (MoU) was approved by the Secretariats of both Organizations in 2006 to facilitate dialogue and exchange of information between FAO and CITES and to address

future FAO involvement in the scientific evaluation of proposals for listing and down-listing exploited aquatic species.

14. *Codex Alimentarius* Commission (CAC) – The *Codex Alimentarius*, or The Food Code, is a set of international food standards for food commodities, codes of hygienic and technological practices, limits, criteria and guidelines for food contaminants, additives, veterinary drug residues and pesticides. In 1961, the FAO Conference established the *Codex Alimentarius Commission* (CAC) with a responsibility for implementing the joint FAO/WHO food standards programme. The CAC is empowered to establish *Codex Committees* which prepare draft standards for submission to the CAC and *Coordinating Committees* through which regions and groups of countries coordinate food standards activities in the region, including development of regional standards.

15. Currently, there are 13 vertical (or commodity) Committees, including The *Codex* Committee on Fish and Fishery Products (CCFFP), and 9 horizontal Committees, of which the work of the *Codex* Committees respectively on Food Hygiene, Labelling, General Principles, Import/Export Inspection and Certification Systems, Food Additives and Contaminants, Residues of Veterinary Drugs is relevant to fish trade.

16. The CCFFP is hosted by Norway and has been meeting since 1964. It had the mandate of developing guidelines, Codes of Practices and standards that apply to fish and fishery products in international trade. It also deals with safety and quality matters referred from, or to, other *Codex* committees and which may have an impact on the trade of fish and fishery products.

17. The role of FI is to provide, in collaboration with WHO, scientific advice to the relevant committees and to assist developing countries to take full advantage of the CAC work. This assistance includes convening expert meetings, establishing and strengthening national food control systems, conducting workshops and training courses, strengthening laboratory analysis and food inspection capabilities, presenting papers at conferences, meetings and symposia, providing guidance on *Codex* matters and developing and disseminating papers and manuals on food quality and safety.

18. During the last years, the CCFFP has been working on various standards for specific fish products (canned sardines, salted fish, smoked fish, sturgeon caviar, live and raw molluscan bivalves), in addition to the development of an international Code of Practice for fish and fishery products, including aquaculture, using the HACCP approach to deal with safety (HACCP plans) or quality Defect Action Plan (DAP) issues. This Code has been in preparation for the last 14 years. Fourteen out of its 18 sections have been finalized and approved by the *Codex* Commission http://www.Codexalimentarius.net/download/standards/10273/CXP_052e.pdf. Finalization of the code and other international standards require extensive research-based documentation and deliberations by Member Nations and coordinated by FAO/WHO and The *Codex* Secretariat.

19. Likewise, CCFFP requested FI to organize a Joint FAO/WHO/IOC *ad hoc* expert consultation on biotoxins in bivalve molluscs, a Joint FAO/WHO/OIE expert consultation on the development of antimicrobial resistance in aquaculture and a joint FAO/WHO expert consultation on risks and benefits of fish consumption. The first 2 consultations have led to the preparation of scientific reports and recommendations for finalizing relevant sections of the Code of Practice and other *Codex* standards.

20. In the area of risk analysis, risk assessment of microbiological hazards in foods has been identified as a priority area of work for the CAC. At its 32nd session in 1999, the CCFH identified a list of 21 pathogen-commodity combinations that require expert risk assessment advice. In response, FAO and WHO, jointly launched a programme of work with the objective of providing expert advice on risk assessment of microbiological hazards in foods to their Member countries

and to the CAC. This involved the establishment and leading of the work of drafting and expert groups to examine priority pathogen-commodity combinations, the holding of workshops and expert consultation to finalize guidelines for risk analysis and the coordination between the work of both the CCFFP and the CCFH. Three global risk assessments have been finalized, dealing with *Listeria monocytogenes* in ready to eat smoked fish, *Vibrio* species in seafood and marine biotoxins in bivalve molluscs.

21. Other normative activities – During the last decade, FAO has organized several expert and technical consultations to deal with the issues of subsidies (two expert consultations followed by a technical consultation), improved utilization of low value catches and by-catch (4 technical consultations), eco-labeling (3 expert consultations), fish trade and food security (one consultation), responsible fish trade and market access (one consultation). These consultations brought together experts or government representatives to develop a scientifically-based approach to address trade issues and to advance towards their common understanding. The outputs are in the form of reports and technical guidelines that have been disseminated widely, including on the FAO web site.

ii) Fish marketing analysis and promotion

22. As stated above, the FishInfo network provides regularly up-to-date studies and information on markets and price strength on internationally traded fishery commodities.

