

**TECHNICAL CONSULTATION ON THE COLLECTION AND EXCHANGE OF FISHERIES
DATA, TUNA RESEARCH AND STOCK ASSESSMENT**

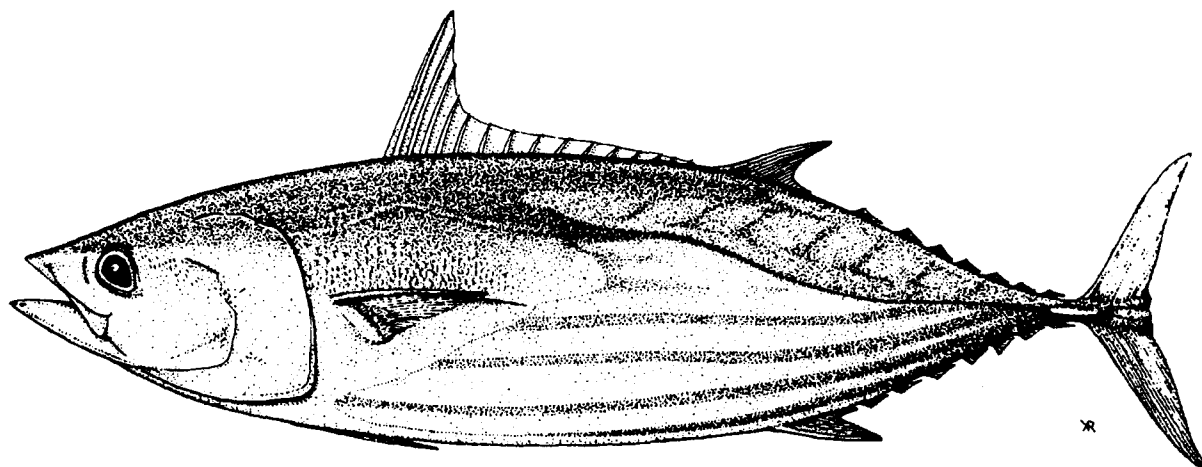
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**FUTURE ARRANGEMENTS FOR DATA EXCHANGE, TUNA RESEARCH AND STOCK
ASSESSMENT: A PROPOSAL BY THE SOUTH PACIFIC COMMISSION**

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Introduction

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (hereafter referred to as the UN Agreement) was completed in August 1995 and has been open for signature since December 1995. The objective of the Agreement is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the UN Convention on the Law of the Sea (UNCLOS). A major thrust of the UN Agreement is that it obligates Coastal States and States fishing on the high seas to cooperate in the management and conservation of straddling fish stocks and highly migratory fish stocks. Such cooperation may be pursued either directly or through an appropriate subregional or regional fisheries management organization or arrangement.

The fishery for highly migratory species in the western and central Pacific Ocean (WCPO) is of global significance, currently accounting for approximately half the world catch of primary market species of tunas. The region is unique in consisting of a large number of Coastal States, many of which have contiguous national jurisdictions. Several of those Coastal States, as well as some from outside the region, operate fishing fleets on the high seas and in the exclusive economic zones (EEZs) of other Coastal States. It is clear that effective conservation and management of tuna stocks in this region, as envisaged by the UN Agreement, requires the establishment of a regional fisheries management organization or arrangement; the number of Coastal States and States participating in the fishery would make cooperation by direct means at best inefficient and at worst completely unworkable.

A Multilateral High-Level Conference on South Pacific Tuna Fisheries was held in Honiara, Solomon Islands in December 1994, with the broad objective of promoting "the full implementation of responsible fishing operations for fishing vessels operating in the South Pacific region". The Conference did not seek to address the broader issues of management of highly migratory fish stocks, given that the UN Agreement was still being negotiated. However, the Conference did acknowledge the likelihood that these issues would need to be discussed in due course, and mandated the holding of this Technical Consultation to explore options for a scientific framework to support future cooperative conservation and management of highly migratory fish stocks in the region. It has since been announced that plans are in hand to re-convene the Multilateral High-Level Conference by mid-1997 to consider broader conservation and management issues for tuna fisheries in the western and central Pacific, including the recommendations of this meeting.

