

SOUTH PACIFIC COMMISSION

TWENTIETH REGIONAL TECHNICAL MEETING ON FISHERIES
(Noumea, New Caledonia, 1-5 August 1988)

**CONSTRAINTS ON PACIFIC ISLAND INSHORE FISHERY RESEARCH,
AND THE WORK PROGRAMME OF THE SPC INSHORE FISHERIES RESEARCH
PROJECT**

(Paper presented by the Secretariat)

INTRODUCTION

1. The inaugural activity of the SPC Inshore Fisheries Research Project (IFRP) was the organisation and hosting of the 2-week SPC Workshop on Pacific Inshore Fishery Resources in March 1988. The meeting brought together fishery scientists from throughout the Pacific Islands region to discuss technical and scientific aspects of inshore fishery research and management. Discussions were also held on the specific management problems faced by participants in their own countries, and these were consolidated by the Secretariat into a list of the major constraints to inshore fishery research in the region. During its final session, the meeting requested the Secretariat to prepare a document summarising the problem areas discussed, and indicating the activities to be undertaken by the IFRP in response to these problems, for the information of the 20th Regional Technical Meeting on Fisheries. This is the purpose of the present paper.

**CONSTRAINTS ON PACIFIC ISLAND FISHERY RESEARCH AS IDENTIFIED BY
ISLAND PARTICIPANTS TO THE SPC WORKSHOP ON INSHORE FISHERY
RESOURCES**

2. The following listing of inshore fishery research constraints was developed during the meeting.

Manpower and training

General lack of manpower

Lack of general technical training

No formal accreditation of short-term or occasional training activities.

Specific forms of training required:

Counterpart or attachment training

External or in-country postgraduate level training

Computer training

Training for data technicians

Training in stock assessment

Public and school-level education on fishery research and management

Funding/technical support

- Shortages of operational funds
- Reluctance by aid donors to cover recurrent operational costs.
- Lack of general technical support
- Lack of funding for long-term research activities
- Need for cost-sharing of research facilities (vessel)
- Specific funding requirements:
 - Funds to compensate fishermen for collecting fishing data

Internal communications

- Need for improvement of awareness of the need for fishery research among administrators and decision makers.
- Need for presentation in digestible form of research/management information to decision makers, and "validation" of this information by support from external organisations.

External communication

- Lack of contact and dialogue with specialists/researchers elsewhere
- Lack of contact with organisations and institutions
- Lack of computer links between countries and organisations

Information

- Lack of access to information generally
- Specific Information needs:
 - Literature
 - Translations of technical material into English and French
 - "Peacesat" type conference link
 - Lack of taxonomic guides to planktonic, juvenile and adult commercially important species
 - Need to identify individuals who can identify specimens

Statistics

- Need for improvement of fishery statistics generally
- Lack of specific statistics on:
 - fish catches
 - fishery economics
 - fish exports
 - historical fishery information
- Difficulties in interpreting questionable fishery statistics
- Lack of information on the economic implications of fishery development activities
- Need for programming assistance to translate old records to new computer formats or systems.

Data analysis/experimental design

- Need for general assistance in this field
- Need for advice on long-term research programmes

Surveys and stock assessment

Need for general assistance in this field

Specific survey and assessment priorities:

Beche-de-mer

Trochus

Lobster

Green snail

Pearl shell

Freshwater mussel

Overfishing in Tarawa lagoon

Resource surveys in Phoenix Islands

Historical changes in cpue

Improvement of catch and yield estimates

Need to develop standardised 'broadbrush' survey techniques applicable to all countries

Need for advice on utility of L/F based methods for single-species based fisheries

Finfish research

Need for research into improved fish capture methods

Need for research on effects and performance of FADs

Continuation of existing baitfish research activities

Need to estimate deep-bottom fish resource size, appropriate levels of harvesting, and appropriate management approaches

Need for access to ciguatera testing facilities

Management

General need for advice on managing different fishery situations

Lack of information on which to base regulations

Need for studies on impact of introducing trochus on local fauna

Lack of information on traditional marine tenure and its application to management