23. Within the framework of fisheries exploitation and utilisation, the programme entity of promotion of international fish trade supports access by developing countries to timely marketing information, analysis and forecasts. This support was a major recommendation of the 1984 FAO World Conference on Fisheries. Since then, it has been expanding to address the increasing and ever changing needs of developing countries where fish processing and trade play a major role as a source of employment and foreign exchange earnings. The information requirements of the fish industry and the support to government institutions in developing countries cover market analysis by fisheries commodities, price developments and statistics, in addition to an understanding of market access requirements and the facilitation of trade contacts.

24. GLOBEFISH databank (www.Globefish.org) – Back in the early 1980s, institutions from developed countries supported an FAO initiative for setting up a databank on “*International Fish Market Indicators*”. This support has continued over the year and the partnership has broadened to include partners from developing countries as well (e.g. Vietnam, Iran). The databank contains updated information on fish prices, trade statistics, news and other marketing information. In addition to providing electronic marketing and trade information. It is also a platform for the promotion of the FISH INFOnetwork and its activities and services.

25. Publications and periodicals - the following publications are prepared and disseminated regularly by Globefish:

- *Monthly Market Reports* contain information on supply, demand and major importers of fish commodities (groundfish, flatfish, salmon and trout, tuna, shrimp, small pelagics, bivalves, lobster, crab, fishmeal – fishoil, cephalopods, freshwater and aquaculture).
- *European Price Report* (monthly) contains the latest 250 prices of different fish products traded in Europe, directly from the desk of the producers and suppliers.

- *Seafood Highlights* (yearly) contains the latest market analyses for fishery commodities with price developments, market news, supply outlook. They are based on the GLOBEFISH Databank and on information supplied by the Regional FishInfo Network, over 500 correspondents and screening of some 135 fishery publications.
- *Commodity updates* (yearly) contain information from around the world on prices, production, processing, consumption, imports, and exports of the following commodities: small pelagics, bivalves, salmon, shrimp, tuna, fishmeal- fish oil, groundfish, crab, lobster, cephalopods. Globefish produces regularly (every month) a yearly update of a given commodity.
- *Research Programme*: Since 1994, Globefish has undertaken 56 studies covering individual markets, fisheries sector of countries and trade regulations. Since 2004, the Research programme studied markets for Nile Perch, Tilapia, cultured seabass and seabream and fresh for european markets, supply and demand in the Near East, Organic markets for aquaculture, supermarkets and the artisanal sector in Latin America – Case studies from Brazil and Peru and the profile of the fish industry of Russia.
- *Directory of Fish Importers and Exporters* is updated on a yearly basis and covers around 6000 companies worldwide.

iii) Trade promotion and governance

26. Conferences and industry consultations - to promote fish trade, FI initiated several commodity and investment conferences, to allow matchmaking of traders and information exchange. The International *Shrimp Conferences*, *Tuna Conferences*, the *Squid Conferences*, *Small Pelagic Conferences* and the *EAST WEST Conferences* have become milestones for fish industry and governments during the last 12 years. The *Tuna* and *Shrimp* trade conferences have been organized by Infofish every 2 years since 1994. Although not regular, the others 3 conferences are organized by private companies, in collaboration with Infosamak and Eurofish. More recently, FI and the FIshInfo Network have organized several international Conferences on *Tilapia*, *European Aquaculture*, *Catfish* and *Organic Fish Farming*. FI plans to organize a major international trade Conference on Aquaculture in 2007.

27. In 2006, FAO organized an Industry Consultative Forum with the Fish Industry leaders. The Forum discussed the Future of fish supply from Capture fisheries and aquaculture and the Impact of food retailers and the food service sector on the value chain of fishery and aquaculture products.

28. Regarding fish supply, the forum concluded a levelling off of landings from capture fisheries, and in fact even expected a decline in the future and aquaculture projections were considered too low particularly if the potential output from sea ranching were taken into account. Demand for seafood was expected to increase significantly, due to population increases and the rise of consumer income in developing countries such as China and India. This would however not necessarily lead to increased prices, but an increase in aquaculture production. Future developments of supply and demand will be influenced by product prices, species/product substitutions and consumer perceptions, the latter shaped largely by the media and NGOs. The FAO technical guidelines for eco-labelling should be expanded to inland fisheries and FAO should also work on instruments that will diversify the possibilities and systems of eco-certification.