The length of time it will take to formally establish a regional fishery management organization or arrangement for highly migratory species in the western and central Pacific is uncertain. In order to facilitate the process, it is appropriate to commence discussions as soon as possible on an appropriate scientific structure to support such an organization or arrangement. This is often the first step in the development of a fishery management organization/arrangement, and hopefully ensures that scientific procedures are well established early in the history of such an organization/arrangement.

In this paper, we propose the basic elements of a scientific structure to support a future fisheries management organization or arrangement for highly migratory stocks in the western and central Pacific Ocean.

Basic elements of a scientific structure

The scientific structure that we are proposing is essentially a formalization and extension of the informal working arrangements that have existed since about 1988. Such arrangements (Standing Committee on Tuna and Billfish, South Pacific Albacore Research Group, Western Pacific Yellowfin Research Group), while they have been informal and have had no real decision-making authority in their own right, have been effective to an extent in promoting cooperation in fisheries data sharing and scientific research. They have also had the benefit of having scientific representatives of all of the major fishing nations and Coastal States involved in their work.

The basic elements of the proposed scientific structure are as follows:

A **Scientific Committee** would be the centre-piece of the scientific structure. The Scientific Committee would consist of representatives of all States with a real interest¹ in the tuna fisheries of the region. The major function of the Committee would be to produce the best possible scientific advice on tuna and related stocks of the WCPO (or in whatever areas it is deemed appropriate to conduct assessments for these stocks). One could consider the Scientific Committee to be a formalization and extension of the role of the existing Standing Committee on Tuna and Billfish.

A small number of **Species Working Groups** would report to, and be directed by the Scientific Committee. The Species Working Groups would be responsible for implementing the scientific programmes on each of the species of interest to the Scientific Committee. It is envisaged that Working Groups for each of the major tuna species (skipjack, yellowfin, bigeye and albacore) and a single working group for billfish species would be established by the Scientific Committee. These Working Groups would replace and enhance the existing informal yellowfin and South Pacific albacore working groups.

A **Statistics Working Group** would also be established by the Scientific Committee. The Statistics Working Group would agree on standards for collection, reporting, verification and dissemination of data on fisheries, consistent, as a minimum, with Annex 1 of the UN Agreement. The Statistics Working Group would also compile, maintain, evaluate and disseminate fisheries data in a form approved by the Scientific Committee. This Working Group would interact closely with the various Species Working Groups to ensure that the data requirements for stock assessment and scientific research were being met.