Need for documentation of traditional fishing knowledge

Need for studies of impacts on fisheries of:

General coastal development

Urbanisation and population growth

Causeway construction

Reef blasting

Identification of critical lagoon habitats

Environmental monitoring

Mariculture

Need to identify appropriate mariculture, species, sites and culture techniques

Lack of advice on sponge culture

Need for assistance with green mussel hatchery

ACTIVITIES OF THE IFRP AND OTHER SPC PROJECTS IN RESPONSE TO IDENTIFIED CONSTRAINTS

Manpower and training

General lack of manpower

Lack of general technical training

3. Some of the problems identified under this head are broad ranging and require concerted internal action on behalf of national governments, rather than external solutions. Examples raised were general staff shortages, lack of motivation among staff, and apparently anomalous staffing structures and promotion schemes.

No formal accreditation of short-term or occasional training activities

Specific forms of training required:

Counterpart or attachment training

External or in-country postgraduate level training

Computer training

Training for data technicians

Training in stock assessment

Public and school-level education on fishery research and management

4. The question of a system of accreditation for short-term training activities and in-country research work was discussed. This issue has been raised in previous SPC meetings and clearly requires closer attention than it has received so far. Correspondence has been initiated with a view to obtaining inputs from a wide range of institutions and individuals, including Fisheries Departments, member governments, and the universities and other academic institutions that serve the region, prior to determining what action, if any, the Commission should take in this area.

5. The Commission is able to respond to specific requests for training on a case-by-case basis. Attachments at SPC headquarters, during which trainees work under supervision on research topics from their home country, have been and will continue to be organised in response to country requests. Provision for attachment training is also made in all field activities in which the IFRP is involved. At least four island scientists will be invited to participate in a survey of parrot fish resources in Palmerston Island planned for September 1988. One training attachment will be allowed for in the Fiji Beche-de-mer survey tentatively planned for October 1988. Both these projects are described in more detail below.

6. A split level computer training course, aimed at both novice users and more advanced database users is being jointly planned by SPC, FFA, and USP. The course, which should be held at USP in January/February 1988, is described in more detail in WP.8.

7. Stock assessment training courses have been run in the past by SPC. A tentative proposal for occasional in-country workshops or 'clinics' on related stock assessment problems is currently under discussion with academic and funding institutions.

8. As regards public and school-level education on fishery research and management, a number of short pamphlets are being tentatively planned for production in 1989. Some of these will cover concepts of fishery management and regulation, while others will be devoted to specific resources. Provision will be made for the translation of these into local languages if countries so request. This activity will be carried out in conjunction with the Fisheries Information Project.

Funding/technical support

Shortages of operational funds

Reluctance by aid donors to cover recurrent operational costs

Lack of general technical support

Lack of funding for long-term research activities

Need for cost-sharing of research facilities (vessel)

9. Again a number of issues raised under this heading, such as the difficulties of obtaining long-term or operational funding for research activities, are beyond the capacity of the IFRP or other external agencies to resolve.

Specific funding requirements

Funds to compensate fishermen for collecting fishing data

10. Specific funding for discrete small research projects can be provided by the IFRP for selected activities in which it is involved. Where this is not possible, project staff will assist countries to identify alternative sources of funding when requested.

Internal communications

Need for improvement of awareness of the need for fishery research among administrators and decision makers.

Need for presentation in digestible form of research/management information to decision makers, and "validation" of this information by support from external organisations.

11. Problems of inter-departmental rivalry or personal animosity between individuals involved in research projects cannot be resolved by external interference. Where the IFRP and other agencies can help is in providing information at a reasonably non-technical level on resource management issues, for presentation to policy and decision makers who do not necessarily have a fisheries background. This can be done partly via public education materials (see para 8) and supplemented at the request of member countries. The formal involvement in specific research studies of the SPC or other external organisations may in some cases add a note of authority to research results that could prove helpful to fishery scientists trying to influence management decisions.