29. Likewise, the forum concluded that the role of developing countries in supplying developed country markets with fishery products is increasing with value addition shifting to countries with low labour costs. Producers in developing countries are expected to continue integrating so as to have better control of the entire value chain and to increase profits. Competition is very intense and oligopsonistic (few buyers, many suppliers). Price, coupled with safety and quality assurances, remain the most important parameters for food retailers. The increase of big retail purchasing power will inevitably lead to increased safety and quality requirements and a reduction of price margins. The impact this will have on developing countries needs to be monitored. The meeting agreed that action was required to strengthen the bargaining position of suppliers (particularly small volume and producers from developing countries) by better organization and cooperation among producers and by information on consumer trends. This should result in more equitable distribution of benefits in the value chain and improve the image of seafood. Currently, technological improvements are resulting in better utilization of fish. Further investments in research will increasingly be dependent on healthy profits by the industry. It was also noted that the harvesting sector remains the least efficient component of the value chain.

30. WTO agreements and fisheries - FI has organized over 10 regional workshops on WTO and fish trade. These workshops aim at assisting developing member countries in meeting their obligations and to improve their negotiating skills. These workshops benefitted from several studies and expert reports on tariffs in fish trade, regional and bilateral trade agreements and their impacts on fish trade, implications of the SPS and TBT agreements for fisheries. FI has embarked upon studies on the distribution of costs and benefits along the fish food chain. Case studies on cod and marinated herring from Iceland, frozen Nile perch from Lake Victoria and salted anchovies from Morocco were made with a view to analyze how much of the retail price goes to the fishers, processors, retailers, etc. Also, a large study on the impact of fish trade on food security in 11 developing countries has been completed.

31. These studies have important implications for trade and market governance. To expand and complement this work, other studies have been initiated to assess the impact of market based standards and labels on international fish trade, the development of large retail and its impact on fish trade and export from developing countries, economics of fish shipment detentions and rejections in international fish trade, development of international guidelines for eco-labeling fish and fishery products from inland fisheries. These studies and others will assist FI in finalizing technical guidelines for responsible fish trade and organize an FAO/OECD Workshop on the challenges and opportunities of the globalization in the fisheries sector in 2007, in addition to supporting future FAO technical advice and training activities for the promotion of responsible fish trade, under the guidance and oversight of COFI:FT.

iv) Fish utilisation, safety and quality

32. Improved fish utilization - For many years, FAO has implemented a wide range of activities in this area, including training fish technologists in developing countries, applied research to introduce appropriate technologies for reducing fish spoilage, particularly in small-scale fisheries. Using insulated fish containers and training people on their design and construction has enabled many developing countries to increase artisanal fishing trip duration, while keeping fish freshness, and thus high value, for a longer period of time. This has in turn resulted in longer fish shelf life and broader marketing outreach, including to foreign markets. For instance, nowadays, many West African countries ship by air to Europe fresh fish caught using pirogues equipped with insulated containers.

33. FAO programmes have also aimed to improve handling practices, especially in small-scale fish landing sites, and fish preservation methods such as smoking, drying and salting. In this respect, FAO was able to adapt and ameliorate drastically the traditional fish curing methods used

in many developing countries. For instance, a traditional fish smoking oven from Ghana, called the Chorkor, was adapted and re-designed to improve fuel efficiency, working conditions and income of the women who smoke and trade fish and the quality of the finished product. The Chorkor oven is now widely used in many other African countries. Over the last 10 years, many NGOs have taken an active role in disseminating these appropriate technologies in developing African countries.

34. Information on bycatch and discards is being collected more systematically by observers. Most shrimp trawl fisheries (e.g. in Central America, India, Thailand) are now landing more bycatch for human consumption than in the past, partly due to increasing demand and prices paid for fish. As well, many countries have introduced turtle excluder devices to lower bycatch. Efforts are also being made to enhance the utilization of bycatch. FAO has organized a number of technical meetings to promote sustainable fishing technologies and reduction of discarding practices. Some countries, including Peru and Chile, have begun work in the industrial anchoveta fishery aiming to eliminate discarding practices.