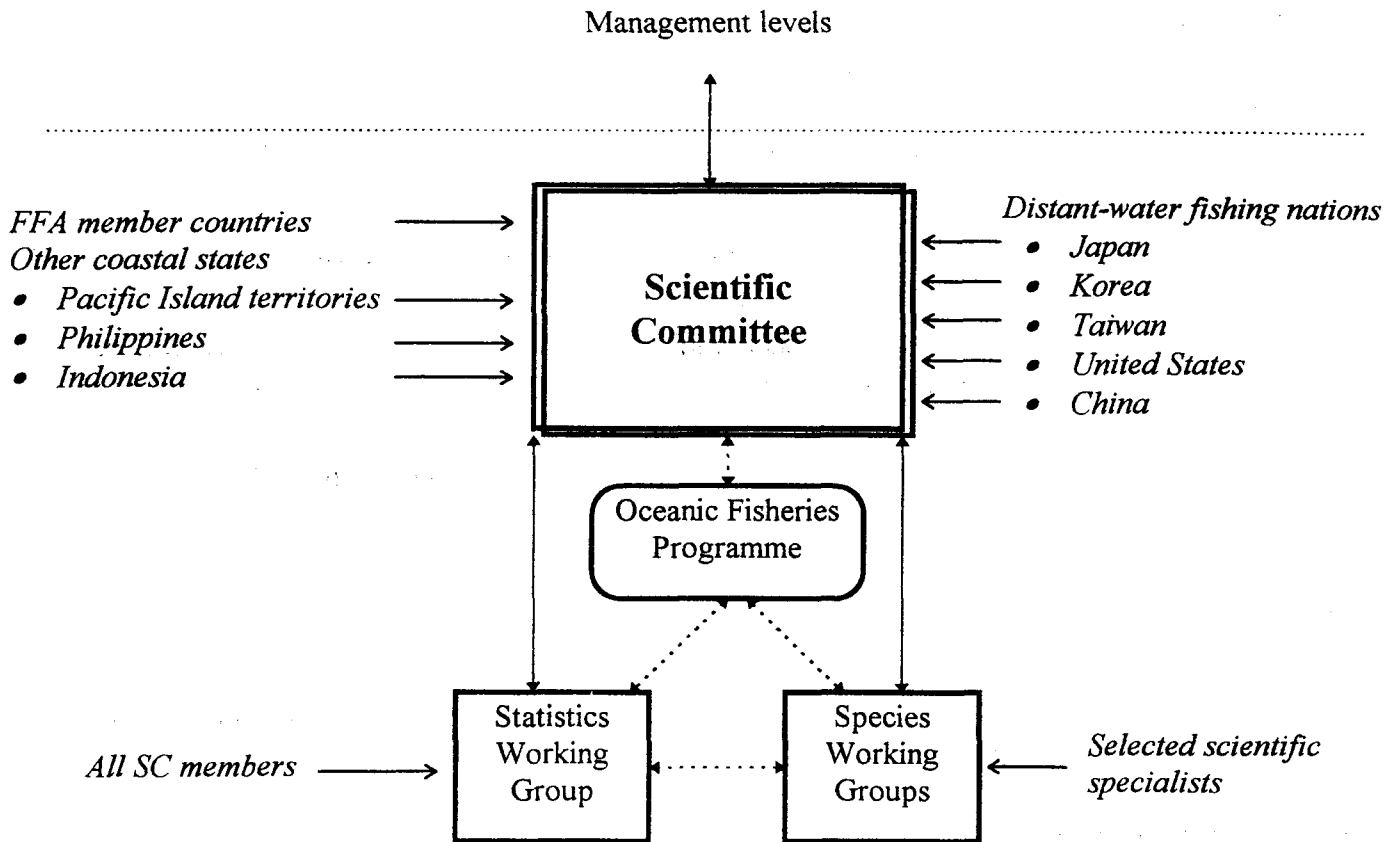
A **Scientific Secretariat** will be required to support the Scientific Committee and its subsidiary Working Groups. Given its long history in tuna research in the region, its research and data management capabilities and facilities, the South Pacific Commission's Oceanic Fisheries Programme (OFP) is proposed as the logical group to provide the necessary scientific support.

It is suggested that this scientific structure be supported by some form of international agreement. Such an agreement could precede, and eventually be subsumed by, an agreement for the formation of a regional fisheries management organization or arrangement. Alternatively, the scientific agreement could be developed concurrently with, and as an integral component of, the agreement for a regional fisheries management organization or arrangement. This decision will largely be dictated by timing. In either case, the scientific agreement would, amongst other things, detail how the scientific structure would be funded.

¹ It is yet to be defined exactly what constitutes a "real interest".

The proposed scientific structure is shown diagrammatically in Figure 1. The functions and operation of each of the components are discussed in detail below.

Figure 1. Proposed structure of the scientific component of an international conservation and management agreement for highly migratory species in the western and central Pacific Ocean.



Scientific Committee

Membership

Membership of the Scientific Committee would be open to all States or other entities with a real interest in the fishery.

