Papers presented at the Workshop

Overview of the FAO Project on the Management of Tuna Fishing Capacity and its implementation

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ABSTRACT

The general objective of the Project has been to improve the management of tuna fisheries on a global scale, and specifically to:

- provide technical information necessary for achieving its objectives and
- identify, consider and resolve technical problems associated with the management of tuna fishing capacity on a global scale, taking into account conservation and socio-economic issues. In the implementation of the Project, FAO collaborated with tuna fishery bodies all over the world, INFOFISH (a source of marketing support for fish producers and exporters in the Asia-Pacific region), the Organization for Promotion of Responsible Tuna Fisheries (OPRT), the Secretariat of the Pacific Community (SPC), the Forum Fisheries Agency (FFA) and the World Tuna Purse Seine Organisation (WTPO), utilising their expertise, data and other information of relevance to the Project.

The Project's duration has been four years. Its activities have consisted of:

- technical studies,
- meetings of the Project's Technical Advisory Committee (TAC, plus some other meetings to review and integrate the results of the technical work and to formulate conclusions and recommendations and
- the dissemination of these findings.

The subjects of the studies have been: (1) tuna fisheries and resources, (2) estimation of tuna fishing capacity, (3) the tuna industry and (4) optimum tuna fishing capacity, management options and implications.

1. BACKGROUND INFORMATION

Tuna and tuna-like species are very important economically, and are a significant source of food for both developing and developed countries world-wide. The "principal market species", skipjack *Katsumonus pelamis*, yellowfin *Thunnus albacares*, bigeye *T. obesus*, albacore *T. alalunga*, Atlantic bluefin *T. thynnus*, Pacific bluefin *T. orientalis* and southern bluefin *T. maccoyii*, are most important among the tuna and tuna-like species in terms of both weight and value. These species are the subject of the Project's activities. For convenience, they will be referred to in this paper simply as "tuna" or "tunas".

The present tuna fishing capacity is excessive in respect to both the tuna resources and the demand for tuna products. This excess has led to an overexploitation, or even depletion, of some tuna stocks. In the recent past, prices for unprocessed tuna were

reduced to the extent that it was no longer profitable to fish for some tuna species. The problem became so critical that the owners of tuna purse seiners tried to resolve it independently of governments and international organizations by forming a global organization, the World Tuna Purse-seine Organization (WTPO), to limit, as necessary, the fishing effort generated by their vessels. The number of longliners has already been reduced in some countries, and there are plans to reduce it further. However, these voluntary actions are unlikely to be sufficient in the long-term.

In response to:

- FAO's International Plan of Action (IPOA) for the Management of Fishing Capacity and
- the status of tuna resources and fishing capacity in each ocean,

some tuna fishery bodies have already started to manage tuna fishing capacity in their areas of competence, and some others are considering it. The technical problems associated with the management of tuna fishing capacity are similar in all oceans. They are multidisciplinary, and involve conservation, socio-economic and technological issues (*e.g.* the effect of technological improvements on (1) fishing capacity, (2) effective fishing effort, mortality and catches, (3) resources, (4) prices of tuna products, which are determined also by the demand for tuna products competing with other food products and (5) the profitability of tuna fishing and processing). Presently, few, if any, of the regional fishery management organizations (RFMOs) that are involved in tuna management have the economic expertise required to address and resolve theses problems, so they must rely on the expertise of their member countries.

Tuna are fished, traded, processed and consumed almost globally. Large tuna vessels are capable of quickly moving from one ocean to another, and vessels registered in coastal countries of one ocean frequently fish in another ocean in response to changes in the apparent abundance of fish or in economic conditions. Such movements are likely to continue in the future. Transfers from one region to another make the management of fishing capacity on a regional scale more difficult than it would be otherwise. Also, substantial illegal, unregulated and uncontrolled (IUU) fishing, which occurs in all oceans and which is carried out by vessels that may transfer from one ocean to another, significantly complicates management.

For the reasons mentioned above, it is necessary to analyse, consider and discuss the technical problems associated with the management of tuna fishing capacity on a global scale in a multi-disciplinary context. This will:

- make it possible to address adequately the technical problems through intensive research into them, while avoiding the duplication of research effort;
- enhance the management of tuna fishing capacity by individual tuna RFMOs in the areas of their competence and at national levels; and
- possibly lead to some global recommendations and/or decisions to be undertaken, making the management of tuna fishing capacity more effective at the global, regional and national levels.