35. In many Latin American and Northwest African countries, with abundant low value fish resources, several attempts have been made to increase the use of these resources for human consumption. The introduction of chilled or refrigerated sea water (CSW, RSW) technologies for on-board fish cooling has been successful in some countries.

36. In 2005, an FAO consultation of fish technology experts in Africa was organized in Tanzania. This consultation took stock of the research undertaken in Africa and looked at ways and means to coordinate the programs and to channel resources to fund this vital area. Based on the consultation recommendations, FAO will support applied research activities aiming at the recovery of valuable fractions from fish processing wastes and discards as useful by-products to be used in the production of healthy food for human consumption and for nutrition. In Tanzania, mushroom cultivation with wastes from fish processing activities and production of bio-active ingredients were reported. Collaborative applied research and dissemination of the technologies will be conducted with the Food Research Institute of Ghana. FAO and Fundacion Chile have initiated a study on the extraction of proteins from the salmon industry by-products and other biotechnological compounds from marine by-products, with application in various industries such as the pharmaceutical industry. Likewise, FAO is developing a manual of practical methodologies to assess fish losses, which will be applied in selected African countries. Identifying the level and types of fish post-harvest losses will assist in developing guidelines to support the implementation of the CCRF.

37. In tsunami affected countries, FI is implementing fisheries development projects to rehabilitate small scale fish processing capacity (drying, salting) and restore livelihoods of operators, mostly women.

38. FAO continues to support the implementation of industry focussed projects to develop and transfer value addition technologies to the fish industry of developing countries. These projects, funded by the CFC, look at the identification of potential products suitable for value addition, the optimization of their technological aspects, pilot trials at the industry levels, market studies and penetration activities, upscale of the technology, training and dissemination of the findings and technology improvements. Today, 5 projects have been completed, 5 are ongoing and 2 are in the pipelines. Beneficiary countries are Gambia, Bangladesh, Argentina, Brazil, Venezuela, Uganda, Kenya, Tanzania, Morocco, Mauritania, Tunisia, Guinea, Papua New Guinea, Maldives, Vietnam and Yemen. All CFC projects relate directly to the promotion of the private sector with direct participation of private firms in concert with the national government. At the same time the capabilities of the Project Executing Agencies are strengthened through experience gained in executing these projects and with FAO support.

39. Fish safety and quality – Several studies, reports and publications have been prepared by FI, in several languages and disseminated worldwide. These have been used to carry out over 100 workshops and train more than 2000 professionals from industry and the Government in HACCP-based fish quality and safety systems since 1995. This training, coupled to the provision of technical advice has enabled many developing countries to obtain, and often maintain, sanitary accreditation from the inspection services of the main fish importing markets (EU, USA, Japan). In collaboration with IAFI and UNIDO, FAO organized in 2005 the 6th World Congress on Fish Trade and Safety. The Congress attracted over 350 participants who deliberated around scientific and technical presentations by well known experts.

40. Most recently, FAO research work and training activities have been addressing issues such as the application of risk analysis in the fish industry, detentions and rejections in international fish trade, technical guidelines for improving fish safety and quality in aquaculture fish products, safety of bivalve molluscs, traceability, application of HACCP in aquaculture, market based safety and quality standards. FI will continue monitoring these areas that are likely to continue shaping international fish trade and market access for years to come.

GUIDANCE SOUGHT FROM THE COMMITTEE

41. As international fish trade expands and globalization develops further, FAO should continue to its pivotal role as a neutral forum for debating the main issues relevant to responsible fish trade and as a technical advisor assisting developing member countries to play an active role in this trade. FAO should continue to balance its normative and technical advice work, ensuring that training and technical assistance should be an opportunity to test the practical implications of the normative work and adapt it to take into consideration the new developments such as emerging fish safety issues and new developments in fish production, processing, trade and distribution.

42. The Committee is requested to advise future directions for research on i) market driven, trade-related issues impacting resources, resources management and responsible trade; ii) the impact of vertical concentration of distribution on fish supply from developing countries; iii) expanding the understanding of the impacts of fish trade on food security to other country cases; iv) improvement in fish utilization for human consumption; v) harmonization of standards and market access conditions; vi) future role and trade-related issues of aquaculture.

43. The Committee is also requested to advise on strategic partnerships to further the network of FAO collaborators in fish utilization and trade to confront better the challenges of an ineluctable globalization in fish trade.

44. Advice regarding the effect of increased use of private standards is welcome as well as on the rise of the corporate social responsibility movement.