Observer status should be granted to various interested organizations, such as regional organizations (e.g. the FFA and Forum Secretariat), other tuna conservation and management organizations (IATTC, IOTC, ICCAT), the FAO and various environmental groups. The presence of observers would help maintain transparency of the Committee's activities.

Functions

The prime function of the Committee will be to provide scientific advice as requested by the fisheries management body established by the regional organization or arrangement (hereafter referred to as the management body). Specific functions of the Committee will be finalized by the management body to which it would eventually report. Some of the functions of the Committee might be as follows:

- Advise the management body on appropriate limit reference points for sustainable exploitation of stocks throughout their ranges;
- Develop work programmes and budgets for the Species and Statistics Working Groups and determine their composition and terms of reference;
- Develop work programmes and budgets for research and data collection activities to be carried out by the OFP (or other research agencies) in support of stock assessment;
- Consider reports on the status of stocks by the various Species Working Groups, and on fisheries data matters by the Statistics Working Group.
- Propose the composition of an independent stock assessment review group to review the work of any Species Working Group should the Scientific Committee fail to reach consensus on any stock assessment;
- Advise the management body on the status of tuna stocks and the likely impact of a range of levels of fishing activity on those stocks.

Operation

The Scientific Committee would operate as a standing committee and meet annually to carry out the above functions. The OFP would provide secretariat support for meetings. The meeting Chairman could rotate among the members annually or biennially.

Species Working Groups

Membership

Membership of the Species Working Groups would be determined by the Scientific Committee. However, it is envisaged that the groups be small (3-6 scientists) and be restricted to scientists who can have specific technical input into the work of the group. Each Species Working Group would be coordinated by an OFP scientist. Other members would normally be drawn from the OFP and from national fisheries research agencies of member countries of the Scientific Committee. Scientists from outside the OFP and national fisheries research agencies, e.g. from universities, might be invited to participate in Working Groups, as appropriate.

Functions

The main function of a Species Working Group is to carry out research and data analysis culminating in regular scientific assessments of the stock or stocks. Species Working Groups will be required to express the statistical uncertainty associated with assessments and to use approved limit reference points in the presentation of results so that the precautionary approach can be adopted by the management body, as it deems appropriate. Assessments of non-target or associated species may also

be required, as appropriate. Each Species Working Group will be required to present an annual work plan and budget to the Scientific Committee for approval.

Operation

Species Working Groups would operate as small research teams. Their activities would be guided by medium-term (3-5 years) research plans and annual work plans endorsed by the Scientific Committee and approved by the management body. Communication among Working Group members would be facilitated in various ways. With the widespread availability of email and the various other services available through the Internet, it should be possible to accomplish much of the office-based work programme through this medium. However, we believe that it would be beneficial, from time to time, for non-OFP Working Group members to spend periods of attachment or secondment at SPC headquarters in Noumea. This would allow closer working relationships among team members to develop and give non-OFP Working Group members the opportunity to fully contribute to the research work.

As well as office-based data analysis and report preparation, it is likely from time to time that Species Working Groups will execute various field research projects that are required by the overall research plan. It is expected that both national scientists and the OFP would participate fully in such projects.

Statistics Working Group

Membership

Membership of the Statistics Working Group would be more widespread than that of the Species Working Groups. It may be desirable that all members of the Scientific Committee participate in the Statistics Working Group to facilitate the greatest possible statistical coverage of fishing activities. The Statistics Working Group would be coordinated by the OFP Fisheries Statistician, with its members made up of fisheries statisticians or other national fisheries staff responsible for data collection activities at the national level. The members of this Working Group must have "hands on" familiarity with the data collected from their national fleets, and be fully cognizant of data deficiencies, methods of collection, processing, etc.