Therefore, at the 24th session of FAO's Committee on Fisheries, held on 26 February-2 March 2001, some countries requested FAO's assistance in addressing the problem of tuna fishing overcapacity. It recognized FAO's global multidisciplinary expertise and its role associated with fishery resources, fishing, processing and trade and its support of developing countries. It further recognized that some of these countries might need this support to participate actively in international discussions on the establishment of international and national regimes for the management of tuna fishing capacity.Accordingly, FAO has formulated a Project on the Management of Tuna Fishing Capacity: Conservation and Socio-economics, and Japan has provided funds for its implementation.

2. OBJECTIVE OF THE PROJECT

The general objective of the Project is to improve the management of tuna fisheries on a global scale. Its specific objectives are to:

- provide technical information necessary for and
- identify, consider and resolve technical problems associated with the management of tuna fishing capacity on a global scale,

taking into account conservation and socio-economic issues.

3. IMPLEMENTATION

3.1 Collaboration

To facilitate the execution of the Project, FAO has created its Task Force (TF) for the execution of the Project. Its members, who were nominated by FAO's Services and Units involved in the formulation and execution of the Project, are listed below.

- FAO Fisheries Department (FI)
  - Resources Service (FIRM)
    - Marine Dr Jacek Majkowski (Coordinator), Fishery Resources Officer
    - Ms Dora Blessich and Mr Kyriakos Kourkoliotis, Project Analysts
  - Fishery Information, Data and Statistics Unit (FIDI): Ms Adele Crispoldi and Dr Sachiko Tsuji, Senior Fishery Statisticians
  - Fish Utilization and Marketing Service (FIIU): Ms Helga Josupeit, Fishery Industry Officer
  - Development Planning Service (FIPP): Dr Rebecca Metzner, Fishery Analyst (Fishing Capacity)
  - Fishing Technology Service (FIIT)
    - Messrs Joel Prado, Andy Smith and Thomas Moth-Poulsen, Fishery Industry Officers
- Technical Cooperation Department (TC)
  - Policy Assistance Division (TCA), Field Programme Development Programme (TCAP): Mr Uchimura Motomu and Mr Kazumasa Watanabe, Programme Analysts

The Marine Resources Service (FIRM) of the FAO Fisheries Department (FI) leads and coordinates the execution of the Project. Also, the other above-listed services and units of the same department are responsible for the various activities of the Project.

Considering the Project's objectives, FAO would like to implement the Project in a way mutually beneficial to all involved in, dependent on and/or affected by tuna fishing. Fully recognizing the responsibilities and achievements of the various organizations involved in tuna fishing and their members, FAO would like to collaborate with them, utilizing their expertise, data and other information relevant to the Project that they regard as appropriate. These organizations include the tuna RFMOs, INFOFISH, the Organization for Promotion of Responsible Tuna Fisheries (OPRT), the Secretariat of the Pacific Community (SPC), the Forum Fisheries Agency (FFA) and the World Tuna Purse Seine Organization (WTPO).

Therefore, the Project has created a Technical Advisory Committee (TAC) composed of technical experts affiliated with and/or familiar with the above-mentioned organizations, so, in their personal capacity, they will:

- foster the collaboration of the organizations and their member countries with the Project and
- provide technical advice on the best ways to implement the Project.

The TAC's assistance in the Project's implementation includes:

- provision of technical advice on:
  - access to data and other information required by the Project;
  - selection of methods to be used in the Project's analyses and studies; and

– identification of consultants and contractors for these analyses and studies, and
- evaluation of the technical work done by the consultants and contractors.

The Members of TAC are listed below.

- Dr Robin Allen, Director, Inter-American Tropical Tuna Commission (IATTC)
- Mr Alejandro Anganuzzi, Secretary, Indian Ocean Tuna Commission (IOTC)
- Dr John Annala, Chair, Stock Assessment Group (SAG), Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Dr John Hampton, Manager, Oceanic Fisheries Programme (OFP), Secretariat of the Pacific Community (SPC)
- Dr James Joseph, Consultant
- Dr Peter Miyake, Scientific Advisor, Japan Tuna Fisheries Co-operative Association
- Dr Julio Morón, Assistant Director, Organización de Productores Asociados de Grandes Atuneros Congeladores (OPAGAC) and, till May 2003, Secretary, World Tuna Purse Seine Organization (WTPO)
- Dr Chris Reid, Market Advisor, Forum Fisheries Agency (FFA)
- Dr Victor Restrepo, Assistant Executive Secretary, International Commission for the Conservation of Atlantic Tuna (ICCAT)
- Dr Suba Subasinnghe, Director, INFOFISH
- Dr Naozumi Miyabe, Director, Temperate Tuna Resources Division, and *Dr Ziro Suzuki*, Director, Pelagic Fish Resources Division, National Research Institute of Far Seas Fisheries (NRIFSF)