External communications

Lack of contact and dialogue with specialists/researchers elsewhere

Lack of contact with organisations and institutions

12. Some of the communications problems raised were resolved in part by the extensive network of contacts established during the workshop itself. This will be built on by the establishment of Special Interest Groups, which will facilitate the exchange of information on specialised fishery topics. Some work has already gone into establishing the groups (see WP.3), whose maintenance will devolve on the Fisheries Information Officer.

13. Additionally, the IFRP will act as a clearing house for information requests by copying them to appropriate specialised institutions. The compilation of a register of institutions and the services they provide has begun and it is intended to publish or at least circulate this next year.

Lack of computer links between countries and organisations

14. The Commission presently subscribes to a number of commercial computer communications networks, which it uses for access to bibliographic databases, on-line conferencing and information services, and correspondence with institutions and individuals in the USA and elsewhere. It also has a direct computer link to the Forum Fisheries Agency in Honiara. However, it does not appear possible or practical at this time for the SPC to become involved in the installation of a computerised communications network among other Pacific Island countries. The Forum Fisheries Agency has taken some steps towards evaluating the feasibility of such an exercise and the FFA representative may be able to address the organisation's initiatives in this field. The SPC will support the establishment of such a network to the fullest extent possible within the limitations imposed by manpower and financial constraints.

Information

Lack of access to information generally

15. The establishment of the Pacific Island Marine Resource Information System (PIMRIS), a joint SPC/FFA/USP activity, will greatly increase the capability of the SPC Fisheries programme and its library to locate and forward technical information in response to requests from within the region. A cataloguer has been recruited (starting work late August 1988) and will compile a computerised bibliography of SPC marine resource holdings, which will enable more effective keyword-based literature searches.

Specific information needs

Literature

Translations of technical material into English and French

"Peacesat" type conference link

Lack of taxonomic guides to planktonic, juvenile and adult commercially important species

Need to identify individuals who can identify specimens

16. Funding provision for the translation into English and French of important technical information has been made within PIMRIS.

17. The possibility of re-establishing SPC as a member of a Peacesat or similar satellite conference link is being investigated. If this proves technically feasible, the IFRP will encourage the use of the link for conferencing and for workshops on marine resource issues.

18. Some information on taxonomic guides for marine species has been circulated to IFRW participants and others. Additional materials will continue to be collected and circulated.

19. The identification of taxonomic specialists and identification services will be addressed as part of the register referred to in para 13.

Statistics

Need for improvement of fishery statistics generally

Lack of specific statistics on:

fish catches

fishery economics

fish exports

historical fishery information

Difficulties in interpreting questionable fishery statistics

Lack of information on the economic implications of fishery development activities

20. Assistance to member countries in the collection, analysis and interpretation of local fishery statistics is expected to become a major focus of the IFRP. One specific project is presently under discussion. Others will be dealt with in response to country requests.

Need for programming assistance to translate old records to new computer formats or systems

21. It is envisaged that this type of assistance can be provided through training attachments or within broader statistical projects as noted in para 20.

Data analysis/experimental design

Need for general assistance in this field

Need for advice on long-term research programmes

22. For specific surveys in which the IFRP is involved, these areas will clearly form elements of the overall survey. In other cases, the Project will be in a position to collaborate with research workers having specific requirements in these fields, or to assist in locating specialist advice elsewhere.

Surveys and stock assessment

Need for general assistance in this field

Specific survey and assessment priorities

Beche-de-mer

Trochus

Lobster

Green snail

Pearl shell

Freshwater mussel

Overfishing in Tarawa lagoon

Resource surveys in Phoenix Islands

Historical changes in cpue

Improvement of catch and yield estimates

23. This was always envisaged as the major area of activity of the IFRP, and the conclusions of the workshop have confirmed this requirement. Two specific projects are currently in the planning stages :

- General resource survey of Palmerston Island (Cook Islands) with particular reference to parrot fish resources
- Comparative study of exploited and unexploited beche-de-mer stocks in Fiji, and development of management guidelines for this fishery.

24. It is expected that in future a large portion of the work of the IFRP will focus on this type of activity, in response to requests from member countries.