Functions

The main initial function of the Statistics Working Group would be to recommend standards for collection, reporting, verification and dissemination of fisheries statistics, consistent, as a minimum, with Annex I of the UN Agreement and consistent with the stock assessment and research requirements of the Species Working Groups. The Working Group would then be required to meet annually to review and evaluate fisheries data and data collection procedures, making recommendations for changes where appropriate to the Scientific Committee. The Working Group would maintain, through the OFP, a series of databases, including a confidential log book catch and effort database of complete (or as near as possible to complete) coverage for all fleets operating in the region, a database of catch and effort data aggregated in such a fashion that it can be made publicly available, a database of length frequency data and other biological, oceanographic and fisheries databases as required.

Operation

The Statistics Working Group would meet annually to review and evaluate fisheries data and data collection procedures. The data to day work of data entry, database maintenance, compilation of data for distribution, development of data extraction software and maintenance of agreed data security measures would be undertaken by the OFP. The OFP would rely on national fisheries agencies and/or regional fisheries organizations to submit data according to agreed formats and schedules. Similarly, the OFP would report back to national fisheries agencies and/or regional fisheries organizations according to agreed formats and schedules. Detailed data accounting records would be maintained.

The Statistics Working Group would maintain close contact with the various Species Working Groups to ensure that the data requirements for stock assessment and other research were being met. It is anticipated that coordinated observer and port sampling programmes, operating to well-designed sampling plans, would be heavily relied upon for data collection and and data validation.

Funding arrangements

Clearly, the proposed scientific structure will require access to a secure source of funding. While detailed costings have not yet been carried out, funding of the order of US\$3-4 million per year would be a reasonable ballpark estimate. While this might appear to be high, at approximately 0.2% of the annual value of the catch, it is certainly not high by international fisheries research standards.

There are several ways in which such funds could be raised, but it is highly desirable that the principle of "user pays" or fishery-funded research be adopted. It seems intuitively reasonable that those who benefit from the exploitation of the resource should fund appropriate data collection and research activities, proportional to the benefits received. Further, developed countries are now required by international conventions such as UNCLOS and the recent UN Agreement to assist developing states with the costs of conserving and managing straddling and highly migratory fish stocks.

While the issue of funding is one that will require a lot of detailed consideration, we simply suggest here three guiding principals that could be used in developing a more detailed funding package in the future. The suggested guiding principles are:

1. Contributions in respect of catches taken on the high seas be made directly by fishing nations who fish on the high seas;
2. Contributions in respect of catches taken within areas under national jurisdiction be made by the coastal states concerned (who may in turn levy fishing operators); and
3. Contributions in respect of catches taken by vessels of developing states either on the high seas or in waters under national jurisdiction be assessed at an appropriate concessional rate.

It is anticipated that the final decisions on funding arrangements will need to be seen in the context of the overall cost of managing the regional fishery, and will be further progressed by the proposed Multilateral High-Level Conference.

Summary and conclusions

This paper proposes the basic elements of a scientific structure to support a future international fisheries conservation and management organization or arrangement for tuna in the western and central

Pacific Ocean. The proposal is consistent with the recent UN Agreement and promotes the full involvement of fishing nations and Coastal States alike. Fair and equal involvement of all interested States is ensured by the establishment of a Scientific Committee, which, overseen by a fisheries management body, will direct and coordinate scientific activities and will be open to membership by all States with a real interest in the fishery. Involvement of States will also be promoted by membership of national scientists on the Statistics and Species Working Groups.

The work of the Scientific Committee and its subsidiary Working Groups will be transparent, with the results of scientific and statistical work being published or otherwise made available to the scientific community and community in general. Adequate scientific review procedures will be put in place to ensure that the management body acts on the best possible scientific advice.

In using the existing OFP as a scientific secretariat for the structure, the proposal makes maximum use of existing scientific resources, and is therefore a more cost effective option than establishing a completely new scientific organization. It is intended that the overall financial support for the scientific structure be derived from the fishery, that the financial burden be shared by fishery participants in a fair and equitable manner and that due regard be given to developing States in this regard.