3.2 Activities

The Project's duration is four years. Its activities consist of:

- technical work;
- meetings of the TAC, and some other meetings to review and integrate the results of the technical work and to formulate conclusions and recommendations; and
- dissemination of these findings.

This work includes:

- collation of data and other information relevant to the management of tuna fishing capacity;
- analyses of these data and information and of other relevant studies; and
- identification of future needs for additional technical work required for better management of tuna fishing capacity.

The analyses and other studies consist of:

- (A1) review of tuna resources and fisheries (the leading FAO Service(s): FIRM with assistance from FIDI),
- (A2) estimation of tuna fishing capacity (the leading FAO Service(s): FIDI/ FIIT with assistance from FIPP and FIRM),
- (A3) determination of demand for tuna raw materials and products (the leading FAO Service(s): FIIU),
- (A4) review of the socio-economic importance and profitability of the tuna industry (the leading FAO Service(s): FIIU/FIIU with assistance from FIIT and FIDI) and
- (A5) determination of options for the fisheries management, particularly that of fishing capacity (the leading FAO Service(s): FIPP/FIRM, with assistance from all other Services of FI).

In the process of their refinements, Studies A3 and A4 were combined into a single Study (A3/A4), for which the FIIU is responsible. The revised titles of the Studies are given below.

- (A1) Tuna fisheries and resources.
- (A2) Estimation of tuna fishing capacity.

- (A3/4) Tuna fishing industry.
- (A5) Optimum tuna fishing capacity, management options and implications of these.

3.3 Studies and related meetings

In mid-January 2003, proposals for the Studies were sent to the members of the TAC for their preliminary review. In response to suggestions for improvements and other comments from the TAC, the proposals for the Studies were revised, taking into account these suggestions and comments.

The first meeting of the TAC was held in Rome, Italy, on 26-28 March 2003 to:

- review methods for estimating the fishing capacity and its value from the conservation and socio-economic view points, and the data requirements;
- determine the applicability of these methods for tunas, particularly in the light of availability of input data for this estimation,
- select the methods most appropriate for use by the Project; and
- finalize the proposal for the Studies to be carried out by the Project, particularly in the context of the methods to be used by the Project for the estimation of tuna fishing capacity, its optimum value and the input data requirements.

In April 2003 after the first meeting of the TAC, the TF finalized the plan of work for implementation of the Studies to be carried out by the Project, taking into account the outcome of the first meeting of the TAC. Subsequently, the Project initiated and carried out the Studies. Emphasis was placed on Studies A1, A2 and A2/3, particularly on the collation and processing of data and other required information.

In March 15-18 2004, the second meeting of the TAC reviewed the Studies carried out by the Project and made recommendations for further work. The outcome of the meeting is documented in:

- the Report of the Second Meeting of the Technical Advisory Committee of the FAO Project "Management of tuna fishing capacity: conservation and socio-economics", Madrid, Spain, 15-18 March 2004,
- the Statement of the Technical Advisory Committee (TAC) for the FAO Project on the Management of Tuna Fishing Capacity: Conservation and Socio-Economics (GCP/INT/851/JPN) and
- the Proceedings of the Second Meeting of the Technical Advisory Committee of the FAO Project "Management of tuna fishing capacity: conservation and socio-economics". Madrid (Spain), 15-18 March 2004. FAO Fisheries Proceedings 2. Eds: W. H. Bayliff, J. I. de Leiva Moreno & J. Majkowski. Rome, 2005.

The Statement of the TAC was presented and discussed at the Technical Consultation to Review Progress and Promote the Full Implementation of the International Plan of Action (IPOA) to Prevent, Deter and Eliminate IUU Fishing and the IPOA for the Management of Fishing Capacity (Rome, Italy, 24-29 June 2004).