Need to develop standardised "broadbrush" survey techniques applicable to all countries

25. Whenever possible, those aspects of specific country projects that are of relevance to other countries of the region will be emphasised and the participation of other countries in the project will be encouraged. This is the case with the two studies referred to in para 23 above. Methodologies for both specific and more general surveys will be comprehensively documented so that they can be repeated elsewhere.

Need for advice on utility of L/F based methods for single-species based fisheries

26. The usefulness of length-frequency based stock assessment techniques is presently the subject of some controversy among specialists in the field. The IFRP will attempt to circulate the latest information in this debate and will assist member countries seek specialist advice on specific problems.

Finfish research

Need for research into improved fish capture methods

27. The SPC Deep Sea Fisheries Development Project is continuing work in this field. It is not envisaged that the IFRP will become involved except possibly to provide assistance with data analysis.

Need for research on effects and performance of FADs

28. This is an important and much-needed area of research but is beyond the scope of the IFRP to address with its present resources. A formal FAD research project is currently being considered for incorporation into the Tuna and Billfish Assessment Programme.

Continuation of existing baitfish research activities

29. Studies on baitfish can be envisaged by the IFRP in response to specific requests from member countries. It is also likely that the TBAP will continue to be involved in some aspects of baitfish research, given its relevance to pole-and-line tuna fishing.

*Need to estimate deep-bottom fish resource size, appropriate levels of harvesting,
and appropriate management approaches*

30. The responsibility for analysing the accumulated body of data from previous country assignments of the DSFD Project has now been formally transferred to the IFRP. It is expected that work on the project, which has been delayed for several years because the Commission did not have the resources to undertake it, will begin in October.

31. In addition, it is expected that the IFRP will become involved in future assignments of the DSFD Project where the emphasis is on resource assessment or has a survey and research orientation.

Need for access to ciguatera testing facilities

32. With the increase in fish exports from the region, ciguatera is re-emerging as a fish marketing problem. There is no clear consensus as yet of the most appropriate means to test for and eliminate the incidence of ciguatera in fish offered for sale. This will be the subject of a one-day workshop at the present meeting. Future IFRP activity in the ciguatera field will depend on the outcome of the workshop.

Management

*General need for advice on managing different fishery situations
Lack of information on which to base regulation*

33. It is envisaged that, apart from compiling and circulating information on fisheries regulations and other management approaches, the IFRP will become involved in specific problems on request from member countries. One project aimed at developing or regulating guidelines for inshore fish species is currently under discussion.

Need for studies on impact of introducing trochus on local fauna

34. This will form an element of the studies undertaken in the SPC/FAO - SPRADP Reef Reseeding Project (see para 38 below)

*Lack of information on traditional marine tenure and its application to management
Need for documentation of traditional fishing knowledge*

35. Several agencies, in particular SPREP and other environmental bodies, have been active in this field in the past. The IFRP will provide support to other bodies where required, and may become involved in specific projects in this field in response to country requests.

*Need for studies of impacts on fisheries of:
General coastal development
Urbanisation and population growth
Causeway construction
Reef blasting
Identification of critical lagoon habitats
Environmental monitoring*

36. Again it is envisaged that any work in these areas would be undertaken in collaboration with SPREP or other environmental agencies, with the IFRP providing fisheries inputs where required.

Mariculture

Need to identify appropriate mariculture species, sites and culture techniques

Lack of advice on sponge culture

Need for assistance with green mussel hatchery

37. Given the existence of the FAO/UNDP South Pacific Regional Aquaculture Development Programme (SPRADP), it is not envisaged that the IFRP will become involved in mariculture activities.

38. It is however, expected that the Project will make a major input to the joint SPC/SPRADP Reef Reseeding Project, in terms of resource surveys and population assessments during the different phases of population enhancement experiments. This project is described in more detail in WP.9.

SUMMARY

39. In general, the IFRP's orientation is towards assisting Pacific Island countries develop their own capabilities to undertake field survey and population assessments, and to collect, analyse and interpret fishing statistics and other information required for national resource management. The dissemination of information, the provision of advisory services, and the maintenance of special interest groups and other communications networks will also form an important part of its work, in conjunction with the Fisheries Information Sub-project.