The 336-page Proceedings, which was published in 2005, documents the technical outcome of the Project up to the second Meeting of TAC. It provides comprehensive information collated by the Project on the subjects of its Studies. This information is presented in a form of nine substantial papers. They were peer-reviewed and edited before their publication. The information from the papers is summarized and integrated in the 19-page Overview of the Proceedings, including also the major recommendations of the TAC, which were made at its second meeting.

3.4 Major recommendations of TAC at its second meeting

Regarding the collection of data, the TAC recommended that FAO:

- promote efforts to provide external support for the collection of better information on tuna fishing in countries for which small-scale fisheries are a large part of tuna fishing activities;

- encourage countries to collect information on the characteristics and operation of tuna fishing vessels and/or fleets; and
- promote the development of a global record of tuna fishing vessels.

Regarding the management of tuna fishing capacity, the TAC recommended that FAO promote the following actions.

- Imposition of a moratorium on the entry of additional large-scale tuna vessels into the fisheries until an efficient, equitable and transparent system of management of fishing capacity is achieved;
- Establishment of a system for allowing the transfer of fishing capacity within the constraints of the capacity limits that the tuna RFMOs should have;.
- Strengthening of the management of fishing capacity, as recommended above, by any country or fishing entity that has expanded or is expanding its tuna fishing capacity ;
- Collection, by the tuna RFMOs, of information on the numbers, capacities and vessel characteristics for tuna vessels other than purse seiners and longliners (such as pole-and-line vessels and trollers) to determine if excess capacity exists for those fleets;
- Consideration of rights-based management of tuna fisheries, where appropriate, as a long-term solution for the management of excess fishing capacity.
- Establishment of or improvement of monitoring, surveillance and control systems for managing tuna fishing capacity.

In addition to the above general recommendations of the TAC, most of the papers in the Proceedings include specific recommendations as to how to overcome problems encountered during implementation of the studies.

3.5 Workshop

It was also recommended at the second meeting of the TAC that the Project, in collaboration with organizations involved in tuna research and/or management, organize a workshop to develop quantitative methods to determine the desired magnitude of or desired change in fishing capacity on the basis of the status of the stocks. Because the assessment of stock status is routinely carried out for, at least, the principal market species of tunas, the TAC was of the opinion that it might be more practical, if feasible, to determine the desired magnitude of or desired change to fishing capacity on the basis of information from these assessments, rather than from methods such as Data Envelopment Analysis (DEA) or industry surveys of tuna fishing capacity utilization. The tuna fisheries for which DEA has been performed are limited to few purse-seine fisheries, and they do not include other important tuna fisheries, such as the longline and pole-and-line fisheries that often operate on the same stocks. The other problem is that DEA requires input data different from those employed for stock assessments, and those needed for DEAs are not presently available for most tuna fisheries. Industry surveys of tuna fishing capacity utilization have not been performed to any significant extent, if at all.

Subsequently, as a result of informal discussions among some members of the TAC, it was proposed that the scope of the Workshop be extended. A preliminary proposal of the Workshop was prepared by the FAO Project and presented and discussed at the fifth Meeting of the Secretariats of Tuna Agencies and Programs (Rome, Italy, 11 March 2005). It was agreed that the studies on fishing capacity should be extended by combining economic and biological considerations. It was considered that the outcome of the Workshop would be very relevant to the work of their organizations and member countries, assisting their fisheries managers in undertaking decisions on the management of tuna fishing capacity.

Finally, the following objectives have been established for the Workshop.

A. To develop quantitative methods to determine the desired magnitude of or desired change to fishing capacity on the basis of the status of the stocks, taking into account the multi-species and multi-gear nature of the tuna fisheries;
B. To determine the feasibility of (1) routinely collecting input data for Data Envelopment Analysis (DEA) and (2) performing industry surveys of tuna fishing capacity utilization;
C. To relate DEA estimates of fishing capacity utilization to traditional estimates of fishing capacity;
D. To review the factors affecting fishing capacity (numbers of vessels, their physical characteristics, *etc.*) that could be regulated by fisheries authorities;
E. To review the existing measures for managing tuna fishing capacity, and possibly, to identify additional options for such measures in the context of the outcome of addressing Objectives A through D;
F. To prepare a Statement of the participants in the Workshop;
G. To formulate recommendations of the Workshop to the FAO Project on the Management of Tuna Fishing Capacity, FAO and the other organizations participating in the Workshop.